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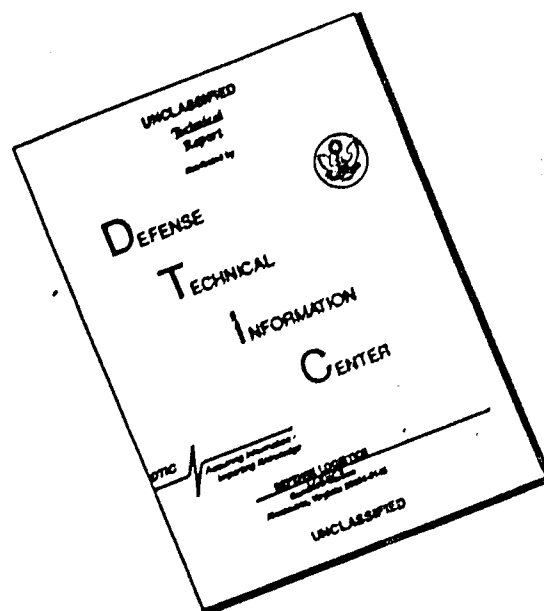
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DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

AGDA (M) (6 Nov 69)

19
FOR OT UT 693131

20 November 1969

SUBJECT: Operational Report - Lessons Learned, Headquarters, 145th Aviation Battalion, ~~Period Ending 31 July 1969 (U)~~

(Combat) (U) (S)

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1. Subject report is forwarded for review and evaluation in accordance with paragraph 4b, AR 525-15. Evaluations and corrective actions should be reported to ACSFOR OT UT, Operational Reports Branch, within 90 days of receipt of covering letter.
2. Information contained in this report is provided to insure appropriate benefits in the future from lessons learned during current operations and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

Operational rept. for quarterly period ending
31 Jul 69.

Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 145TH AVIATION BATTALION (COMBAT)
APO San Francisco 96227

"FIRST IN VIETNAM"

AVBACA-BC

10 August 1969

SUBJECT: Operational Report of 145th Aviation Battalion (Combat) for
Period Ending 31 July 1969 (RCS CSFOR-65) (RI) (U) (VIC: WCYNAA)

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(U) Under provisions of AR 525-15, AR 870-5, and USARV Regulation 525-15,
the Quarterly Operational Report - Lessons Learned is submitted.

John J. Top
JOHN J. TOP
LTC FA
Commanding

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OPERATIONAL REPORT - LESSONS LEARNED for period ending 31 July 1969.

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 145TH AVIATION BATTALION (COMBAT)
APO San Francisco 96227

"FIRST IN VIETNAM"

AVBACA-BC

10 August 1969

SUBJECT: Operational Report of 145th Aviation Battalion (Combat) for
Period Ending 31 July 1969 (RCS CSFOR-65) (RI) (U) (UIC: WCYNAA)

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I. (C) SECTION 1 - Operations Significant Activities

A. Chronology of Significant Events

1. The 145th Aviation Battalion (Combat) is organized with three (3) Aviation Companies (Assault): 68th (Top Tigers), 118th (Thunderbirds) and 190th (Spartans); one Aviation Company (Attack), 334th (Sabers) and the Headquarters and Headquarters Company (Old Warriors). Additionally, the Battalion has an Aviation Support Detachment and two (2) Medical Detachments attached. There were no significant changes in the Battalion's basic organization or attachments during the reporting period.

2. During this quarter, the 145th Aviation Battalion (Combat) continued in support of Allied forces within the III Corps Tactical Zone. At the onset of the quarter, primary support was directed toward the three major ARVN units operating in the III Corps Tactical Zone (5th ARVN Division, 18th ARVN Division and 25th ARVN Division). Occasional support was also rendered the 5th Special Forces Group, BHTAC, CMAC, and Rung Sat Special Zone.

3. On 20 June 1969, the Battalion's missions were altered to include support of the 199th Light Infantry Brigade and the 3rd Brigade of the 9th Infantry Division and excluding support of the 5th ARVN Division. Although the effects of the change in missions is still being analyzed, it is felt that the Battalion is currently accomplishing more work while flying less hours. Utilization of Combat Assault Companies has proven to be approximately sixty-five (65) percent in support of US Forces and the remaining thirty-five (35) percent has been divided in support of the 18th and 25th ARVN Divisions with occasional support provided BHTAC, CMAC, Rung Sat Special Zone and 5th Special Forces Group.

4. The 334th Aviation Company (Attack Helicopter) continued in support of "Firefly" missions for the 25th ARVN Division, BHTAC, and CMAC through 20 June 1969. On that date an informal training program was initiated by the 334th to familiarize the pilots of the 117th Aviation Company (Assault Helicopter) with procedures and tactics involved in "Firefly". The ultimate goal being the transfer of 25th ARVN Division and BHTAC "Firefly" missions to the 117th. The remaining "Firefly" mission (CMAC) was passed to the 120th Aviation Company (Assault Helicopter) on 23 July 1969 after a thorough training program had been completed.

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5. The 334th Aviation Company (Attack Helicopter) is currently providing armed helicopter escort and emergency stand by to II Field Forces AAE in general support of III Corps Tactical Zone. One (1) fire team is committed in support of the 3rd Mobile Strike Force and two (2) fire teams provide Emergency Stand By to the 151st Ranger Battalion. The commitment to the 151st Ranger Battalion is for continual twenty-four (24) hour support. In addition to regularly assigned missions, OPCON fire teams are supplied to other Aviation units in the III Corps area on request from II Field Forces AAE. The company also has two (2) light fire teams OPCON to the Battalion S-3. These are utilized as needed by the Assault Companies on Combat Assaults and have provided the units supported greater fire power and flexibility while increasing the 334th's utilization and number of hours flown.

6. From 1 May 1969, through 31 July 1969, the companies of the 145th Aviation Battalion (Combat) flew 80,443 sorties and logged a total of 29,915 flying hours. Troops carried numbered 147,968 and there were 411 tons of cargo transported. Enemy losses inflicted by the Battalion were 208 enemy MRA, 125 structures damaged or destroyed, and 214 sampans destroyed. During this quarter, the Battalion suffered 6 KIA, 4 killed not as a result of hostile action, and 9 WIA. Aircraft losses for the quarter were 11 damaged and 7 destroyed. For a detailed breakdown of the operational statistics, see Inclosure 3.

B. Mission and Organization

1. Mission: The mission of the Battalion has not changed and continues as follows: To augment the capabilities of II Field Forces Vietnam and the Republic of Vietnam forces operating in the III Corps Tactical Zone.

2. Organization: The organization of the 145th Aviation Battalion (Combat) has not changed during this reporting period, and is depicted on the organizational chart. (Inclosure 1)

C. Command and Staff

1. Significant personnel changes during the reporting period were as follows:

a. Commanding Officer, 145th Aviation Battalion (Combat)

Outgoing: LTC Carl H. Mc Nair, Jr. (31 May 69)
Incoming: LTC John J. Top

b. Battalion Executive Officer

Outgoing: MAJ Giffen A. Marr (15 May 69)
Incoming: MAJ Sammy L. Childs

Outgoing: MAJ Sammy L. Childs (15 Jul 69)
Incoming: MAJ Robert H. Desjardins

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- c. Battalion S-1/Adjutant
 - Outgoing: CPT Carlos M. Inacio (20 Jul 69)
 - Incoming: CPT Loren T. Saxtion
- d. Battalion S-2
 - Outgoing: CPT Charles E. John (17 Jun 69)
 - Incoming: CPT Steven L. Colliau
- e. Battalion S-3
 - Outgoing: MAJ Sammy L. Childs (15 May 69)
 - Incoming: MAJ Thomas G. Moody, Jr.
 - Outgoing: MAJ Thomas G. Moody, Jr. (3 Jun 69)
 - Incoming: CPT Douglas R. Terrell
- f. Battalion S-4
 - Outgoing: CPT Rufus S. Manley (24 Jun 69)
 - Incoming: CPT Paul W. Kant
- g. Chaplain
 - Outgoing: CPT Roba L. King (3 Jul 69)
 - Incoming: CPT Alfred M. Croke
- h. Commanding Officer, HMC, 145th Avn Bn (Cbt)
 - Outgoing: CPT George C. Coburn (27 Jul 69)
 - Incoming: CPT Olen L. Earnest
- i. Pathfinder Detachment Commander
 - No Change
- j. Commanding Officer, 68th Avn Co (Aslt Hel)
 - Outgoing: MAJ Donald I. Saathoff (3 Jun 69)
 - Incoming: MAJ Thomas G. Moody, Jr.
- k. Executive Officer, 68th Avn Co (Aslt Hel)
 - Outgoing: CPT Geoffrey R. Webster (3 Jun 69)
 - Incoming: CPT James D. Cowart
- l. Commanding Officer, 118th Avn Co (Aslt Hel)
 - Outgoing: MAJ John A. Britton (9 Jul 69)
 - Incoming: MAJ Barney P. Hancock

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m. Commanding Officer, 190th Avn Co (Aslt Hel)

Outgoing: MAJ Hershell B. Murray (26 Jul 69)
Incoming: MAJ Joe D. Jobe

n. Commanding Officer, 334th Avn Co (Atk Hel)

Outgoing: MAJ Robert W. Arnold (25 May 69)
Incoming: MAJ John H. Oliver

2. The following are personnel occupying major command and staff positions as of 31 July 1969.

a. LTC TOP, John J.	Battalion Commander
b. MAJ DESJARDINS, Robert H.	Battalion XO
c. CPT SAXTON, Loren T.	Adjutant
d. CPT COLLIAU, Steven L.	S-2
e. CPT TERRELL, Douglas R.	S-3
f. CPT KANT, Paul W.	S-4
g. CPT ESTES, Robert A.	Maintenance Officer
h. CPT MAYS, Audie L.	Signal Officer
i. CPT LOCATELLI, Stephen	Safety Officer
j. CPT PETTETT, Jackie	Flight Surgeon
k. CPT CROKE, Alfred M.	Chaplain
l. CPT EARNEST, Olen L.	CO, HHC
m. MAJ MOODY, Thomas G., Jr.	CO, 68th Avn Co (Aslt Hel)
n. MAJ HANCOCK, Barney P.	CO, 118th Avn Co (Aslt Hel)
o. MAJ JOBE, Joe D.	CO, 190th Avn Co (Aslt Hel)
p. MAJ OLIVER, John H.	CO, 334th Avn Co (Atk Hel)
q. VACANT	CO, 324th ASD (Attached)

D. Personnel - Unit Strength as of 31 July 1969

1. Military:

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UNIT	OFFICER		WO		EM		TOTAL	
	AUTH	O/H	AUTH	O/H	AUTH	O/H	AUTH	O/H
68th	19	19	51	43	218	210	288	272
118th	19	20	51	49	218	206	288	275
190th	19	23	51	44	218	190	288	257
334th	17	14	39	36	198	188	254	238
HHC	18	21	3	5	86	114	107	140
Sety Plt	0	0	0	0	28	36	28	36
430th	1	1	0	0	7	6	8	7
520th	1	0	0	0	7	9	8	9

2. Personnel (Enlisted) Gains and Losses for May, June and July 1969.

UNIT	MAY		JUNE		JULY	
	GAINS	LOSSES	GAINS	LOSSES	GAINS	LOSSES
68th	26	17	31	21	32	21
118th	26	12	28	31	36	30
190th	25	38	46	26	23	26
334th	24	9	25	22	26	18
HHC	1	13	0	11	4	8
Sety Plt	1	1	1	1	1	2
430th	0	0	0	0	1	0
520th	0	0	0	0	0	0

3. Civilian:

UNIT	DAC		VN		TCN		CONTRACTOR	
	AUTH	O/H	AUTH	O/H	AUTH	O/H	AUTH	O/H
68th	0	0	19	19	0	0	0	0
118th	0	0	3	3	0	0	0	0
190th	0	0	2	2	0	0	0	0
334th	0	0	16	16	0	0	0	0
HHC	0	0	17	17	0	0	0	0
TOTAL	0	0	57	57	0	0	0	0

E. Intelligence and Physical Security

1. During the period 1 May 1969 through 31 July 1969, enemy activity in the Bien Hoa area was sporadic and limited primarily to harrassing rocket/mortar attacks by fire. The high point in these attacks occurred during the end of May and the first few days in June. During the attack of 6 June, the Battalion suffered 2 WIA who were subsequently evacuated and 8 WIA who were returned to duty.

2. Improvements in physical security were constantly made during this quarter. The majority of the security projects have been completed while others are still in the process of implementation or in planning stages. The Battalion physical security plan, "Lightening Bolt 4", was revised with emphasis on detail. Each company in turn revised their Security SOP's

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and these were included in the Battalion Plan as annexes. On 18 July, all companies participated in a practice deployment of reaction forces to test the revised plan and eliminate any problem areas existing prior to its finalization. All portions of the exercise were executed and the revised OPLAN has now been adopted.

3. The defensive perimeter was improved by erection of a chain link fence in front of all bunkers. The fence is designed to afford stand off protection against possible enemy attack using RPG rounds. Technical Intelligence Brief No 1-68 (HQ, USMACV) was studied and followed as a guideline for this construction project. A large culvert area adjacent to the 145th Battalion area was determined to be a possible area of sapper penetration and was closed to entry by construction of a three man bunker. This same culvert area was also reinforced against sapper attack by employment of engineer stakes.

4. Initiation of defoliation along the perimeter was made by the 266th Supply and Service Battalion of Long Binh. More extensive defoliation is planned using organic helicopter support in coordination with the Air Force Security Squadron and the 29th Chemical Detachment. Plans have been finalized for the installation of a low intensity lighting system as soon as defoliation has been completed.

F. Operations and Training

1. Combat Operations

a. The 145th Aviation Battalion (Combat) continues to be committed daily to tasks ranging from direct combat support missions to combat assault operations. The Battalion is normally committed daily for two combat assault companies, one general support helicopter company and a variety of armed helicopter missions. The normal mission package supplied to supported units for combat assault is nine UH-1D/H lift helicopters, one maintenance helicopter, one smoke helicopter, a command and control aircraft and four armed helicopters. The normal commitment to III Corps and II Field Forces on general support missions is thirteen (13) UH-1D/H and three (3) light fire teams consisting of both UH-1B/C and AH-1G helicopters.

b. The 334th Aviation Company (Attack Helicopter), one of the few all "Cobra" units now serving in Vietnam, provides emergency stand by support for Allied elements in III Corps Tactical Zone as required by II Field Forces AAE. Fire teams from the 334th are also on call to the Battalion S-3; as such, they are called upon to augment the armed helicopter capabilities of the Assault Companies during combat assaults. The greater speed, payload, endurance and maneuverability of the "Cobra", coupled with the UH-1C "Gunships", has provided the Air Mission Commander greater flexibility and shock action in accomplishing his mission. The 334th also provides two (2) fire teams to the 151st Ranger Battalion for support of the Long Range Patrols ("LRPS") on a twenty-four (24) hour basis; additionally, they provide the 3rd Mobile Strike Force with one (1) light fire team for support of their mission in III Corps.

2. Counter Mortar

a. The Bien Hoa Airbase was subjected to enemy rocket/mortar attacks

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on twelve occasions during this reporting period. The attacks occurred as shown below.

MAY		JUNE		JULY	
date-time	# rounds	date-time	# rounds	date-time	# rounds
120122	9	060310	36	100700	4
212001	7	092121	3	200615	29
230138	11	122358	31		
282234	10	161955	4		
		180050	9		
		202148	8		

b. No major damage was inflicted on the Battalion aircraft, equipment or buildings during these rocket/mortar attacks.

3. Training

a. An extensive training program at Battalion level has provided the 145th Aviation Battalion (Combat) with much needed relief of its previously reported shortage of instructor qualified pilots. A decrease in the number of VNAF aviators assigned for training has also afforded relief. The major obstacle still confronting our instructor pilots is the lack of aircraft available for training.

b. Only after all scheduled missions have been met, may an aircraft be used for training. With the high number of mission commitments carried by this Battalion, this requires most companies to utilize 100% of their mission ready aircraft. Only through constant positive control of standardization ride schedules and maximum utilization of noncommitted aircraft has the Battalion managed to meet the requirement for aviator 90 day standardization rides.

c. The 145th Aviation Battalion (Combat) has continued to transition VNAF H-34 pilots in the UH-1D/H series aircraft. The program includes Direct Combat Support and Combat Assault missions along with traffic pattern and emergency procedures. During the past quarter, fifteen (15) UH-1D/H pilots were graduated with an average time of one hundred and seventy-five (175) flight hours. In addition, the Battalion has transitioned six (6) VNAF Staff Officers in a more accelerated program which includes, in addition to DCS and CA's, the flying of Command and Control, Lead and "Smokey" on Combat assaults. The 145th Aviation Battalion has also transitioned one (1) US Marine Corps LTC into the UH-1D/H. All transition training, including ground school, is conducted as prescribed in TC 1-34.

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G. Logistics

1. Class V

a. During this reporting period, the 145th Aviation Battalion (Combat) has been affected by the wide spread shortage of 2.75" rockets 10 lb warhead, PD fuze (H-190). Satisfactory mission accomplishment has been obtained by utilization of other type rockets: VT, HEAT, and Flechette when practical. Substitution of 40mm grenades and 7.62mm minigun for rockets in landing zone preparatory fire, and recon by fire is another method used to relieve the shortage.

b. Expecting this critical shortage of rockets to extend at least until October 1969, the Battalion is continuing to use every available method to operate within allocations. Strict control measures initiated by each of the companies in the Battalion are constantly monitored by the Battalion S-4.

2. Construction

a. During this period, a field ration mess hall was opened to support officers billeted in Honour-Smith Compound and personnel assigned to Headquarters Company. It is located within the compound and will be used in lieu of the Officer's Open Mess which closed when the Battalion Officer's Club initiated food service.

b. Prior to the opening of the mess hall, renovation of the interior was carried out by assigned personnel. Provisions were made for better sanitation and a more efficient method for the storage of dry rations. Partitions were constructed to control traffic and aid in the general comfort and attractiveness of the dining area. In addition to these improvements, requests have been forwarded for new garrison mess equipment. The new items will include: Cooking and baking ovens, a gas steam table, mixing machine, ice machine, drink dispensers and new refrigeration units.

H. Safety

1. Aviation Safety Program

a. The 145th Aviation Battalion (Combat) continues to maintain an accident rate below that of USARV rotary wing and 12th Aviation Group (Combat). It is felt that this lower rate is a direct result of a safety conscious attitude on the part of all personnel in the Battalion. Safety meetings, both scheduled and spontaneous at the company level, are a source of many suggestions on improvement of flying techniques and safety procedures. With continued emphasis on this type of program, an even lower accident rate is our aim in the future.

b. The monthly safety newsletter which includes articles on aviation safety, changes in procedures, safety slogans and a letter from the Battalion Commander, continues to be our prime method of keeping personnel informed on suggestions originating in other units. Another means of disseminating information is through the monthly meeting of the Battalion

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Safety Council. The meeting is attended by key personnel from the entire Battalion. Information discussed during these meetings is later incorporated into discussions at company safety meetings.

2. Heliport Traffic Pattern (Frizzel Field)

a. The traffic pattern at 145th Aviation Battalion (Combat) heliport was extremely limited due to the close proximity of the Bien Hoa Air Base active runways, Air Force buildings and aircraft parking ramps on three sides of the heliport. This limitation required a dangerously tight descending turn to the right when landing south. On take off to the north a sharp left turn was necessary prior to gaining safe altitude and airspeed.

b. Through coordination with the 3rd Tactical Fighter Wing, a new traffic pattern was devised. The proposed traffic pattern eliminated the sharp turns on take off and landings; however, this required the overflying of several VNAF facilities. The traffic pattern now in use has eliminated all hazards encountered and has been approved by Air Force Advisory Team Two, which received approval from both US and VNAF forces at Bien Hoa.

3. Accidents

a. There has been a decrease in the accident rate during the last 90 days. During this reporting period, 43% of this Battalion's accidents were caused by pilot error and 57% involved material failure. There have been 7 major accidents, no minor accidents, 11 incidents, 2 forced landings and 27 precautionary landings.

b. The following is a list of accidents and incidents reported during the quarter.

ACCIDENTS

Engine Failure	2
Tail Rotor Failure	1
Meshed Rotor Blades	1
Lost Tail Rotor	1
Fuel Control Failure	1
Lost RPM	1

INCIDENTS

Lost RPM	3
Landed on Stump	2
Short Shaft Failure	2

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Main Rotor Strike

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2

Engine Failure

1

Short in Wiring

1

4. The total flight time for the reporting period is 29,917 hours for an accident rate of 23.4 per 100,000 hours. The fiscal year rate is 20.2 for FY 1969.

I. Signal

1. Voice Secure

a. At present all companies in the Battalion have the capability of transmitting secure on the Command FM Net. To maintain this status, it is necessary to have at least one individual in each unit familiar with setting up, troubleshooting and maintaining the secure equipment. Personnel chosen to fill this requirement should be assigned to the communications section where they can become familiar with accountability and maintenance procedures.

b. In addition to the Battalion Command FM Net, ninety-five (95) percent of the aircraft assigned to the lift companies now have the capability to transmit secure FM, on request. A problem has arisen in retrofitting new aircraft with this capability. The agency (LSI) responsible for installing the FM secure equipment (ZYR-ZYS) lost its contract and is not accepting any more aircraft for modification. At a future date AVEL SOUTH, at Vung Tau, will be handling all ZYR-ZYS modifications, but at the present time they do not have the capability.

2. GO #771 dated 22 Nov 68 and MTOE's 01-077G and 1-111T have been implemented, giving each company its own organic avionics maintenance facility. Since there is a limited number of avionics personnel coming into Vietnam, this has increased the dispersion of trained personnel to the company level. In some companies, personnel trained in critical MOS's are non-existent. The possibility of a combined battalion avionics shop to centrally locate these personnel is presently under study.

3. Landline teletype: The present teletype line is causing problems in transmission reliability due to the amount of static interference present. This Headquarters has requested a new line be made available but apparently there are no unused circuits. There is a definite possibility of this command being without teletype communications should this condition grow any worse.

4. Radio teletype: At present there is no tactical requirement for the use of the jeep mounted radio teletype (MPC-119 and VSC-2). For a period of two (2) hours once a week, the 12th Aviation Group (Combat) Signal Office will open a high frequency voice and radio teletype net for the purpose of training. This will insure that equipment is being maintained and is operable and that operators maintain a degree of proficiency.

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J. Awards and Decorations: The following is a list of the awards submitted for individuals of this Battalion and those awards received by individuals of this Battalion: (1 May 69 through 31 Jul 69)

1.

<u>SUBMITTED</u>	<u>AWARDS</u>	<u>RECEIVED</u>
1	Distinguished Service Cross	0
0	Legion of Merit	1
5	Silver Star	1
23	Distinguished Flying Cross	19
4	Soldiers Medal	3
15	Bronze Star with "V" Device	0
62	Bronze Star	49
17	Air Medal with "V" Device	33
3169	Air Medal	1574
30	Army Commendation Medal with "V" Device	9
109	Army Commendation Medal	131
2	Purple Heart	13

2. 31 USARV Certificates of Achievement were received by individuals within this Battalion during the reporting period.

K. Rest and Recuperation: The R and R program continues to be the most important morale building tool at our disposal. With increased attention given to projected allocations desired to specific R and R points, the number of persons not receiving "first choice" has been all but eliminated. A desirable improvement in the R and R program would be increased allocations to in-country R and R centers. There are numerous personnel who do not take an out-of-country R and R, but who would welcome the short break offered by one in-country.

L. Public Information

1. During this quarter, the PIO program has been expanded to include a monthly newspaper. Contributions have been solicited from the company PIO representatives and all battalion personnel are invited to contribute. Expansion of the newspaper is planned to incorporate every day events occurring in each company. A definite morale boost is expected from personnel being able to see their "Name in Print", and reading items about their company and friends.

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2. The performance of the Battalion photo lab has been greatly improved by the acquisition of new equipment to include a drier and a new enlarger. Use of the Battalion Photographer for coverage of accident investigation has proven very successful.

3. Increased emphasis on Home Town News releases has resulted in a total output well above that of the last reporting period. A total of 188 Home Town News releases were submitted. Twenty of these were accompanied by photographs. It was noted that very little information is contained on the news release pertaining to the unit. A paragraph on unit history has been prepared and all PIO officers are being encouraged to include this in Block 27.

M. Chaplain

<u>ITEM</u>	<u>OCCASION</u>	<u>ATTENDANCE</u>	<u>AVERAGE ATTENDANCE</u>
Protestant	13	232	18
Catholic	45	1530	34
Memorial Services	6	948	158
Religious Education	24	222	9
Counselling	732	---	---
Troop Visits	871	---	---
Hospital Visits	20	87	---
Character Guidance Lectures	14	1316	94
Character Guidance Orientations	3	1065	355
In-country Orientations	3	66	22

N. Civic Action

1. The civic action program continues to be a source of pride for all members of the 145th Aviation Battalion (Combat). During this quarter, numerous trips were made to the Tan Mai and Dan Minh Orphanages. A health and dental program is in operation to provide medical assistance and attempt to improve sanitation habits through education and example.

2. The 334th Aviation Company (Attack Helicopter) is working in conjunction with an Air Force Medical Corps Team by furnishing transportation and assistance for a weekly visit to the Tan Uyen area.

3. The 118th Aviation Company (Assault Helicopter) has assumed sponsorship of the Tan Mai Orphanage. Three hundred dollars has been allocated from the Chaplain's Fund for the purpose of aiding this project. Hot water is desperately needed for sanitation of baby bottles, diapers

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and dish washing. Of major concern is the procurement of funds for this much needed hot water system.

O. Reenlistment Program: The reenlistment statistics for the Battalion from 1 May 1969 through 31 July 1969 are depicted below.

1ST TERM RA Elig/Re-enl	AUS Elig/Re-enl	CAREER Elig/Re-enl	PERCENT TOTAL
29 5	25 1	7 7	21.3%

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II. (C) SECTION 2 - Lessons Learned: Commander's Observations, Evaluations and Recommendations

A. Personnel: NONE

B. Operations:

1. Formation Flying (Flights with Reduced Visibility)

a. OBSERVATION: During a recent combat assault, it was observed that the trail formation, though easy to control, is extremely hazardous in periods of reduced visibility, i.e., rain showers. As the intensity of obscuration increases, depth perception is drastically impaired, making it difficult to maintain safe aircraft separation.

b. EVALUATION: The trail formation, though extremely effective, is hazardous when used in periods of reduced visibility.

c. RECOMMENDATION: That during periods of reduced visibility, efforts be made to avoid flying the "Trail" formation. "Vee" or Echelon formations lend themselves readily to visual contact by virtue of angle observation by the pilot out the side of the aircraft, allowing him to maintain safe and proper separation.

d. COMMAND ACTION: All units of the 145th Aviation Battalion (Combat) were advised of this hazardous condition and changes are being implemented into Battalion and Unit SOP's.

2. Practice IFR (Hood) Flight

a. OBSERVATION: While conducting tactical missions in marginal weather aircraft may encounter IFR conditions. Many aviators lack the proficiency to safely return to VFR from inadvertent IFR.

b. EVALUATION: This lack of proficiency is the result of little or no simulated IFR (Hood) flight time. It is essential to the safe conduct of missions that all rated aviators maintain a standard of proficiency in tactical IFR flight. Due to the limited number of aircraft available strictly for training, an alternate method must be found.

c. RECOMMENDATION: That all aviator personnel be made aware of the necessity to remain proficient in IFR techniques. That hoods, manufactured at unit level, be either issued to each aircraft or available for sign out by the aviators. The time returning from CA and general support missions be utilized by the pilots to practice "Hooded" flight, and a minimum of two hours hooded flight per month be required of each aviator.

d. COMMAND ACTION: Command emphasis is being placed on obtaining hoods and instructing all personnel of this requirement.

3. Preplanned Instructions for Smoke Ships

a. OBSERVATION: Radio traffic during combat assault operations is extremely heavy. At critical times this traffic makes it virtually

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impossible for the Air Mission Commander to relay instructions to the lift aircraft, gunships and smoke ship.

b. **EVALUATION:** Every means available must be used to minimize the amount of radio "chatter" during combat assaults. The safe and satisfactory performance of the mission depends on clear, concise and understood instructions from the Air Mission Commander. There are standard smoke patterns used with each type landing zone and complete instructions are not required if preplanned patterns are used.

c. **RECOMMENDATION:** That Air Mission Commanders review use of the smoke ship and the different type patterns flown and that standard patterns be planned with short concise instructions associated with them.

d. **COMMAND ACTION:** Coordination between Air Mission Commanders, smoke, lead and gunship pilots have reduced instructions to the smoke ship to a minimum. Familiarization with all standard smoke patterns is an essential part of the training now being given to prospective smoke ship pilots.

4. Combat Checks

a. **OBSERVATION:** Investigation of injuries sustained in aircraft accidents during the past year indicate that many pilots fail to make use of the many safety devices provided. Items such as inertia reel locks, helmet visors and chest protectors have saved many pilots from injury or death.

b. **EVALUATION:** Constant reminders are necessary to insure that all personnel remember to take the steps required to survive should an emergency occur. A method should be devised where all personnel can be reminded of the need for a prelanding and safety check prior to entering final to the LZ or LZ.

c. **RECOMMENDATION:** That the importance of cockpit and safety checks be emphasized. In all landings, the lead aircraft in the flight should announce "Combat Check" to remind all aviators to check their inertia reels in the locked position, armor plates forward, visors down and prelanding checks complete.

d. **COMMAND ACTION:** A letter has been sent to all units stating the procedures required prior to landing. Continual command emphasis is being directed to assure that all units are utilizing the "Combat Check".

5. Use of Reference Points (RP)

a. **OBSERVATION:** The Eagle Flight concept of the Airmobile Assault Operations in RVN gives the ground commander the speed and flexibility required to react to a rapidly changing tactical situation. Inherent in this type operation is the problem of passing vital coordination to all elements of the flight in an expeditious and accurate manner without compromising the entire mission.

b. **EVALUATION:** Base frequencies or coordinates and code words are used widely to pass coordination over unsecure radio nets. The need still

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exists for some means of common reference for relaying target or troop locations within an area of operations.

c. RECOMMENDATION: That all key personnel be provided with tactical maps of the intended AO. These maps should have prominent terrain features such as stream or road junctions marked and designated by some identifier. When the intended mission is comprised of Eagle Flight operations, the distance between reference points should be such as to afford ease of control to the Air Mission Commander and facilitate their rapid location on the map.

d. COMMAND ACTION: All key personnel are provided with a tactical map (1:50,000) of the intended AO. Numerous prominent terrain features are designated and identified on these maps. Reference points are the primary means by which all locations are transmitted in flight.

6. Survival Radios

a. OBSERVATION: On 14 June 1969, this Battalion had an aircraft crash in a hostile area. Investigation revealed that the aircraft's "guard" radio was not operational after the crash, and although an emergency radio was on board, it was not taken from the aircraft for several minutes. Had this aircraft burned, after impact, the crew would have had to escape and evade without this important item of survival gear.

b. EVALUATION: The practice of securing the emergency radio to, or stowing it in the aircraft, increases the possibility that it will be forgotten during periods of confusion when the crewmembers' foremost concern is a safe exit.

c. RECOMMENDATION: That this radio be included in the list of items to be carried on the person of at least one crewmember during all single ship missions. The existing pockets in flight suits may be utilized or a small pocket sewn to the front of the flack jacket or chest protector.

d. COMMAND ACTION: A letter has been sent to all companies in the Battalion directing the above recommendation be placed in effect.

7. Unnecessary Delay in Evacuation of Injured Personnel

a. OBSERVATION: Delay has occurred in connections made between ambulance and med-evac helicopters. In many cases, the delay of only a few seconds could cause loss of life or serious medical complications. Many facilities have several helicopter landing pads and pilots unfamiliar with the location are not able to find the pad used for med-evac because of improper markings or the absence of a marked pad.

b. EVALUATION: A designated and properly marked landing pad for med-evac would facilitate rapid transfer of injured personnel from ambulance to helicopter. This is especially true when organic aircraft are not available and a "Dust Off" mission is called or assistance is obtained from airborne aircraft.

c. RECOMMENDATION: That all facilities where several landing pads are used, designate and mark one pad for the purpose of med-evac.

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c. **COMMAND ACTION:** Coordination between Battalion S-3, S-4, Safety and the Airfield Support Detachment is in progress at this time. Designation and labeling of a med-evac pad will be accomplished at "Prissel" field in the near future.

8. Unnecessary Delay in Identifying Injured Personnel

a. **OBSERVATION:** Two (2) incidents have occurred in the past two months in which identification of deceased personnel was unnecessarily delayed. Personnel involved in these incidents were not wearing identification tags. This required a time consuming search by medical personnel for identifying articles, or contacting commanders for identification.

b. **EVALUATION:** AR 606-5 paragraph 78 requires that all personnel wear identification tags while outside the United States. The primary purpose of this regulation is to insure prompt medical identification and disposition of injured personnel.

c. **RECOMMENDATION:** That personnel again be reminded of the reasons for and importance of wearing identification tags and that periodic inspections be carried out to insure the compliance with AR 606-5 paragraph 78.

d. **COMMAND ACTION:**

(1) A letter has been sent to each company by the Battalion Flight Surgeon requesting that the above recommendation be instituted. In addition, a Battalion policy letter was sent to each unit 26 June 1959 directing that action be initiated.

(2) Spot checks are being periodically carried out in the dispensary and information on the tags checked to insure correlation with existing medical records.

C. Training:

1. Emergency Procedures and -10 Exams

a. **OBSERVATION:** It has been noted on several post accident check rides that improper emergency procedures have resulted in erroneous evaluation of malfunctions. In a recent accident, the aircraft was at an altitude of 700-800 feet when it yawed sharply to the right and assumed an unusual attitude. Thinking that he had experienced an engine failure, the aircraft commander entered autorotation. Concentration on radio calls resulted in his failure to check instruments as prescribed in approved emergency procedures. As the aircraft commander applied pitch to cushion the touchdown, the aircraft spun rapidly to the right. Control was lost and the aircraft crashed with several passengers and crewmembers suffering injuries.

b. **EVALUATION:** Had the aircraft commander followed the prescribed emergency procedures, i.e., check of RPM and percent on N-2 turbine, he would have found that his engine was still running, and that he had experienced loss of anti-torque control. Powered flight to a suitable

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landing area would have been possible and most probably a safe landing could have been made. Constant refreshing is needed to assure that all aviators are familiar with correct emergency procedures.

c. RECOMMENDATIONS:

(1) That question and answer sessions be conducted in conjunction with all briefings and debriefings. The unit safety officer and/or Instructor Pilot should be on hand to answer questions and guide the discussion.

(2) USARV Regulation 95-6 requires that a -10 test be taken with in-country, aircraft commander and Instructor check rides. It is recommended that -10 exams be given in conjunction with all check rides to include post accident and 90-day standardization rides.

d. COMMAND ACTION:

(1) Each company in the Battalion conducts a question and answer period at the daily briefing. The unit Instructor Pilot or Safety Officer is in attendance to answer questions and direct any discussion.

(2) All pilots in the 145th Aviation Battalion (Combat) are given -10 examinations as recommended above. Additionally, the requirement is being implemented into the Battalion SOP.

D. Intelligence

1. Perimeter Illumination

a. OBSERVATION: In reference to the "Totem Pole" flare contained in last quarter's ORLL, periodic inspections and test firing are required in order to ascertain its reliability. Experience has shown that exposure to the elements, especially during the wet season, affects the flares performance and hampers its ability to provide instant high intensity illumination.

b. EVALUATION: A number of checks are periodically required to detect deterioration of various components of the "Totem Pole" flare. Among the problem areas encountered are the following: Wet and unusable powder charges, unreliable blasting caps, fuze ends, and cracked or peeled wiring. Visual checks and periodic test firing readily reveal defects that might preclude successful firing of the flare device.

c. RECOMMENDATION: Certain checks should be performed periodically in order to insure the "Totem Pole" flare functions properly as a perimeter illumination device. Once each quarter, blasting caps and powder charges should be spot checked for possible contamination or moisture. During the "Monsoon" season, time intervals between checks should be increased to at least once every two (2) weeks. Additionally, it is recommended that selected flares be fired to test their operation. Wiring should be closely inspected every six months to detect possible deterioration resulting in cracked or peeled sections of wire.

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d. **COMMAND ACTION:** Checks and test firings are being conducted on a scheduled basis and the effectiveness of the illumination system is maintained by these periodic checks, when conducted as recommended above.

F. Maintenance:

1. Premature Removal of T53 Gas Turbine Engine

a. **OBSERVATION:** During the reporting period, this Battalion has experienced a number of premature removals of T53 Gas Turbine Engines. The most common cause of these removals was Foreign Object Damage (FOD).

b. **EVALUATION:** Foreign Object Damage (FOD) within the command is caused primarily by careless maintenance practices and inattention to detail by the flight crews; additionally, each time the particle separator is removed the possibility of FOD increases.

c. **RECOMMENDATIONS:**

(1) Each unit establish and enforce a comprehensive FOD prevention program.

(2) That particle separators and screen kits be installed on all aircraft and that the particle separator be cleaned at a maximum of every twenty-five (25) hours unless the operating condition of the engine and the environment (dust and/or rain) require earlier cleaning. That the cleaning be accomplished only during daylight hours.

(3) That all maintenance and aircraft crews be provided with an FOD can and be required to use it while working on the aircraft. Provisions for securing the can to the aircraft should be made to prevent it from being accidentally knocked over. The can serves two purposes. First, it provides the mechanic with an easily accessible container in which to dispose of waste material. Secondly, the can serves as a constant reminder to each mechanic that the responsibility of preventing FOD is an important part of his job.

d. **COMMAND ACTION:**

(1) All maintenance supervisors, mechanics and flight crews have been informed of the problem that can be encountered when the particle separator and screen kits are not installed, when poor maintenance procedures (i.e., leaving intake uncovered during maintenance) are employed and improper pre-flight inspections are performed.

(2) A Maintenance Bulletin was distributed to all aircraft maintenance elements and unit commanders assigned to this Battalion specifying detailed instructions for a stronger FOD prevention program. (See Inclosure h)

2. Hydraulic Failures Due to Chafed Hydraulic Lines of the UH-1 and AH-1G Helicopters

a. **OBSERVATION:** A number of hydraulic failures due to cracked or leaking hydraulic lines have been experienced by the Battalion in the

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recent past. Most of these failures occurred in a relatively short period of time. The most common cause of these failures was chafed hydraulic lines.

b. **EVALUATION:** Hydraulic failures within this command were caused primarily by the lack of a complete detailed inspection during pre-flight, post-flight and before and after scheduled maintenance.

c. **RECOMMENDATIONS:**

- (1) Each unit should review and enforce their methods of inspection.
- (2) Maintenance supervisors, mechanics and flight crews be briefed on methods of inspection.

d. **COMMAND ACTION:**

(1) All maintenance supervisors, mechanics and flight crews have been informed of the problem that can be expected when a complete and detailed inspection is not performed.

(2) A maintenance newsletter was distributed to all aircraft maintenance elements and unit commanders assigned to this Battalion specifying detailed instructions for a complete method of inspection.

3. Effectiveness of the Fluorescent Lamps, Portable, 24 VDC
(ENSURE 250)

a. **OBSERVATION:** During the reporting period this Battalion evaluated the overall effectiveness of the portable lamps and it was found to be unsatisfactory.

b. **EVALUATION:**

- (1) Lamp is too fragile.
- (2) Drain on aircraft batteries is excessive.
- (3) Lamp shorts out and emits sparks on contact with metal surface.
- (4) Exposed lamp tube subject to easy breakage.
- (5) Lamp tubes burn out at an excessive rate and the candle power is not sufficient for proper lighting.
- (6) Drop cords create a hazard to maintenance personnel.

c. **RECOMMENDATIONS:**

- (1) That the issue of lamps be discontinued.
- (2) That the previously issued SAFARI-LITE with sufficient supply of batteries be re-issued.

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d. COMMAND ACTION:

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(1) All maintenance supervisors and mechanics have been informed of the hazards and problems that can arise when using the portable lamps. They have also been advised not to use the lamps unless a moisture proof plexiglass cover has been installed.

(2) A letter has been forwarded to 12th Aviation Group (Combat), ATTN: AVBACA-SDM, indicating the above problems and recommendations.

F. Organization: NONE

G. Survival, Escape and Evasion: NONE

6 Incl

1. Organizational Chart

2. Aircraft Status Chart

3. Operational Statistics Chart

4. Maintenance Bulletin Number 3

~~5. Battalion Safety Newsletter~~

6. Battalion Supply and Maintenance Bulletin

Incl 5 wd HQ, DA

9-1 9-1
JOHN J TOP
LTC FA
Commanding

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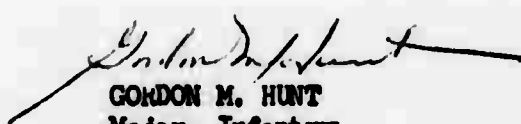
AVBACA-SC (10 Aug 69) 1st Ind
SUBJECT: Operational Report of 145th Aviation Battalion (Combat) for
Period Ending 31 July 1969 (MCS CSFOR-65) (MI) (U) (UIC: WCYNAA)

DA, HEADQUARTERS, 12TH AVIATION GROUP (COMBAT), APO 96266 24 August 1969

TO: Commanding General, II Field Force Vietnam, APO 96266

In accordance with USARV Reg 525-15, the Operational Report - Lessons
Learned of the 145th Aviation Battalion, for the period ending 31 July 1969,
is forwarded.

FOR THE COMMANDER:


GORDON M. HUNT
Major, Infantry
Adjutant

6 SEP 1969

AVFBC-RE-H (10 Aug 69) 2d Ind

SUBJECT: Operational Report of 145th Aviation Battalion (Combat) for
Period Ending 31 July 1969 (RCS CSFOR-65) (RI) (U) (UIC: WCYNAA)

DA, HQ II FFORCEV, APO San Francisco 96266

THRU: Commanding General, 1st Aviation Brigade, ATTN: AVBA-C, APO 96307

Commanding General, US Army Vietnam, ATTN: AVHGC(DST), APO 96375

Commander-In-Chief, US Army Pacific, ATTN: GPOP-DT, APO 96558

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

This headquarters has reviewed and concurs with the Operational Report -
Lessons Learned of the 145th Aviation Battalion (Combat) for the period
ending 31 July 1969 with the following comments:

a. Signal office, II FFORCEV, has not received a circuit request for
retermination or rerouting teletype circuit from 145th CAB to 12th CAG.

b. Signal Officer, 12th CAG has been advised of the proper method of
initiating circuit request (II FFV SSI ITEM 82-2). Upon receipt of the
request, action will be initiated to reroute circuit.

FOR THE COMMANDER:


B. G. MACDONALD
ILT, AGC
Asst AG

AVRAGC-0 (10 Aug 69) 3d Ind

SUBJECT: Operational Report of 145th Aviation Battalion (Combat) for
Period Ending 31 July 1969 (RCS CSFOR-65) (RI) (U) (UIC: WYCNA)

DA, HEADQUARTERS, 1ST AVIATION BRIGADE, APO 96384

12 SEP 1969

THRU: Commanding General, United States Army Vietnam, ATTN: AVHGC-DST,
APO 96375
Commander-in-Chief, United States Army Pacific, ATTN: GPOP-OT,
APO 96553

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

1. This headquarters has reviewed subject report and concurs with the
contents as indorsed.

2. The following additional comment is considered pertinent:

Paragraph 2f(3), page 20, recommends the adoption of the SAFARI-LITE
instead of the PORTA-LAMP for aircraft night maintenance use. USARV G-4
advises that the SAFARI-LITE has been approved for issue, but the federal
stock number for the basic light and all components have not been received.
This information will be furnished units as it becomes available.

FOR THE COMMANDER:



ARTHUR W. LITTLE
CPT AGC
Asst AG.

CF
CO, 145th Avn Bn (Cbt)

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AVHGC-DST (10 Aug 69) 4th Ind

SUBJECT: Operational Report of 145th Aviation Battalion (Combat) for Period
Ending 31 July 1969, RCS CSFOR-65 (R1) (U) (UIC: WGTNAA)

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375 ; 7 OCT 1969

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

1. (U) This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 July 1969 from Headquarters, 145th Aviation Battalion (Combat).

2. (C) Comments follow:

a. (C) Reference item concerning "Practice IFR (Hood) Flight", section II, page 14, paragraph B2; concur. This training must be conducted by single ships; not while flying in a formation.

b. (C) Reference item concerning "Use of Reference Points (RP)", section II, page 15, paragraph B5; nonconcur. A determination has been rendered by the supporting radio research unit that the coordination system described is a "Point of Origin" system. The "Point of Origin" is an unauthorized code and its use is prohibited by paragraphs 5-1 and 15-3, AR 380-40 and paragraph 17b, USARV Reg 380-13. Corrective action has been initiated by this headquarters. No action by USARPAC or DA is recommended.

c. (C) Reference item concerning "Unnecessary Delay in Evacuation of Injured Personnel", section II, page 16, paragraph B7; concur. The pad should be marked with a red cross outlined in white. In-country orientations should include frequencies and locations of hospitals in the area, dustoff procedures and first aid instructions for air crews.

d. (C) Reference item concerning "Emergency Procedures and -10 Exams", section II, page 17, paragraph C1; concur. AR 95-4 and USARV Supplement 1 to AR 95-4 govern USARV flight standardization and training to include proficiency checks and anti-torque failure procedures. This item will be disseminated in the USARV Weekly Safety Bulletin.

e. (U) Reference item concerning "Effectiveness of the Fluorescent Lamps, Portable, 24 VDC (ENSURE 250)", section II, page 20, paragraph E3; concur.

(1) Evaluation data on ENSURE 250 has been forwarded to DA by USARV message 64000, DTG 270314Z May 69, subj: Fluorescent Lamp, Portable, 24 V D.C. (ENSURE 250). This message requested modification of the lamp to correct deficiencies and validation of an additional requirement for 150 modified lamps for evaluation.

25
DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

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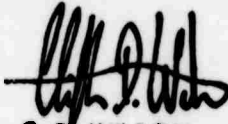
AVHGC-DST (10 Aug 69) 4th Ind

SUBJECT: Operational Report of 145th Aviation Battalion (Combat) for Period
Ending 31 July 1969, RCS CSFOR-65. (R1) (U) (UIC: WCTNAA)

(2) Reference subparagraph c(1). The lamps will not be procured for issue except to evaluate modified versions. Only units desiring to participate in such evaluation will be issued the lamps.

(3) Reference subparagraph c(2). At the present time, no additional Safari-Lites are available. USARV will query AMC concerning the possible future procurement of the Safari-Lite.

FOR THE COMMANDER:



C. D. WILSON

1LT, AGC

Assistant Adjutant General

Cy furn:
145th Avn Bn
1st Avn Bde

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GPOP-DT (10 Aug 69) 5th Ind

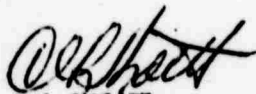
SUBJECT: Operational Report of HQ, 145th Aviation Battalion (Combat) for
Period Ending 31 July 1969, RCS CSFOR-65 (R1)

HQ, US Army, Pacific, APO San Francisco 96558 18 OCT 69

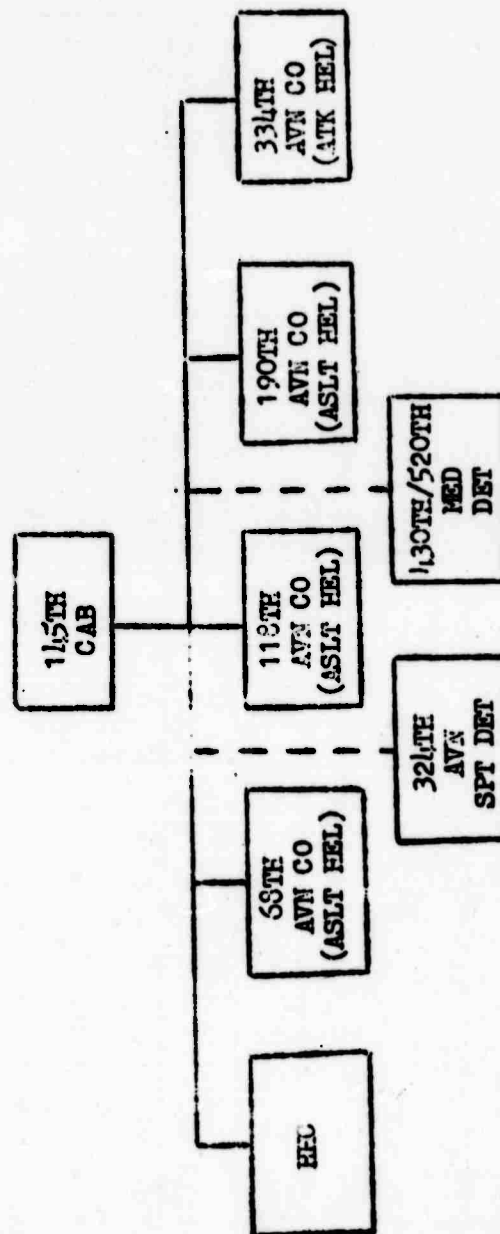
TO: Assistant Chief of Staff for Force Development, Department of the
Army, Washington, D. C. 20310

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:


C. L. SHORTT
CPT, AGC
Asst AG

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----- Attached

All units located at Bien Hoa Air Base, Vietnam

Inclosure 1

145th Aviation Battalion (Combat)
Organization

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HEADQUARTERS, 145TH AVIATION BATTALION (COMBAT)
31 July 1969
Aircraft Status

SUBORDINATE UNIT	DH-1B AUTH O/H	UH-1C AUTH O/H	UH-1D AUTH O/H	UH-1F AUTH O/H	AE-1G AUTH O/H	CE-5 AUTH O/H
HHC, 145th CAB	0 0	0 0	0 1	0 1	0 0	3 0
68th Avn Co (Aslt Hel)	0 0	8 5	0 11	23 8	0 0	0 0
118th Avn Co (Aslt Hel)	0 0	8 6	0 11	23 9	0 0	0 0
190th Avn Co (Aslt Hel)	0 6	8 3	0 8	23 12	0 0	0 0
334th Avn Co (Atk Hel)	0 0	0 0	0 1	3 1	21 21	0 0

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145TH AVIATION BATTALION (COMBAT)
Operational Statistics
1 May 1965 - 31 July 1969

SUBORDINATE	HOURS FLOWN	SORTIES FLOWN	PAK CARRIED	LARGO (TONS) CARRIED	ENEMY KBA	STRUCTURES DAM DES	SAMPAIS DAM DES	AIRCRAFT DAM DES
68th Avn Co (Aslt)	7533	25445	49289	88	54	15 23	18 14	13 3
118th Avn Co (Aslt)	3357	19552	49030	211	17	2 2	0 0	5 2
190th Avn Co (Aslt)	116	27059	48207	112	80	0 17	0 0	9 4
334th Avn Co (Atk)	5311	8387	842	0	57	15 45	23 159	8 1
Battalion Totals	29917	80443	147532	411	208	37 83	41 173	36 10

Inclosure 3

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 145TH COMBAT AVIATION BATTALION
APO San Francisco 96227

"FIRST IN VIETNAM"

MAINTENANCE BULLETIN
NUMBER 3

23 April 1969

**T53 ENGINE MAINTENANCE
(FOD)**

1. REFERENCES:

- a. AR 750-23, 17 May 1967.
- b. Letter, this headquarters, dated 14 January 1969, subject: T53 Engine Maintenance.
- c. TB 55-2000-200-30/1, dated 20 January 1969.

2. APPLICABILITY: The provisions of the Maintenance Bulletin are directive in nature and will be complied with by all aircraft maintenance elements and aircraft flight crews assigned or attached to this battalion.

3. PROBLEM: Premature removal of T53 Gas Turbine Engines is a constant drain of materiel resources which are in critical supply. The most common cause of these premature removals is Foreign Object Damage (FOD).

4. BACKGROUND: During the first quarter of calendar year 1969, this battalion removed 11 engines from aircraft due to FOD. These engines had ingested objects such as: Wrench sockets, rags, paper towels, grease pencils, DZUS fasteners, safety wire and bolts. A conservative estimate of the cost of this damage is \$220,000.00. Furthermore, to replace these engines, it took approximately 275 direct man hours. FOD is the most serious problem associated with the operation of gas turbine engines. The FOD rate of any unit is directly proportional to the conscientiousness of its maintenance personnel, flight crews, and a strongly enforced FOD prevention program.

5. CONCLUSION:

- a. That FOD within this command is caused primarily by careless maintenance practices and inattention to detail by flight crews.
- b. That the FOD rate can be reduced far below that which it presently is.
- c. That FOD control is an essential part of a sound maintenance operation.
- d. That FOD can be created by the removal of the screen kit and particle separator for cleaning.

6. DECISION:

- a. Each unit will establish and enforce a comprehensive FOD prevention program.

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Inclosure 1

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b. That particle separator and screen kits (M/O 45-1520-210-30/17 W/change 1 and M/O 45-1520-211-30/35 W/change 5) will be installed on all aircraft.

c. That the particle separator be cleaned at a maximum of every 12.5 hours, except for the AH-1G which will be cleaned every 25 hours.* However, cleaning will be accomplished more often if the operating condition of the engine and environment (dust and/or rain) requires it. Cleaning of the particle separator will only be accomplished during daylight hours.

d. That UE-1 barrier filters be removed and cleaned daily. Prior to reinstalling the filters, the pilot will insure (UH-1 & AH-1G) that the particle separator and screen kit are properly installed (gap between screen kit will not exceed mesh width), check for loose DZUS fasteners, screws and other foreign objects around engine intake, deck, cowling induction baffles, and transmission. The pilot will inspect barrier filters to insure that they are clean, in good condition, and reinstalled properly.

e. As a minimum, unit FOD prevention programs will include:

(1) Education of all maintenance and flight crews on the operation of the turbine engines and the consequences of disturbed air flow and internal damage.

(2) A constant monitoring by all supervisory personnel during periods of maintenance, particularly during PMI and PMP, to insure that the exposed inlet housing is blocked to preclude entry of Foreign Objects.

(3) The posting of visible reminders (posters) of the FOD prevention program at conspicuous places throughout the maintenance area.

(4) An intensive program to insure that hardware items (DZUS fasteners, screws, nuts and bolts) in the engine inlet area are properly maintained.

(5) Placing FOD containers throughout the maintenance area and the flight line

(6) Inventory of mechanics tools after completion of maintenance tasks around or above the engine deck. This will include the police of cut safety wire, cotter pins, and other items of hardware.

(7) Supervisors will constantly monitor maintenance personnel during engine cleaning and reinstallation of the particle separator to prevent FOD.

s/George A. Willmore
T/GEORGE A. WILLMORE
MAJ, TC
Bn Maint Officer

"TRUE COPY":

LOREN T SAXTON
CPT, LI
Adjutant

* Since the time of publication, the time interval for all aircraft has been changed to twenty-five (25) hours.

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MAINTENANCE AND SUPPLY BULLETIN 145th CBT AVN BN AIRCRAFT MAINTENANCE INDEX

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Battalion Maint Tech: CW2 Glade C. Fisher
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WHY BE A PRO?

Why be a pro? Because professionalism pays pretty big dividends.

First, you are constantly learning your job. A pro never "knows it all." As your skills and knowledge increase, so does your productivity. This means a better job and a safer one. Mission accomplishment benefits too, since safety is a natural outgrowth of professionalism. Second, a pro won't accept a short cut. He knows the right way is the only way. Since a true professional takes more than a passing interest in his work he gets another return for his efforts - job satisfaction. This satisfaction is reflected in the recognition of his supervisors, from the "pat on the back" to the promotion. Think how nice it would look in your personnel file if your supervisor wrote, "This individual is a professional." That is the kind of thing the promotion board takes into consideration.

What's in it for you, being a pro? Quite a lot, actually. Why not give it a try? You may be glad you did. We "know" we will be.

Battalion Maintenance Officer

CONGRATULATIONS!

The 190th Assault Helicopter Company took top honors in the Battalion competition for the month of July in Aircraft Maintenance, Automotive Maintenance, and Best Unit Supply. While the Best Food Service award and Best Operations went to the 334th Aviation Company (Attack Helicopter).

YOU - EIR'S - THE WORLD'S BEST

An Equipment Improvement Recommendation (EIR) on a DA Form 2407 is one of the most significant long-range contributions which can be made to the maintenance effort by an individual. It may be submitted by anyone. We might ask, does it do any good? Let me quote from a recent message, "USAAVSCOM, AMSAV-FU, DTG 072130Z, Feb 69". "Based on continued EIR reports of premature removal... EIR'S indicate that failures occur between the 300 hour to 600 hour range". The result of these EIR'S was an inspection time interval change from 600 hours to 300 hours for this particular item. EIR'S are the pipeline of information on equipment around the world that the National Maintenance Point uses to determine what action is necessary to correct equipment failures, design deficiencies, maintenance procedures and to improve equipment in developmental or pre-production stages. We, who work at all levels of maintenance know the many maintenance man-hours required to keep our equipment in optimum operating condition. Make a real effort to contribute to the maintenance program by reducing some of these man-hours and improving our equipment through the submission of EIR'S. There is no adequate substitute for personnel interest and there is no more positive display of interest than the completion of an assigned or unassigned task. You are the link that connects the EIR to the chain of events. The time to submit the EIR is immediately after there has been a failure or a noted deficiency. The real benefits are in the lives, man-hours and money saved. This responsibility is mine and your's. How much have you contributed to help make our equipment the world's BEST?

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Listed below is the number of TERS submitted by each unit within this Battalion for the last three months along with the total for 1969:

<u>UNIT</u>	<u>MAY</u>	<u>JUNE</u>	<u>JULY</u>	<u>TOTAL FOR 1969</u>
68th	15	1	4	60
118th	4	0	5	18
190th	3	5	17	44
334th	8	30	43	177

TERS and ECC

The six digit line number (except for commercial vehicles) has been replaced, effective 1 Jul 69, with a two character equipment category code (ECC), that is to be used as a prefix to the SF 700-20 Line Item Number (LIN). Both the ECC and LIN will be placed in the serial number block of ALL TERS forms, records and reports. Get a copy of DA Cir 750-29, effective 1 Jul 69, or the condensation of it, which went out as Ltr: Hq. USARV, AVHGD-MD, Subj: Elimination of TERS Line Numbers, with "E" distribution. Believe it or not, you don't have to remake any forms. Just line out the old TERS line number, and enter the ECC + LIN (example: ~~XXXXXXX~~) in the same block.

CLEANING TURBINE ENGINES

Several T53 engines suffered overtemperatures during the past several months due to improper procedures used in compressor cleaning. It was noted that a mixture of water and solvent was sprayed into the engine while operating at flight idle. Needless to say someone found out that solvent burns. So, prior to any engine run-up for the purpose of spraying water into the inlet, the water container should be clean and checked to make sure that it contains only clean pure water.

TEFLON HOSE

During the aircraft maintenance inspection for the month of July it was found that teflon lined hoses were not being properly handled. Teflon lined hoses, in hot fluid systems, will tend to preform themselves to the installed position. Some lines are preformed by the manufacturer. For this reason, care should be exercised in handling and removing these hoses from an installation and in storing. Bending or excessive handling will tend to crimp them. Once the hose is crimped the imperfection will stay. It cannot be bent back to its original shape. Fluid will be restricted through a crimped or bent hose. A crimp in a teflon hose will not be apparent, since the metal braid is unaffected by the bend. Too, it is difficult to determine accurately the degree of damage.

The ends of a disconnected hose should not be tucked up out of the way to keep it from dripping. Too sharp a bend may possibly kink the hose. Take the time to install a plug in the open end of the hose.

One final thought to keep in mind when handling teflon lined hoses. Over ninety-five percent of the failed teflon lines investigated showed the direct cause of failure to be mishandling. Teflon lined hoses should be stored in a manner similar to the way they will be installed. Bending the hoses so that they will fit in a drawer is not the proper method. Also open lines should be plugged or capped.

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AVAILABILITY

AIRCRAFT

Here is a comparison of your availability and hours flown for July 1969.

	<u>68th</u>		<u>118th</u>		<u>190th</u>		<u>334th</u>		<u>12thGp</u>	<u>USARV</u>
	<u>AVAIL</u>	<u>HRS</u>	<u>AVAIL</u>	<u>HRS</u>	<u>AVAIL</u>	<u>HRS</u>	<u>AVAIL</u>	<u>HRS</u>	<u>AVAIL</u>	<u>AVAIL</u>
UH-1B	—	—	—	—	95%	100	—	—	74.5%	74.8%
UH-1C	82%	435	70%	401	82%	289	—	—	76.9%	73.8%
UH-1D	78%	1335	70%	1331	76%	946	100%	89	85.9%	80.7%
UH-1H	80%	841	79%	1057	81%	1245	100%	176	80.3%	78.5%
AH-1G	—	—	—	—	—	—	88%	1595	80.3%	74.6%

Published below is the status of Aircraft PLL as of 31 July 1969

<u>UNIT</u>	<u>TOTAL LINES</u>	<u>TOTAL LINES</u>	<u>TOTAL LINES</u>	<u>TOTAL LINES</u>
	<u>ACFT PLL</u>	<u>ZERO BALANCE</u>	<u>ARMT PLL</u>	<u>ZERO BALANCE</u>
68th AHC	1347	247	165	28
118th AHC	1471	144	209	75
190th AHC	1087	79	169	22
334th AWC	1690	138	426	73

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EDP REQUISITIONING

1. Prompt reporting of aircraft tail number changes for EDP requisitions is required. The following procedures will apply:
 - a. Units will notify the DSU of all tail number changes applicable to EDP requisitions, listing the document number and the Federal Stock Number of the applicable request.
 - b. The DSU will immediately forward this information to the Priority Division, AMMC, by DF identifying the change to the applicable request by document number and FSN.
2. Commanders must reemphasize current directives for EDP requisitioning and insure that only those items which constitute a valid aircraft grounding condition are processed. Requisitions received at AMMC for items other than legitimate conditions will be rejected.

EDP and TARP

1. Units should be reporting all valid tail numbers of their organic aircraft on a weekly basis to their supporting technical supply activity to expedite the processing of EDP requisitions.
2. The command emphasis being placed on the control of repairables requires that all items encoded R, T, or U on the TARP list are on listing of automatic returns to the States be returned to the technical supply activity within seven days. More stringent controls are being placed on TARP repairables and automatic return items (USARV Reg 710-1 and 750-28).

TAIL ROTOR 90 DEGREE GEAR BOX (UH-1)

Analysis of reports indicate three probable causes for the loose or improper attachment of the 90 degree gear box to the tailboom.

1. Sealant extends outside of jack screw holes on input quill sleeve flange and protrudes above flange surface to cause improper seating of sleeve flange and mating surface of casting (204-030-828) in the tailboom fin. To correct this situation, trim off excess sealant protruding above the surface. Also, remove any sealant remaining on casting (204-030-828) after the removal of the 90 degree gear box. Any cleaned area that exposes bare metal must be protected with zinc chromate primer.
2. Worn out self locking nuts have been used to attach the 90 degree gear box to tailboom fin. Since this is considered a critical application the nuts should be used only once.
3. To install tail rotor gear box, position it on studs and rotate it counter clockwise until studs contact sides of the holes. Install an aluminum washer next to the flange and a steel washer next to the nut (MS2104214), FSN 5310-807-1475 and torque evenly to 100-140 inch pounds.

42 DEGREE GEARBOX (UH-1)

The loosening of attaching bolts is cracking the attaching flanges on the 42 degree gear box. Make sure a steel washer (AN960-416L), FSN 5310-167-0835 is installed between the bolt head and the aluminum washer (NAS1197-416L).

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Torque bolts (AN4H12A), FSN 5306-182-1940 evenly (50-70 inch pounds) and safety with lock wire. Inspect daily for security. Flanges have also been reported with elongated attachment holes. This also occurs from attaching bolts loosening and the same corrective action is applicable.

ENGINE CHANGES AND FOD

During the month of July, units of this Battalion changed eleven engines. The highest engine time new or overhauled was 1217 hours and the lowest time was 203 hours. Two of the engines changed were for FOD. Again this month, one engine was changed for TBO.

AUTOMOTIVE MAINTENANCE

Be Your Own Inspector On Your M151A1 1/2-ton Truck

1. HOOD - Safety catch bent, not aligned, broken, missing, hold-down catches stuck, broken, missing; National symbol wrong size, missing; markings wrong, missing; Safety stencil (underside) wrong, missing.
2. COWL VENT - Jammed, screen clogged; broken, rusty, stuck.
3. TURN SIGNAL LIGHTS - Base loose, lens cracked; wires loose, frayed, exposed.
4. FENDERS - Rusted, bent, seams cracked; side channels cut, crushed.
5. BUMPERS - Army or unit markings missing, wrong; (see T8746-93-1 Ch 2 Jul 66) U-Channel bent, cracked, loose.
6. WINDSHIELD - Cracked enough to obstruct driver's vision, crazed, discolored; weatherstripping cracked, torn, missing; tie-down catch or stowage strap in unit, missing; glass broken, hood bumpers missing.
7. HEADLIGHTS, BLACKOUT MARKERS - painted over, dirty, broken; marker twisted out of line; blackout support bracket or shield loose, broken; lenses waterlogged, clouded.
8. WINDSHIELD WIPERS - Blades broken, missing; rubber cracked, cut, hardened.
9. LIFTING SHACKLES - Stuck, bent, loose, missing; safety pin or chain missing.
10. FIRE EXTINGUISHER - (if behind seat) discharged, not tagged or sealed (check local SOP) bracket loose, broken.
11. MIRROR - Broken, too clouded for good vision, missing; bracket not adjustable.
12. TIRES & WHEELS - Lug nuts loose, missing; studs bent, stripped; hole edges cut, cracked; air-drop eyes or jam nuts loose, missing; rims dented, bent; tire bead not snug on rim; valve caps missing; pressure wrong. Tires mismatched, cut or worn to fabric, unevenly worn.
13. SIDE PANELS - Bent, rusty, seams cracked; strain eyes crushed, missing; bow rod hold downs bent, broken; reflectors (if present) broken; warning decals (25 GPM fuel accept and overfill warnings) missing, unreadable.
14. AXES - Missing, rusted, handle broken; bracket bent; straps or buckles unserviceable, missing.
15. SHOVEL - Missing, rusty, dirty; handle broken; bracket bent; straps or buckles unserviceable, missing.
16. CANVAS, WINDOWS - Torn, dirty, retaining straps frayed, buckles missing; seams open; windows fogged enough to hamper vision.

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17. TRANSMISSION COUPLING RECEPTACLE - Damaged, corroded; screws, cover or cover spring loose, missing; gasket missing.
18. REFLECTOR - Painted over, broken, missing; not on spare wheel assy.
19. FUEL CAN - Rusted, leaking, can missing; chain broken, or missing; gasket missing or cut; webbing or O-ring unserviceable.
20. PUMP - Not lubricated, rusted, spring broken, won't work.
21. SPARE WHEEL & TIRE - Loose on mount, flat, valve cap missing, sidewalls cut, tread worn off, wheel bent out of shape.
22. BUSHINGS - Bent, rusty, broken; bolts loose, missing; unit markings wrong or missing.
23. TOOL BOX - Unauthorized tools or parts; tools broken, missing; box dirty, wet; cover bent, rusty, crushed, missing.
24. BATTERY BOX - Cover bent, clips loose or broken; box dirty, corroded.
25. BATTERIES - Cracked, leaking, dirty; clamps or parts loose, corroded, mangled; electrolyte level low; filler caps loose, broken, missing, vents clogged; holdowns too tight, loose, corroded.
26. SEATS - Covers torn, dirty; frames bent; retaining pins or chains missing; safety strap (passenger side) cut, frayed; retaining eye loose; broken, catch broken.
27. GAGES, INDICATORS - Glass broken, painted over, clouded; unreadable; pointer missing.
28. DATA PLATES - Painted over, loose, missing.
29. FLOOR - Rusted, drains clogged.
30. SAFETY CATCH - Won't hold hood up securely, cracked, not aligned right, rusty.
31. HORN - Loose, corroded, won't work, connections loose.
32. FUEL LINES - Crushed, leaking, chafing.
33. OIL FILTERS - Loose, leaking.
34. SAFETY STENCIL - Painted over, missing.
35. FAN BELT - Too tight, loose, frayed, grooved, cracked.
36. HEADLIGHTS - Connectors loose, corroded, cracked; wire exposed.
37. OIL FILTER CAP - Gasket loose, missing; chain broken, missing.
38. RADIATOR - Cap missing, chain missing, broken; rubber insulator cracked, hard; tanks or tubes leaking at seams or joints; hoses old, cut, spongy; clamps loose; fins crushed or clogged by bugs or dirt; loose on mount; vent (overflow) line crushed, missing.
39. AIR CLEANSER - Oil level low, grit on bottom of bowl; intake screen missing, joints leaking.
40. UNDERFRAME - Bottom plates or cross members gashed, welds pulled loose; plate ends broken to admit mud under seat.
41. DRIVE SHAFTS, U JOINTS - Rattling unlubed; spline ends toward wheels.
42. REAR DIFFERENTIAL - Flange-guard washers or screws missing; breather plugged, missing; suspension bolts loose, battered.
43. STEERING - Pitman or idler arms or shafts loose; nuts or cotter pins missing, bushing worn, grease fittings broken.
44. ENGINE OIL PAN - Drain plug loose, leaking; pan gasket leaking; bolts loose, missing.
45. COIL SPRINGS - Broken, lopsided, tips broken, insulator missing.
46. SHOCK ABSORBERS - Bent, crushed, loose, dented, broken.

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ROADSIDE SPOT INSPECTIONS

The OMI Roadside Inspection Team has released a secret that will help you pass the spot inspections. If the DA Form 2408-14, Uncorrected Fault Record, is with the vehicle, you get credit for faults covered on the 2408-14, which is worth an average 12 point upward adjustment in the Spot Inspection report. When the 2408-14 is with the vehicle, Spot Inspection results improve and show the realistic condition of your maintenance management. However, even with good paperwork, you must have the vehicle "standing tall" maintenance-wise or you still won't pass.

PREVENTIVE MAINTENANCE SERVICES

Did you catch the change in PM services for wheel vehicles? New wheel vehicle manuals require an "S" service at six months or 6,000 miles, whichever comes first. No more wheel vehicle "Q" services required.

S-4 SECTION

1. Price change for Rifle, M16.

This Headquarters has received information that the price for the M-16 rifle has been changed from \$124.00 to \$164.00. All future reports of Survey will reflect this change in price.

2. Economic Order Quantities (EOQ):

"How are you fixed for nuts and bolts?" Need any nuts, bolts, cotter pins, safety wire, etc.? Why not take advantage of para 13-131, AR 711-16 and para 4d(1), USARV Reg 711-2, and order a year's supply? The above regulations permit the requisitioning of EOQ on most low cost items. Here's how it works. If an item has a unit cost less than \$10.00 and your yearly demands do not exceed \$100.00 per item, the item qualifies for EOQ stockage. You can order up to a years supply of authenticated usage on one requisition. To illustrate: Suppose you use an average of 10, 25¢ nuts a month. This means you use \$30.00 worth of that a year. This item meets the EOQ criteria, and you can come in with a single requisition for 120 (10 x 12), a years supply. AMMC will fill your requisition no questions asked. Caution: Make sure of the unit issue.

3. Issue Restrictions for KITS and PACKETS:

USARV Message 58187, dated 230956Z April stated that effective immediately, all requisitions for kits and packets listed below will be cancelled by the 32nd Medical Depot:

FSN

6545-611-0978

6545-782-2821

6545-782-2822

6545-782-6412

NCUN

Survival Kit, individual

Survival Kit, individual, hot weather environment

Medical packet, individual survival kit, reserved, hot weather environment

Survival kit, individual, tropical, tactical, Air crew

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6545-965-2394

First aid kit, Aviators

If you have a need for these items, submit your requirements on USARV Form 12, IFF USARV Reg 40-30.

4. M60 & M60D Feeder Adapter:

A replacement is now available for all you guys using an old "C" ration can on your M-60 series machine gun to improve ammo feeding.

If you wish to requisition this item, you can get it by ordering through WMC. Unit of issue is one (1) per M-60 machine gun. Ask for FSN 1005-100-6597, feeder adapter.

5. Cartridge, 40 MM, HE, 1384 (1310-M572):

a. There are two types of the M16 Link used in the assembly of Linked Cartridge, 40 MM: a one piece single weld and a two piece double weld.

b. Only ammunition lots assembled with the M16 Link (two-piece double weld) are suitable for use in the XM28 system. Lots assembled with the M16 (one piece single weld) will not function satisfactory in this subsystem.

c. Ammunition lots manufactured prior to November 1967 may be assembled with either the single or double piece weld. Lots manufactured during and subsequent to November 1967 are assembled with only the two piece double weld M16 Link.

d. Units should insure that ammunition used in the XM28 subsystem are linked with the two piece double weld M16 Link.

6. Captured Enemy Ammunition:

a. USARV Reg 700-7, para 17, provides guidance to units for disposition of enemy ammunition. Unit commanders are reminded that these munitions and US munitions that have been in the hands of the enemy are automatically suspended from use and must not be stored with US ammunition.

b. The Ammunition Officer must make an immediate determination as to whether or not the item has any special characteristics which may be of interest to technical intelligence personnel. In such cases, technical intelligence personnel will be notified.

c. All captured ammunition and explosives must be inspected and declared safe for handling by EOD teams prior to evacuation. Hazardous items will be segregated immediately and destroyed by EOD personnel or by qualified unit ammunition personnel where authorized. Items will be evacuated to the nearest ammunition depot or ASP after having been determined by EOD personnel to be safe for handling.

7. Storage and Safety:

a. Ammunition should not be thrown, tumbled, or dumped from vehicles. The use of slides or materials handling equipment will add greatly in reducing incidents and damage. Boxes and palletized ammunition should be unpacked using proper tools. The use of an axe to chop strapping material is dangerous and is prohibited. Reference TM 9-1300-206.

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b. Ammunition at firing sites must be protected as much as possible from moisture and humidity and should be retained in closed fiber containers and boxes until just prior to firing. Rounds remaining on hand which had been prepared for a specific mission should be repackaged upon completion of a fire mission. Rounds should not be fired when they are obviously wet or when there is any accumulation of water in storage containers. Firing under these conditions will result in short rounds.

c. Guidance for determining the safety distances and other procedures required in the storage of basic ammunition was distributed to all units by letter USARV, AVHGO-AM, subject: Ammunition Safety Quantity Distance Standards at Tactical Base Camps, 24 July 1968.

d. All units are encouraged to request assistance concerning ammunition problems by contacting the nearest ammunition support organization. Additional assistance can be obtained from the Ammunition Division (AVHGO-AM), ACoFS, G-4, Headquarters, USARV, telephone 5647 or 4454, LBN.

3. Ammunition Malfunctions:

a. Specific instructions for reporting ammunition malfunctions are contained in USARV Reg 75-1 dated 11 Mar 68, w/C-1. This regulation lists the reportable percentage rates for excessive duds or misfires. Organization ammunition officers will obtain and report all necessary data specified in appendix I and II of Reg 75-1. Immediate reporting of such malfunctions is emphasized.

b. Malfunctions involving Improved Conventional Munitions will be reported in the same manner as other conventional ammunition items.

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