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

IN REPLY REFER TO

AGDA-A (M) (26 Aug 71) FOR OT UT 71B035

10 September 1971

SUBJECT: Senior Officer Debriefing Report: BG Jack W. Hemingway,
 Aviation Officer, USARV and CG, 1st Aviation Brigade, Period
 12 August 1970 thru 31 July 1971 (U)

*U.S. Dept. of the Army, Assistant Chief of Staff for Force
 Development*
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Debriefing of senior officers; BG Jack W. Hemingway

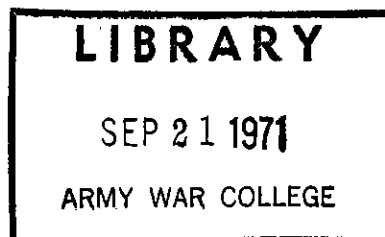
1. Reference: AR 1-26, dated 4 November 1966, subject, Senior Officer Debriefing Program (U).
2. Transmitted herewith is the report of BG Jack W. Hemingway, subject as above.
3. This report is provided to insure appropriate benefits are realized from the experiences of the author. The report should be reviewed in accordance with paragraphs 3 and 5, AR 1-26, however, it should not be interpreted as the official view of the Department of the Army, or of any agency of the Department of the Army.
4. Information of actions initiated under provisions of AR 1-26, as a result of subject report should be provided to the Assistant Chief of Staff for Force Development, ATTN: FOR OT UT within 90 days of receipt of covering letter.

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Verne L. Bowers
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DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY VIETNAM
APO SAN FRANCISCO 96375

1 AUG 1971


SUBJECT: Senior Officer Debriefing Report - BG Jack W. Hemingway

Assistant Chief of Staff for Force Development
Department of the Army
Washington, D.C. 20310

1. Inclosed are three copies of the Senior Officer Debriefing Report prepared by BG Jack W. Hemingway. The report covers the period 12 August 1970 thru 31 July 1971 during which time BG Hemingway served as Aviation Officer, USARV and Commanding General, 1st Aviation Brigade.
2. BG Hemingway is recommended as a guest speaker at appropriate service schools and joint colleges.

FOR THE COMMANDER:

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as (Trip)
2 cys w/d HQ DA


F.L. HONSOWETZ
CPT. AGC.
Assistant Adjutant General

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DEPARTMENT OF THE ARMY
HEADQUARTERS 1ST AVIATION BRIGADE
APO SAN FRANCISCO 96384

AVBACG

30 July 1971

SUBJECT: Debriefing Report, Brigadier General Jack W. Hemingway

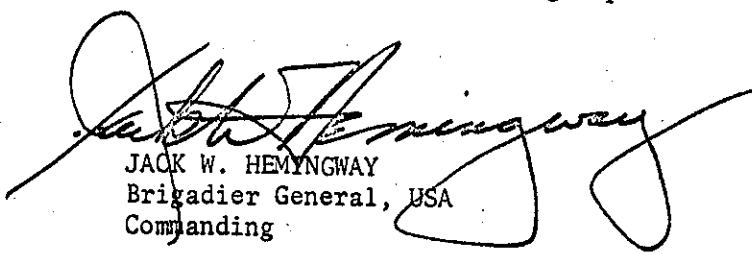
Commanding General
United States Army Vietnam
ATTN: AVHDO-DO
APO 96375

1. References:

- a. AR 1-26, Senior Officer Debriefing Program, dated 4 November 1966.
- b. USARV Supplement 1 to AR 1-26, Senior Officer Debriefing Program, dated 28 May 1971.

2. In accordance with above references, my end-of-tour debriefing report is inclosed.

1 Incl
as


JACK W. HEMINGWAY
Brigadier General, USA
Commanding

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Debriefing Report
(RCS:CSFOR-74)

Country: Vietnam

Debrief Report By: BG Jack W. Hemingway

Duty Assignment: Aviation Officer, USARV, and Commanding General,
1st Aviation Brigade

Inclusive Dates: 12 August 1970 to 31 July 1971

Date of Report: 30 July 1971

1. (U) Overview: The past year has been one of significant change in the nature and intensity of the war in Vietnam. It has also been a time of great challenge to Army aviation with the high point coming during Operation LAMSON 719 in February and March 1971. That campaign provided further proof of the efficacy of the airmobility concept and the resiliency of the helicopter and its crew in mid to high intensity combat. It also emphasized the critical importance of responsive aviation maintenance and supply and the requirement for close and continuous coordination between planner, operator, and logistician. The lessons learned and confirmed during the operation were most valuable. Inasmuch as they have been detailed by the CG of the 101st Airborne Division in his after action report, they will not be further covered here.

2. (C) USARV Aviation Resources: a. From a peak of 4549 fixed and rotary wing aircraft assigned to the USARV fleet in March 1970, today slightly over 3200 remain with the number declining steadily with the passage of time. The reduction in assigned aircraft has been caused by the drawdown of US military forces and the conversion of US helicopter units to Vietnamese Air Force squadrons through the RVNAF Improvement and Modernization (I&M) Program which will be discussed later in this report.

b. This reduction in fleet size has required extremely close management of aircraft assets. It has been necessary to laterally transfer many aircraft because the volume of aircraft to be transferred exceeded the capability of the support system to process them. Transfer standards became a point of contention in but a few cases and USARV appointed technical inspectors adjudicated the differences.

c. Every reasonable effort has been made to avoid the shipping of replacement aircraft into Vietnam to meet temporary shortages. The command has since late CY 70 intentionally maintained a float in most aircraft types of less than the DA authorization. Also, units have been

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held at as much as 25 percent short of authorization for some aircraft. This has been done to permit absorption of aircraft made excess by unit standdown. Changes in plans, such as retention of the 1st Cavalry Division aviation units in Vietnam beyond the originally planned standdown date and special operations such as LAMSON 719, have interfered with this plan. As a result a special challenge has been placed on the supply system.

3. (U) Aviation Command and Control: a. Currently published doctrine on command and control of Army aviation elements is based primarily on pre-Vietnam studies and experience except in the case of the airmobile division. During the past five years, a new system for the command, control, and supervision of non-organic aviation assets has evolved in Vietnam. Operations in this theater have provided the Army its first opportunity to evaluate and further develop effective techniques for the command and control of large numbers of non-organic aviation assets.

b. This control system is best illustrated by looking at the USARV organization for aviation command and management. At this level the Aviation Officer is both commander of the 1st Aviation Brigade and the staff aviation officer for the entire command. This latter duty includes the supervision of all functions relating to aviation including maintenance and supply. This pattern is followed in each of the corps areas where aviation group commanders of the 1st Aviation Brigade also function as staff aviation officers for the supported headquarters. These officers are rated by the Commanding General of the 1st Aviation Brigade and indorsed by the Commanding General of the supported corps forces. This system has proved eminently successful. The supported commander has available the staff expertise to plan and execute large aviation operations and possesses the authority required to achieve adequate responsiveness since he usually has operational control of the supporting aviation. Yet he is freed of the other responsibilities of command.

c. In essence, this system is not new since the basic concept has been utilized by the artillery for years. The last corps area to adopt this system was the XXIV Corps in MR 1. The buildup of aviation assets in MR 1 during LAMSON 719 quickly proved the need. Forward elements of the 1st Aviation Brigade and the 34th General Support Group (Aircraft Maintenance and Supply) were quickly established to provide the required supervision and control. These elements functioned until an aviation group headquarters could be made available to command non-organic aviation assets and provide the required aviation staff expertise at the corps level.

d. The success of this command and control system in Vietnam provides convincing argument for its continuation in the post war structure.

4. (U) Aviation Logistics Management: a. The operational responsibility for theater aviation logistics management is vested in the Commanding Officer, 34th General Support Group (AM&S). As the USARV Aviation Officer, I exercise operational control over the 34th Group and look to its commanding officer as the single manager for aviation logistics. This arrangement has

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permitted me to shift the emphasis of the maintenance and supply effort throughout RVN as required by the tactical situation. The flexibility provided by this arrangement was clearly demonstrated during LAMSON 719 when over 500 maintenance and supply personnel from the 34th Group were shifted to Military Region 1 to support over 700 aircraft involved in that operation. This relationship also provided me with an organization that has a highly qualified aviation logistics staff to trouble-shoot problem areas that require immediate and timely solutions.

b. The 34th Group units are organized to provide all required maintenance and supply support to every aircraft system within their several geographical support areas. This one stop concept eliminates the need to move an aircraft among various maintenance facilities in order to accomplish the necessary maintenance.

c. This same basic concept is used to manage aviation supply. The US Army Materiel Management Center (USAAMMC), a subordinate unit of the 34th Group, operates a centralized and automated inventory control center (ICC) for aircraft, avionics, and air armament repair parts and is the single source manager for each of the primary systems or commodities. AMMC's organization parallels that of the aviation primary National Inventory Control Point (NICP), AVSCOM. This has proved to be a more responsive system of management than is management by materiel category. The continuously low USARV aviation NORS rate reflects the soundness of this system which has provided the service required and expected by aviation units.

d. One of USARV's goals has been to eliminate excess aviation stocks. As a result, we have implemented a continuous review of our stockage position and made maximum use of turn-ins from units phasing out of country. By these methods, we have decreased excess stockage and have kept new orders to a minimum. We have also succeeded in selling permissive overstock to NICP's in CONUS, the US Air Force, the VNAF, and the Free World Forces. This program has not only reduced operating costs associated with maintaining excess stockage and provided assets to operating forces worldwide but has also reduced USARV's expenditures for aviation repair parts.

e. A major milestone accomplished in July 1970 was the conversion of AMMC's automated inventory control to the USARPAC Standard Supply System (3S). Prior to installing 3S, only ten supply cycles were processed monthly. Now 60 supply cycles are processed monthly with each cycle being capable of processing NORS requisitions, routine requisitions, receipts and adjustments and of posting transactions. The AMMC unique system, which prior to implementing 3S had 420 programs, has been reduced to 81 programs. The resultant saving in computer time has permitted AMMC to process two pre-posting cycles each day which in turn has improved considerably the accuracy of the availability balance file. The location survey and inventory system provided by 3S is directly responsible for improved control

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over receiving and issuing actions during physical inventory, thus contributing to improved record keeping and a reduction in warehouse denial rate to two percent in recent months.

f. Most important is the fact that 3S has disciplined computer operations so that supply cycles are now on a firm schedule. This results in keeping a consistent inventory in motion from CONUS each week, requisitioning objectives being recomputed each month, and the timely cancellation of excess due-ins thus ensuring that only required items are shipped to Vietnam. Based on almost a year of observation, I am convinced that the 3S system has provided USARV the vehicle to do a better job of materiel management and supply distribution than ever before.

g. Reparables management was extremely important throughout the year as budgetary limitations forced a severe cut back in new procurement of aviation repair parts. Emphasis was placed on a repair and overhaul program as a major source of repair parts, especially those which had to be purchased using OMA funds from the USARV Aviation account. USARV's Aviation Repairable Management System (ARMS) is controlled through the Theater Aircraft Repairables Program (TARP), the Aviation Collection and Classification Point (ACCP), and the TARP Automatic Return Items List (TARPARIL). A total of 1364 items are managed and reported through the above facilities and management systems. The key to ARMS is the TARPARIL which simplifies the aviation repairable return effort for the aviation Direct Support Units (DSU's) in RVN by compiling and publishing retrograde shipping instructions under one cover. This list is made up by AMMC from the AVSCOM automatic return items list, all items being worked in the TARP program, and other selected repairables critical to Army aviation support in Vietnam.

h. In order for a repairables program to be fully effective, appropriate RVN and CONUS overhaul facilities must be provided a continuing and level flow of aviation repairables. The USARV established program has been extremely effective in accomplishing this objective.

i. The retrograde of aviation materiel during FY 71 comprised a significant portion of the workload of aircraft maintenance and supply elements in RVN. An important part of this effort concerned the retrograde of aircraft. Traditionally, all aircraft except for certain fixed wing models were retrograded by air using the Military Airlift Command C-141's and C-133's that had delivered new/rebuilt Army aircraft. The use of relatively expensive airlift to backhaul aircraft for CONUS depot repair was justified by the requirement to maintain sufficient aircraft on hand at CONUS overhaul and repair facilities to meet rigid induction schedules and the need to minimize the number of aircraft in the "pipeline." However, in January 1971 large scale use of sealift for the retrograde of aircraft was undertaken in order to compensate for a decline in the availability of airlift for retrograde coupled with an

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increase in the number of aircraft to be retrograded. For this sealift, vessels of Seatrain Lines, Incorporated, chartered by the Military Sealift Command were utilized. Seatrain vessels of the Puerto Rico class offer four relatively unobstructed decks containing approximately the same amount of stowage space as the aircraft ferries (AKV) used to introduce Army aircraft into the theater during the buildup. Two of the four decks on the Seatrain provide stowage protected from the direct effect of salt water spray, thereby requiring only minimum preservation of aircraft transported thereon. During the period January through March 1971 four Seatrain vessels were loaded with 248 retrograde rotary wing aircraft which were delivered to Beaumont, Texas. While sealift was used primarily to reduce the backlog of retrograde aircraft in RVN, it also reduced shipping costs. For example, the airlift of one UH-1H from Vietnam to ARADMAC at Corpus Christi, Texas, costs \$5870 while sealift costs \$3864.

j. The shift to sealift retrograde resulted in much in-country experimentation with methods of preserving aircraft against the caustic effects of salt water. The standard preservative in the supply system, a two-coat sprayable plastic-base coating, was found to be impractical for the large scale retrograde of rotary wing aircraft. It was too time-consuming to apply, was not fully reliable, and was difficult to remove from the many small surfaces found on rotary wing aircraft. Plastic covers designed to be fitted over the aircraft and laced in place were also tested. These were found to be unsatisfactory due to their limited supply and frequently unserviceable condition. The effort to find an easy-to-apply, reliable preservative for surface movement of rotary wing aircraft led to the introduction of two new preservative mixtures. The first is a one-coat plastic-base sprayable coating which could be easily stripped from the aircraft at destination. This mixture was applied to aircraft retrograded on the last Seatrain vessel and found to be satisfactory. The second new mixture is a virtually clear lacquer which can be sprayed on the aircraft and removed at destination by washing with an alkaline solution. This mixture offers advantages in ease of application and removal. Additionally, aircraft remain flyable after the preservative has been applied. The lacquer spray was tested on a Mohawk retrograded by surface. The ideal preservative system now appears to be application of a base coat of the lacquer spray to all exposed surfaces followed by the use of paper and tape to seal the aircraft in compliance with public health regulations. The paper and tape are then secured by applying the one-coat plastic-base mixture over the tape. Quantities of both of these mixtures are enroute to RVN to be available for future large scale surface shipments of aircraft.

k. The use of the USAF CSA to retrograde aircraft began on 20 March when three CH-47 helicopters were airlifted from Cam Ranh Bay Air Base to Olmsted AFB, Pennsylvania. There have been at least two retrograde shipments of CH-47 helicopters by CSA per month since the first flight. The CSA has proved to be a distinct asset in the retrograde of aircraft due to

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its ease of loading and capacity. In the near future, the use of the CSA will be expanded to other types of aircraft, and hopefully to other airfields in RVN as the C-133B (which is the only other USAF cargo aircraft capable of transporting the CH-47) has been phased out of the active Air Force inventory. One other transportation system has proved of great value in the retrograde of aviation materiel. This is the overseas van container, especially those of Sea-Land Service, Incorporated. Vans are used for most retrograde shipments of aviation components and occasionally for certain smaller aircraft. The container van has proved to be an excellent means for controlling and protecting shipments. Sea-Land also offers a most advantageous rate, \$25 per measurement ton from RVN shipper to the Sea-Land terminal in Oakland, California, including all over-the-road and port handling. This compares to the Military Sealift Command general cargo rate of \$28.90 per measurement ton, not including over-the-road and port handling costs.

1. The retrograde of aviation materiel will continue to be a significant portion of the aircraft maintenance and supply workload in the future. Valuable experience has been gained during the past year which will facilitate future retrograde operations.

m. The unqualified success of the single manager maintenance and supply system as demonstrated by the 34th General Support Group (Aviation Maintenance and Supply) clearly supports continuation of this organizational concept in the post-war and beyond Army structure.

5. (C) Aviation Budget Program: a. Projected budget requirements for stock funded supplies within the aviation program are computed using aircraft density, a computed cost per flying hour based on actual depot issue experience, and projected flying hours by system. The flying hour program, then, is the basis of aviation budget programming. Upon receipt of the initial Authorized Operating Budget (AOB) during first quarter FY 71, a \$28.5 million shortfall existed between available funds and projected aviation requirements. It was clear that in order for the program to support continued and uninterrupted aviation services beyond the third quarter, immediate actions were required to reduce new orders. The first action taken was to reduce flying hours. Secondly, the program to reduce flying hours was complemented by a review of maintenance and supply management practices.

b. Beginning in the second quarter FY 71, command-wide emphasis was placed on reducing flying hours at least 15 percent below the level flown in FY 70. Through careful planning and intensive management of flying hours in the field, an overall FY 71 reduction of 19.6 percent was realized. This savings of more than 641,000 hours from those originally programmed to be flown resulted in a significant reduction in depot issues. The net effect of this was a sharp cut back in new orders with attendant stock fund savings.

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c. Management actions during the year contributed to substantial savings and cost avoidances. Some of the actions capitalized directly on the lower flying rate whereas others, using sophisticated management information system tools, were correlated to the reduced flying hour program. The results have been most favorable. With what was considered to be an acceptable risk, the depot requisitioning objective was reduced from 120 to 105 days and the stockage at aviation direct support supply activities was reduced from 75 to 60 days. This action immediately lowered the stockage levels at depot and in the field thereby permitting a cut back in new orders for a one-time savings of \$8.6 million. Although a careful analysis was made before this action was implemented, the situation was monitored closely for any impact the reduction of requisitioning objectives might have on aircraft availability rates. It was found that 105 days of supply at depot and 60 days at direct support supply activities were adequate to replenish requirements without degrading availability. These requisitioning objectives have been retained as standard.

d. Recycling of theater assets contributed significantly toward the reduction of new orders. Through extensive use of permissive overstockage, customer returns, and the Theater Aviation Repairables Program (TARP), new orders were reduced substantially throughout the period. AMMC manages by aircraft system rather than by materiel category. Using systems management, the manager has excellent visibility over the parts used by the system he manages. Hence, the identification and use of overstockage to offset new orders is improved. Through the creation of a customer return due-in file during FY 71, information of materiel by FSN due-in from customer units was made available to the manager. This information was used to adjust computer recommended buys. The Aviation Collection and Classification Point (ACCP) intensively screened repairables and maximized the TARP. Remaining repairables were returned to CONUS. Keeping theater assets identified and available for re-issue enabled the aviation program to employ "live off the shelf" techniques to the fullest.

e. The use of a percentage change factor when computing new requisitioning objectives has been a decisive factor in keeping depot stocks in line with drawdown in aircraft density. The requisitioning objective has been recomputed monthly rather than quarterly as required and a percentage change factor applied to the requisitioning objective for each aircraft system. The percentage change factor reduces the computed requisitioning objective two months in advance of projected drawdowns. Based on this, a due-in cancellation program identifies any existing orders for parts that should be cancelled as a result of the newly computed and factored requisitioning objective. This management action avoided the placing of new orders that would not be required when the shipment arrived in-theater.

f. Preparation frequency of the financial inventory report, previously prepared quarterly, was increased to twice quarterly to provide additional and more timely management data. This action and a general updating in the

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overall information systems program provided managers data needed to maintain the momentum in financial management.

g. Intensive management enabled the aviation program to substantially reduce new orders during FY 71. At the beginning of the second quarter, the aviation program projected a total fiscal year requirement for \$204.2 million which was \$28 million more than the USARV budget could support. The use of sound management principles and the application of continuing command emphasis on the conservation of flying hours resulted in a final requirement for \$151.8 million with over \$27 million being returned to the USARV comptroller for redistribution.

h. Without an organization such as the Aviation Materiel Management Center and the sophisticated management techniques used by that organization, control of the USARV OMA aviation budget would have been far less positive and responsive. The task of running and maintaining a fleet of over 4,000 aircraft could not have been done nearly as efficiently without AMMC assistance. The accumulated knowledge and skill which have been generated throughout the lifetime of the AMMC must be preserved within the Army. The organizational and managerial techniques developed within AMMC are worthy of emulation in other supply systems. When its presence is no longer required in Vietnam, AMMC in some form should be relocated to a CONUS or oversea installation where the organization can be kept active so it will be ready to provide essential management assistance during any future engagement involving significant aviation resources.

6. (U) Aviation Safety: a. Significant improvements have been achieved in the field of aviation safety during FY 71. The cumulative USARV accident rate decreased significantly from the FY 70 rate of 23.3 accidents per 100,000 flying hours to a rate of 19.0. This decrease of 4.3 accidents for every 100,000 hours flown in FY 71 translates to an estimated savings of \$20.8 million.

b. One of the most successful programs has been the reduction in engine failures during FY 71. The principal reason for this has been the replacement of the T53L-13A engine with the improved L-13B. The AH-1G fleet conversion is complete and the remainder of the UH-1 fleet should be converted by the end of August. The engine retrofit program and the six step turbine engine conservation program have decreased total engine failures from a high of 71 in August 1970 to a low of 13 in June 1971. The Turbine Engine Conservation Program consists of six separate programs which have as their goal the detection and elimination of engine deficiencies which will result in engine failures if left uncorrected:

(1) The Daily Engine Recording (DER) provides a daily check and comparison of engine performance at a standard pressure altitude and power setting.

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(2) The Turbine Engine Analysis Check is a detailed analysis of engine performance made during 100 hour (PMP) inspections utilizing the daily engine recordings.

(3) The Fuel Handling Operations Program emphasizes adherence to prescribed procedures for refueling and for safeguarding against fuel contamination.

(4) The Army Spectrometric Oil Analysis Program provides for periodic submission and analysis of oil samples from engines and other components to check for excessive increases in wear metal content.

(5) The Jet-Cal and Vibration Meter Checks insure proper operation of engine tachometer and temperature gauges and detect engine vibrations indicative of improper mounting or internal malfunctions.

(6) The Go-No-Go Check provides pilots with a means of checking engine operation and power reserve prior to take-off.

c. An aviation safety inspection team was organized in August 1970 for the purpose of inspecting and assisting aviation units in the areas of facilities, equipment, personnel, training, maintenance, and operations. The team inspects each battalion size unit twice yearly. A significant improvement has been evident in almost every unit that the team has visited a second time.

d. The shortage of school trained aviation safety officers (University of Southern California course) has been alleviated. As of 30 June USARV had slightly more than 100 percent of its authorized fill. Replacement continues to be a problem since many of the USC graduates are second tour aviators with extensive experience and excellent qualifications in fields other than safety. Aviation commanders have been encouraged to ensure, if at all possible, that these personnel serve at least six months of their tour in a safety related position.

e. During the period December through February, all FY 71 aviation mishap data were encoded and stored in the aviation data computer. Since February each mishap has been posted to the computer as it has occurred. Considering the number of aviation mishaps per year, the computerization of these items saves countless man hours in research of safety statistics. This system enables almost instant recall of data and the rapid analysis of any single facet or combination of facets of safety data. Readouts from this system have become valuable tools to the commander and staff officer in the analysis of safety experience and the prevention of aviation mishaps.

f. The remarkable success realized from the accident prevention program is attributable to many factors but the principle reason is

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that crewmembers and commanders are showing greater interest in aviation safety. Future gains in accident prevention will be in direct proportion to the success achieved in imbuing aviation personnel and field commanders with the idea that aviation safety and unit efficiency are coequal partners.

7. (U) Aviation Data Analysis Center (AVDAC): a. Today's management of aviation resources requires accurate, timely, and pertinent information covering a multitude of areas. Of particular benefit has been the data recall capability of the Aviation Data Analysis Center. The only organization of its kind in the Army, AVDAC provides the command a central collecting, processing, analyzing, reporting, and storing capability for daily and weekly statistics on aircraft losses, damages, readiness, and performance.

b. The AVDAC capability permits USARV to meet in a timely manner the detailed reporting requirements of COMUSMACV, CINCPAC, JCS, and DA for aviation data. In meeting these requirements, daily aircraft readiness and vulnerability reports are consolidated from more than 200 units assigned Army aircraft throughout the RVN. Weekly and monthly reports are also submitted containing information vital to operational and logistical planners.

c. In addition to fulfilling the reporting requirements of higher headquarters, AVDAC provides USARV with a responsive aviation information data bank which is used as a basis for forecasting aircraft attrition, retrograde, and flying hour rates and to provide inputs to combat lessons learned bulletins and special management studies. This capability was extremely valuable for reporting aircraft damage and loss information to Department of the Army during LAMSON 719. The requirements for up-to-date information on a multitude of aviation topics would have been most difficult to meet without AVDAC.

d. AVDAC has proved its worth as a vital link in the information chain. Its data bank contains most of the statistical history of Army aviation operations in Vietnam. Inasmuch as this valuable single source of information will be required for reference purposes for years to come, it must be preserved after the requirement for AVDAC no longer exists in Vietnam. One possibility which should be considered is for the AVDAC data to be stored in the computer of the United States Army Board for Aviation Accident Research (USABAAR) at Fort Rucker, Alabama. This computer, in fact, could become the repository for worldwide aviation data. The AVDAC data collection and analysis plan should be examined by DA to determine its application to aviation operations worldwide.

8. (C) VNAF Improvement and Modernization Program (I&M): a. Phase I of the VNAF Improvement and Modernization Program (I&M), consisting of the conversion of four VNAF squadrons from CH-34's to UH-1's, was completed in September 1969. Phase II of VNAF I&M Program, which is now

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nearing completion, added eight UH-1 squadrons and one CH-47 squadron to the VNAF structure. USARV has been extensively involved in supporting this program with personnel, aircraft, aircraft tools and parts, and special training.

b. Two problem areas became apparent during Phase II. Selected aircraft sometimes failed the final transfer inspection after an expenditure of hundreds of manhours in preparation. Procedures and criteria for transfer of aircraft to VNAF were sometimes in doubt. As a result, monthly preactivation meetings were initiated in September 1970. Meetings were attended by the Air Force Advisory Group (AFGP), VNAF, USARV, 1st Aviation Brigade, and 34th General Support Group personnel. Lessons learned during the previous month's transfers were discussed, problem areas were resolved, and the personnel handling the next transfer were briefed. In addition, beginning in December 1970, 34th General Support Group technical inspectors inspected and selected aircraft in the owning units before preparation manhours were expended. Owning unit technical inspectors also participated. The second major problem area became apparent in December 1970. AFGP and VNAF technical inspectors identified several airframe and panel repairs as not being in accordance with chapter 18 of the UH-1 Maintenance Manual. Most repairs existed on aircraft recently overhauled in CONUS. As a result, the aircraft were not considered acceptable to the VNAF I&M Program. Service engineering orders were requested and received from the Army Aeronautical Depot Maintenance Center (ARADMAC). In addition, an ARADMAC representative arrived in-theater. After consultations, the VNAF agreed to accept repairs that exceeded the level of maintenance permitted by the Maintenance Manual and repair orders were signed by the depot inspector.

9. (U) Training Requirements for Aviation Personnel: a. USARV has experienced a continuing shortage of skilled aviation maintenance enlisted personnel and aviators qualified as instructor pilots (IP's) and standardization instructor pilots (SIP's). To overcome these shortages it has been necessary to operate two in-country training facilities, the Army Aviation Refresher Training School (AARTS) and the 5th Aviation Detachment.

b. Eleven different courses covering aircraft engines, aircraft armament repair, aviation supply activities and aircraft technical inspections are being taught at the AARTS and have resulted in the training of 2099 maintenance personnel in FY 71. To conduct these courses, a TDA (authorizing two officers and 33 enlisted men) for the school was approved 9 April 1971 by HQ USARPAC. Prior to approval of the TDA, it was necessary to draw these highly skilled personnel from USARV units.

c. For several years USARV maintained four separate aircraft training teams (OH-6, OH-58, UH-1H, and AH-1G) for the purpose of conducting aircraft transition and IP/SIP training. After a close review of requirements, the training teams were consolidated in December 1970 into the 5th Aviation Detachment with an overall savings of 15 aircraft and 50 personnel. The present manning level is 18 aircraft and 87 personnel. Since there is

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no approved DA authorization for this training requirement, aircraft and personnel must be drawn from USARV assets. A request for TDA authorization for this activity is being prepared.

d. An in-country training capability continues to be necessary since the DA input of qualified personnel has been less than USARV's requirements. Of major importance, though, is the fact that this capability provides essential flexibility to the assignment of personnel. Recognizing that there will usually be some shortage of qualified aviation personnel during future conflicts and that personnel assignment flexibility is extremely important, contingency planning should recognize a requirement to operate in-country training facilities and the command concerned should be provided the necessary resources to do the job.

10. (C) Security of Installations: a. The reduction and redeployment of US combat forces, the basing of more aviation units at locations secured by RVNAF, and the current and projected low fill of aviation maintenance personnel have all combined to present an increased security problem for aviation units.

b. Aviation units in several locations have found that they must increasingly rely on organic personnel to provide security. Since the majority of personnel assigned to aviation units are aircrews and maintenance personnel, the additional requirement to fill the void in perimeter defense left by the redeployment of maneuver units impacts directly on aircraft availability.

c. The threat to aviation units will probably increase as further US combat forces are withdrawn. This, coupled with the present and forecast low fill of aviation maintenance personnel, presents a serious problem in satisfying the dual requirement of providing tactical mobility in support of combat operations and installation security.

d. Requests for TDA's to operate installations and provide security are being processed. To avoid a serious degradation of maintenance capability, these TDA's should provide personnel for the basic security structure of the installation. Guards can continue to be provided from aviation units but the numbers required and frequency of duty must be controlled so as not to interfere with mission accomplishment. Otherwise, aircraft which are not being fully utilized are being kept in-country and exposed to enemy action.

11. (C) Secure Voice in Army Aircraft: a. A program was begun in USARV approximately four years ago to equip Army aircraft with a secure voice capability. The modification work order (MWO) to accomplish this was designated as the ZYS program. The ZYS program has not progressed as rapidly as planned due to mission interference and the non-availability

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of kits to provision other than the UH-1 and CH-47 helicopters and the O-1 "Bird Dog." The O-1 aircraft are now 100 percent equipped, the UH-1's approximately 90 percent, and the CH-47's 98 percent. In addition to the fact that these three aircraft are the only ones with secure voice capability, there are other problems which have denied realization of the full potential from this program.

(1) The airborne secure voice system cannot be operated without restrictions. When operating in the secure mode, no other radio in the aircraft can transmit simultaneously. This is a rather serious shortcoming which was thought to be solved through the installation of a discriminator. Recently it was learned that the discriminator does not eliminate the possibility of secure voice transmissions being transmitted in clear text if another radio is in use.

(2) The ARVN have no Crypto equipment so all communications with them must be in the clear.

(3) The lack of a secure voice capability in the AH-1G and some other aircraft prevents the full use of secure voice in US aviation operations.

b. Although it is not planned that RVNAF will be equipped for secure communications, it is necessary to resolve the other problems noted for the system to achieve its full value within US forces.

12. (FOUO) Drug Abuse: a. A comprehensive drug control program was instituted in the 1st Aviation Brigade in October 1970 which included education, command emphasis on morale and welfare, law enforcement, amnesty, rehabilitation, and judicial or administrative disposition. The amnesty/rehabilitation phase of the program has met with better than average success.

b. Although emphasis is being placed on drug abuse and local programs are meeting with some success, the problem will continue until the RVN local environment is rigidly policed by the government of Vietnam and trafficking in drugs is controlled. As long as drugs are so readily available on the economy at prices which the soldier can afford and there is intermingling between US troops and the local populace, drug abuse prevention programs will not be completely effective.

c. With the type equipment and hazards involved, even a small number of personnel using drugs could cause severe problems within an aviation unit. Use on a regular basis of the recently arrived drug usage detection systems will do much to assist in control of this problem.

13. (U) Engine Problems and Their Impact on USARV: a. Internal failures in the T55-L11 engine resulted in grounding of the CH-47C aircraft (also referred to as the "Super C") by USARV and eventually by the Army

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worldwide. This not only denied the command the support of approximately 20 percent of the USARV CH-47 fleet for approximately sixty days but it also interrupted the planned withdrawal of two-thirds of USARV's CH-54 units which were no longer required since the CH-47C was capable of handling the loads being carried by the CH-54.

b. Another example of engine problems concerned the T53-L-13A engine. From January-October 1970 USARV experienced a total of 499 engine failures of which 332 (67%) were L-13A engines. The T53-L-13A was installed in 51 percent of the USARV fleet. The majority of the failures were attributed to a design deficiency of the fourth stage compressor. An improved version of the L-13A engine, the L-13B, was developed and began to arrive in RVN on 25 August 1970. The L-13B engine has an improved compressor rotor made of titanium.

c. As L-13B engines became available, USARV began changing out L-13A engines in AH-1G and UH-1H aircraft in that order. By March 1971 all AH-1G aircraft had L-13B engines installed and by 30 June 1971 78 percent of the UH-1H fleet was equipped with L-13B engines. During April 1971, in a further attempt to reduce in-flight engine failures, USARV began converting UH-1C (L-11 powered) aircraft to the L-13B engine and on 30 June 60 percent of the fleet had been converted.

d. The significance of the change to L-13B engines is shown in the dramatic decrease in the engine failure rate. In August 1970 USARV experienced a rate of 76 engine failures (all causes) per 100,000 flying hours compared to a 5.5 engine failure rate in May 1971.

e. The above related experiences highlight the importance of exhaustive pre-deployment equipment evaluations. It is recognized that demands for support of the war may have resulted in earlier than desirable fielding of equipment with acknowledged risks and that the state of the art may have been pushed to achieve more dramatic results. However, the most exhaustive evaluations possible and the minimum risks practicable should be accepted to avoid such problems in the future.

14. (U) Availability of Non-essential Post Exchange Items: a. During this conflict soldiers have been provided the best available material support such as uniforms, weapons, equipment, beverages, and hot meals in forward areas. In addition, however, an elaborate Post Exchange system of direct and mail order purchases has enabled the soldier to buy many of the creature comforts such as tape recorders, stereo equipment, refrigerators, and numerous other bulky and expensive items. These "nice to have" items have undeniably added to the individual soldier's pleasure and comfort. They have also presented him and his commander with the problem of safeguarding his property against pilferage. An even greater problem, however, is the one faced by the unit which finds itself practically

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immobile and requiring rather substantial airlift, sealift, or highway support in order to move. When units are required to take to the field or to relocate on a temporary basis, vast amounts of personal gear have presented storage and rear area security problems.

b. Whereas in previous conflicts the Army lacked the means and in most instances the time to provide luxuries, the US soldier of today is accustomed to having many material items. However, to insure that the Army retains the ability to move when required and to minimize security requirements, luxury items should be available through the PX system only by mail order and for delivery only to CONUS. Although the pattern is probably so well established and the complete withdrawal of most US forces from Vietnam sufficiently near to make a reversal of current practice impractical, such a change should receive careful consideration in planning for future contingencies.

15. (U) Closing: This has been the most interesting and professionally satisfying assignment of my military career.

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