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AUTHORITY

AGO ltr 29 Apr 1980

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



AGDA - A (M) (17 Mar 71) FOR OT UT 703259 26 March 1971 (\mathcal{O}) SUBJECT: Operational Report - Lessons Learned, Headquarters, 520th 2 Transportation Battalion, Period Ending 31 July 1970 (U) 24 SEE DISTRIBUTION ∞ 1. The attached report is forwarded for review and evaluation in accordance with para 4b, AR 525-15. 2. The information contained in this report is provided to insure that lessons learned during current operations are used to the benefit of future operations and may be adapted for use in developing training material. 3. Information of actions initiated as a result of your evaluation should be forwarded to the Assistant Chief of Staff for Force Development, ATTN: FOR OT UT within 90 days of receipt of this letter. BY ORDER OF THE SECRETARY OF THE ARMY: tenneth G. Mickham KENNETH G. WICKHAM lncl Major General, USA The Adjutant General DISTRIBUTION: Commanding Generals 1971 APR 16 US Continental Army Command US Army Combat Developments Command Ŀ US Army Materiel Command Commandants US Army War College US Army Command and General Staff College US Army Armor School eproduced t US Army Aviation School NATIONAL TECHNICAL INFORMATION SERVICE US Army Field Artillery School Distribution limited to U.S. Gov't. agencies only; US Army Infantry School US Army Southeastern Signal School Test and Evaluation;/mai 7/. Other requests UNCLASSION OF THIS document must be referred to Protective marking cancelled when ASSISTANT CHIEF OF STAFF FOR FORCE DEVELOPMENT separated from inclosure. (ARMY) ATTN: FOR OT UT, WASHINGTON, D.C. 20310

AVGFP-0

14 August 1970

SUBJECT: Operational Report - Lessons Learned 520th Transportation Battalion (AM&S) (GS) Period Ending 31 July 1970, RCS CSFOR-65 (R2)

Commanding General USARV ATTN: AVHCC-DST APO 96375

1. Operations: Significant Activities.

a. During this quarter the battalion received their USARV AGL. The battalion's overall rating was satisfactory. A total of 211 areas were rated; of these 12 were outstanding, 184 excellent, 11 satisfactory, and 4 unsatisfactory. The 4 unsatisfactory areas have been corrected. The companies are now receiving courtery CMMI's from the battalion staff to assist in preparing for the 34th General Support Group Quarterly CMMI.

b. The battalion personnel section in processed 21 officers and 236 enlisted personnel and out-processed 22 officers and 245 enlisted personnel. The lessening of the overall experience level of hard skills has continued to have a deleterious effect on the overall operations of the battalion. At the present time the Civilian Augmentation Force is short 37 personnel.

c. In addition to the assigned operational mission, the battalion's units participated in 368 hours of mandatory refresher training. Specialized refresher training for selected enlisted personnel was accomplished through the Battalion Training Program and the use of the Army Aviation Refresher Training School (AARTL) The battalion has continued the 14-hour block of instruction for newly assigned personnel, which includes the requirements as prescribed by USARV Reg 350-1. The drug abuse program has been a significant factor in the decrease of alleged offenses within the battalion. Eighteen personnel attend AARTS Courses at Phu Loi. Four Technical Supply personnel attended the NCR 500 Course at Long Binh. Seven aviators were transitioned through formal flight training at Vung Tau, four in the OH-58A, one in the OH-6A and two in the AH-1G. Five Officers attended the USAABAR Aviation Safety Course in Long Binh.

d. The battalion presently supports a total of 1115 aircraft and two air cushion vehicles. The decrease in the total number of aircraft supported was the result of support realignment. A total of 747 aircraft were repaired and FOR OT UT 703259

Inclosure

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14 August 1970 SUBJECT: Operational Report - Lessons Learned 520th Transportation Battalion (AM&S)(GS), Period Ending 31 July 1970, RCS CSFOR-65 (R2)

returned to user; 663 of these were repaired by the Battalion Direct Support Companies and 84 by the General Support Company. Throughout the quarter the total hours of backlog has been decreasing, and as of this date reflect 20,810 hours. The total backlog is the lowest since September 1969. This is attribut. to the overtime schedule worked in support of the Cambodian operation, numerous on site repairs and 24 hour repair service for gunships and MEDEVAC aircraft. As a significant comparison the percentage of aircraft in shop over 30 days has dropped from 33% to 30.5% and those in shop less than 10 days has increased from 42% to 49.5%.

e. A total of 2200 non-programmed components were received. Of these, 2097 were repaired and returned to the supply system or the user. The battalion portion of the Theater Aircraft Reparables Program (TARP) has been assumed by the 1st Transportation Battalion (Seaborne) FAMF. Of the 191 programed components remaining with the General Support Company, 133 have been repaired and returned to stock.

f. On 1 May 1970, the Army Aviation Refresher Training School (AARTS) was transfered from Vung Tau to Phu Loi and assigned to the battalion. The facilities at Phu Loi are limited and work is in progress to up-grade the facilities. The TDA for the school has been submitted and should be approved early next quarter. The school is presently conducting classes for VNAF students, (General Mechanics and Engine Repairmen), on the CH-47 aircraft. These are in addition to the normal input of US students. The present facilities will accommodate eight classes. At present only 4 classes are in progress due to a shortage of instructors. It is anticipated that during the next quarter the school will be on a full schedule.

g. The Aviation Electronics Support Company Central (Provisional) repaired 16,482 avionics components and completed 886 work orders in conjunction with aircraft repair during the quarter.

h. The three Direct Support Supply Activities (DSSA's) within the battalics received a total of 60,887 requests for repair parts, of which 50,770 were authorized stockage list (ASL) requests, ASL issues totalled 38,924. The demand satisfaction of 76 percent is a 6 percent increase over the previous quarter.

i. The battalion consolidated recovery section accomplished 164 maint-ence evacuations and 94 field extractions. Thirty four aircraft were recovered from Cambodia during that recently completed operation.

j. The battalion daily courier flights transported 3904 passengers and 96. tons of cargo.

k. The battalion armament maintenance shops completed 1197 maintenance work orders for repair and return to the user or theater stock.

1. A maintenance instruction team composed of battalion and USARV personnel and equipment began a tour of US installations in Vietnam. All Aviation Companies and detachments will be given formal classroom and practical instruction on the following subjects: 2 INCL

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SUBJECT: Operational Report - Lessons Learned 520th Transportation Battalion (AM&S) (GS), Period Ending 31 July 1970, RCS CSFOR-65 (R2)

- (a) Jet-Cal Analyzer.
- (b) Vibration Meter.
- (c) Oil Analysis.
- (d) Correct POL Handling.
- (e) Daily Engine Recording (DER).
- (f) Go No Go Placard.
- (g) Turbine Engine Analysis check (TEAC).

This instruction has been formulated in an effort to reduce in-flight turbine engine failure. USARV has adopted the program and is providing necessary support for the scheduling and the conduct of classes.

m. The graduation party at the An My School on 21 May was a tremendous success. Each student received a gift and each honor student an additional gift in recognition of their scholastic efforts. The school programs are somewhat limited at this time due to the summer holidays. It is anticipated that by the fall term 3 other classrooms will have ceilings and all school classrooms will have been repainted.

n. Battalion Organization: During this reporting period, the battalion consisted of a Headquarters, and Headquarters Company, the 20th Transportation Company (ADS), the 165th Transportation Company (ADS), the 605th Transportation Company (ADS), the 539th Transportation Company (AGS), the Aviation Electronic Company, Central (Provisional), and the Army Aviation Refresher Training School (AARTS) (assigned 1 May 70). The AVEL Company Central (Provisional) remains as the only provisional avionics company in the theater. The organization structure of reporting organisations is contained in Inclosure 3 through 7.

2. Lessons Learned: Commanders Observation, Evaluations, and Recommendations.

a. Personnel: NONE

b. Intelligence: NONE

c. Operations:

(1) Special Locating tool for mounting center engine deck on UH-1D and H.

(a) <u>Observation</u>: A locating tool for drilling mounting holes in new center engine decks on UH-1D and H model aircraft should be mounted to the deck to insure proper alignment of the fixture holes. (Incl-1a, 1b)

(b) <u>Evaluation</u>: This tool is used on the inboard leg of the tripod engine mount assembly. It is mounted transversely to the engine deck and INCL 3

bolted to the deck using the right and left rear engine mounting holes located at station 200, LBL13 and RBL13. The center engine mount bolt holes are then drilled using a 1/4" bit. The fixing tool is then removed, and proper installation of the center engine deck can be completed.

(c) <u>Recommendation</u>: That the above stated procedures be included as a part of the appropriate TM. A DA Form 2028 has been submitted.

(2) Local manufacture idle speed tool for the T-63 engine.

(a) <u>Observation</u>: The special tool (FSN 5120-763-7565, PN 6798292) for adjusting the idle speed on the T63-A and T63-5A Allison engine is not always available.

(b) Evaluation: The special tool listed above may be locally manufactured from a piece of 3/8" round stock cut 10" long and a 1/4" open wrench. Cut the 1/4" open end wrench in half. Slot one end of the 3/8" stock to accept the cut end of the 1/4" wrench and drill a hole through both the stock and wrench. Secure the wrench to the stock with a nut and bolt. (Incl-2). To allow for proper movement insure that the wrench can move freely from side to side.

(c) <u>Recommendation</u>: That units requiring this tool have their machine shops manufacture a sufficient number to meet their work requirements.

(3) Particle Separator problems on OH-58A aircraft.

(a) <u>Observation</u>: The particle separator on the OH-58A is not functioning as prescribed.

(b) <u>Evaluation</u>: When preformed packing (PN 2-1125455 or 2-1105455-7) is not installed or when installed and not alligned, the particle separator will not function properly. The tubes (PN 206-062-208-1 and 206-062-204-1) can be checked daily for proper seating and vertical movement. Any vertical movement is an indication of improper installation.

(c) <u>Recommendation</u>: That units having OH-58 aircraft include the above as a part of their daily inspection.

(4) Stripped igniter plugs on T53-L13 engines.

(a) <u>Observation</u>: When rigging and alignment tools are not used the threads on the igniter plugs (FSN 2975-957-9947) and the combuster housing assembly on the T53-L13 Lycoming Engine (FSN 2840-102-3969) are very easily stripped. The stripping occurs when the combustion chamber liner assembly (FSN 2840-943-2375), is not aligned properly before installation.

(b) <u>Evaluation</u>: The temporary installation of the main fuel manifolds and the igniter plugs prior to installation of the fire shield, (to include tightening the six nuts on the studs of the liner assembly), will enable the liner to be properly aligned. Once this procedure has been completed, the nuts

on the liner assembly should be tightened to insure the assembly maintains alignment after the removal of the manifolds and igniters.

(c) <u>Recommendation</u>: That units not having special rigging and alignment tools be made aware of the above procedures to insure timely and effective engine assembly.

(5) Jamming of the 20mm gun during assembly and/or disassembly.

(a) <u>Observation</u>: During the assembly and disassembling of the 20mm automatic gun (FSN 1005-133-8193) of the XM-35 weapons system, the gun (FSN 1005-133-8215) often jams.

(b) <u>Evaluation</u>: The primary cause of the jamming is the improper seating of the bolt assembly (FSN 1005-133-8806), in the rotor assembly. The bolt comes loose during it's travel through the intersection of the elliptical cam track and the clearing cam track in the housing assembly (FSN 1005-895-3722). Forward movement of the bolt assembly will jam the bolt face into the rotor web when only one of the two removable track assemblies (FSN 5340-699-9882), is guiding the bolt.

(c) <u>Recommendation</u>: During the assembly and disassembly of this system insure that there is a removable track (FSN 5340-699-9382), on both sides of the bolt assembly. (Caution should be taken not to insert fingers into the main housing assembly to reset or hold the bolt in place). It is further recommended that a wooden dowel rod be used to hold the bolt in place. The rod will protect the weapon and the individual should the rotors be accidently rotated.

(6) AH-1G ammunition compartment care and cleaning.

(a) <u>Observation</u>: Operational units are failing to maintain the teflon stripping in the ammunition compartment of the AH-1G.

(b) <u>Evaluation</u>: Broken or deteriorated teflon stripping will increase the time required to load as the ammunition containers will be difficult to slide on non-teflon coated surfaces. In some instances, the underside of the containers have been damaged to an extent that they had to be replaced.

(c) <u>Recommendation</u>: That each aircraft carry a long haired brush for the purpose of cleaning the teflon strips prior to loading the ammunition containers. Each container should be inspected prior to use. The daily inspection should also include the checking of all teflon stripping and attaching screws.

(?) Sheetmetal personnel are experiencing difficulty in making repairs to aircraft aluminum honeycomb panels.

(a) <u>Observation</u>: The sheetmetal mechanics are experiencing difficulty in core and skin honeycomb repairs. 5

(b) Evaluation: The following procedures have been found to be a suitable means of repairing honeycomb panel areas. The damage area must be counterbored as required to clean up both the damaged skin and the honeycomb area. The remaining honeycomb area must be crushed back 1/4" to 3/3" of an inch from the edge of the counterbore. Next, fabricate a replacement honeycomb insert to fit into the removed section, (insure the core ribbons are placed in the same direction as the original core). Crush this honeycomb back from the edge approximately 1/4 of an inch. Apply A4 metal set to the cavity and crushed core area of the panel, and to the crushed edges of the insert. Place the insert into the hole and hold in place with tape until the A4 has cured. When the A4 has had time to cure remove the tape and prepare the repaired area by lightly sanding the surface and cleaning it with methyl-ethyl keytone. Fabricate a doubler patch from the same material and thickness as the outer skin. The patch should overlap the damaged area by one inch. Apply A4 to the panel surface and the doubler. Maintain the doubler over the repaired area with tape. When the A4 has cured, remove the tape and refinish the outer areas as required.

(c) <u>Recommendation</u>: That the above procedures be emphasized to all personnel performing these repairs. A copy of this procedure has been submitted to the Department of Maintenance Training, Ft. Eustis, Virginia.

(8) High failure rate of goniometer synchro B3 in ARN-83 ADF receiver.

(a) <u>Observation</u>: Serviceable goniometer synchros which could have been returned to service are being replaced.

(b) <u>Evaluation</u>: On several occasions accumulated dirt and corrosion have caused goniometer synchros to indicate erratically. Previously these synchros had been discarded and new components installed. Experience has shown that by using the following procedures, the synchros can be returned to a serviceable condition:

1. Disassemble the unit, taking care not to break the delicate leads.

2. Clean the unit and insure that all dirt and corrosion are removed.

2. Reassemble the unit using RTV sealant compound around the joints and lead in wires.

(c) <u>Recommendation</u>: That the above procedures be utilized and each synchro be tested for serviceability prior to salvaging.

(9) Incorrect attenuator output from Signal Generator AN/USM-44

(a) <u>Observation</u>: Actual attenuator output on some signal generators AN/USM-44s differ from indicated output.

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(b) <u>Evaluation</u>: Incorrect procedures during calibration of Signal Generator, AN/USM-44 have resulted in some shops being furnished with Signal Generators having an output error of up to 500%. Calibration teams are now aware of the discrepancy, and procedures have been corrected. Avionics equipment aligned with these signal generators will not have proper sensitivity or squelching action.

(c) <u>Recommendation</u>: That Signal Generators used for alignment of radios which give performance specifications in microvolts should be checked prior to use. Signal generators may be checked with an ME 247 or RF Voltmeter to determine if the actual output is the same as indicated on the attenuator dial.

(10) Problems in requisitioning components of the AN/ARC-54.

(a) <u>Observation</u>: Many requests have been received for information on ordering certain components of the AN/ARC-54.

(b) Evaluation: The following components of the AN/ARC-54 are separate assemblies. The cover alone (PN 516-2383-006), is not carried in the supply system; however, by ordering (PN 516-2384-006, FSN 5305-454-3549), the requester will receive the cover plus fasteners and air filters. In addition the rack retaining ring, item #12, page 4-87, fig 4-43, (TM 11-5321-244-35, CPN 340-0660-000), may be ordered as rack, retaining ring (FSN 5340-543-3361).

(c) <u>Recommendation</u>: That units be made aware of the above information and that it be utilized in the preparation of requisitions.

(11) Production change in C-3835/ARC-54 Control Head.

(a) <u>Observation</u>: C-3835/ARC-54 Control Heads are being received, containing a capacitor not shown on schematic diagrams for this piece of equipment.

(b) <u>Evaluation</u>: Collins Radio Corp indicates that this is a change that was made during production. It is installed between S101-C and ground. The value is .022 mfd 100VDC. It will be referred to as C101, CPN 913-3022-000. Manufacture's code S1349, PN CK15AX223M and the FSN is 5910-939-7510.

(c) <u>Recommendation</u>: That when required, this capacitor may be requisitioned through the use of FSN 5910-939-7510.

(12) Improper procedure utilized with Signal Generator AN/ARM-5

(a) <u>Observation</u>: Technicians are not observing the required warmup period for the Signal Generator AN/ARM-5.

(b) <u>Evaluation</u>: Proper procedure for utilisation of Signal Generator AN/ARM-5, requires a warm-up time of 30 minutes prior to use for alignment purposes. Some technicians turn off this requipment when not in use, When

the piece of equipment is again required, they turn it on, and immediately use it for alignment purposes. Receivers aligned with this signal generator without first allowing the proper warm-up time, will not be correctly aligned.

(c) <u>Recommendation</u>: That Technicians be instructed that a 30 minute warm-up is required prior to using the Signal Generator, AN/ARM-5.

- d. Organization: NONE
- e. Training: NONE
- f. Logistics: NONE
- g. Communications: NONE
- h. Material: NONE
- i. Other: NONE

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LTC, TC Commanding

AVGF-B (14 Aug 70)1st IndCPT Barefoot/mai/923-4325SUBJECT:Operational Report-Lessons Leanred, HQ, 520th Transportation
Battalion (AM&S)(GS) for Period Ending 31 July 1970, ACS
CSFOR-65 (R2)

DA, HEADQUARTERS, 34TH GENERAL SUPPORT GROUP (AM&S), APO 96309 7 NOV 170

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

TO: Department of the Army, ATTN: ACSFOR, Washington, D. C. 20310

This headquarters has reviewed and concurs with the Operational Report-Lessons Learned for the quarterly period ending 31 July 1970 from Headquarters, 520th Transportation Battalion (AN&S)(GS), RCS CSFOR-65 (R2)

FOR THE COMMANDER:

W. L. DAMPIER CPT, AGC

CPT, AGC Adjutant

AVHDO-DO (14 Aug 70) 2d Ind

SUBJECT: Operational Report - Lessons Learned 520th Transportation Battalion (AM&S) (GS) Period Ending 31 July 1970, RCS CSFOR-65 (R2)

Headquarters, United States Army Vietnam, APO San Francisco 96375 30 NOV 1970

TO: Commander in Chief, United States Army Pacific, ATTN: GPOP-DT, APO 96558

1. This Headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 July 1970 from Headquarters, 520th Transportation Battalion (AM&S) (GS) and comments of indorsing headquarters.

2. Comments follow:

a. Reference item concerning "Special Locating Tool for Mounting Center Engine Deck on UH-1D and H," page 3, paragraph 2c(1): nonconcur. The recommendation to change the procedures in the technical manual as submitted on DA Form 2028 will be evaluated by USAAVSCOM Engineering Section and a decision will be forwarded through the Army Equipment Records System. Unit has been so advised.

b. Reference item concerning "Particle Separator Problems on OH-58A Aircraft," page 4, paragraph 2c(3): nonconcur. The only acceptable check to determine if the tubes are properly seated is a visual check to assure that a safety wire on the tang nuts is in place. The tubes should not be moved and checking them for vertical movement may rupture the preformed packing causing leakage. This information has been forwarded by a Bell Helicopter technical representative to the 34th Support Group who will inform all support units of the restriction. No action by USARPAC or DA is recommended.

c. Reference item concerning "Jamming of the 20mm Gun During Assembly and/or Disassembly," page 5, paragraph 2c(5). This procedure is accepted practice and does not violate technical manuals or policy. No action by USARPAC or DA is recommended.

FOR THE COMMANDER:

Agistant Adjutant General

Cy fu**rn:** 34th GS Gp 520th Trans Bn

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GPOP-DT (14 Aug 70) 3d Ind SUBJECT: Operational Report of HQ, 520th Transportation Battalion (AM&S) (GS) for Period Ending 31 July 1970, RCS CSFOR-65 (R2)

HQ, US Army, Pacific, APO San Francisco 96558 2 4 DEC 76

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

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:

Allin, 11 L.M. OZAKI CPT, AGC

Asst AG

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ILLUSTRATION .1



NOTE B: & Dia, Hole

The areas outlined in red are $\frac{1}{2}$ inch spacers rivited to the "T" extrusions to provide clearance for the drain channels mounted on the engine deck.

-Inch-ta

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Adjustment tool for OH-58A idle speed.

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CO, 520th Transportation Battalion	
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