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

IN REPLY REFER TO
AGAM-P (M) (15 May 68) FOR OT RD 682011

24 May 1968

SUBJECT: Special Operational Report - Lessons Learned on the AH-1G
Employment, Hqs, 307th Combat Aviation Battalion, dated 3
April 1968 (U)

AD390275

SEE DISTRIBUTION

1. Subject report is forwarded for review and evaluation in accordance with paragraph 5b, AR 525-15. Evaluations and corrective actions should be reported to ACSFOR OT RD, 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:

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 307TH COMBAT AVIATION (PHANTOM) BATTALION
APO San Francisco 96296

AVEN-PC

3 April 1968

SUBJECT: Special Operational Report-Lessons Learned on the AH-1G
Employment (U)

Commanding Officer
164th Combat Aviation Group
APO 96215, U.S. Forces

1.(c)The AH-1G (Cobra) has been highly successful in the conduct of combat operations here in the Delta. This aircraft has been able to assume all of the missions presently assigned to the older UH-1B/C model gunships. The speed and the increased ordnance load coupled with the versatility and accuracy of the armament systems has made this aircraft exceed the capabilities of our older gunships plus give us the ability to provide wider tactical capabilities.

2.(c)The aviators flying the AH-1G are unanimous in their praise and approval of the aircraft and feel the support they are able to render the ground force commander exceeds that previously rendered with the UH-1B/C helicopters.

3.(u)The enclosed lessons learned are submitted to attest to the successful employment of the AH-1G here in the Delta.

FOR THE COMMANDER:

Floyd Eberhard

FLOYD EBERHARD
LTC, Artillery
Executive Officer

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FOR OTRD
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SPECIAL OPERATIONAL REPORT LESSONS LEARNED ON THE AH-1G EMPLOYMENT (b)

1.(c)Item: Rapid Reaction

Discussion: The AH-1G has performed in the rapid reaction role in many circumstances much better than the older model gunships. Its ability to be launched quickly and its speed enable it to move to a target area much faster than previous models. The ground commander has immediately available the ability to assess the threat and the combat power to influence the outcome of an enemy engagement. The AH-1G can become airborne from strip alert in an average time of 2 minutes and survey the enemy situation, evaluate the courses of action available and forward them to the ground commander. The AH-1G is able to locate the enemy by visual reconnaissance and with the fire power on board extricate itself from the area. The enemy most often can not be seen from altitude either at day or night. The ability to get to the area fast then slow down and view situation from a lower altitude from which meaningful results can be obtained has been significant in operations conducted so far. A recent typical example of this occurred during the TET offensive in RVN. Airfields came under attack at night. The AH-1G fire teams were scrambled and immediately brought their fire power to bear upon enemy positions still engaging the airfield and silenced them. The crews were then able to follow through with the attack by a reconnaissance of the battle area to determine what the enemy was doing. Noting that the enemy was still in position, even though he had ceased firing, the AH-1G crews were able to continue the attack to maximize the destruction. Utilizing the AH-1G the crew can reconnoiter the area at low level, find the fleeing enemy and either destroy or fix the enemy for a follow up by a ground reaction element.

The enemy will attempt to locate his positions just beyond the artillery fans to avoid that fire power. Therefore a need exists to be able to engage the enemy in these positions. The fire power of the AH-1G and other gunships has been decisive in all of the instances in the Delta. The immediate response and ready fire power is necessary to the ground commander so that he may minimize destruction to his forces while increasing the damage to the enemy.

Observation: The AH-1G has performed in the rapid reaction role much better than the older UH-1 gunships in that it has the ability to get to the scene faster while still retaining the ability to slow down and observe after the engagement is broken also remaining on station a longer time because of increased fuel and ordnance loads. It is apparent the enemy has been forced to develop an attack procedure in which he fires a minimum number of rounds and disengages prior to the helicopter gunships firing on him. Therefore we must continue to use the gunships to restrict and shorten his firing time while also using the reconnaissance ability of the helicopter to locate him.

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2.(c)Item: Escort Missions

Discussion: The AH-1G has escorted UH-1, CH-47 and CH-54 helicopters in their missions. These aircraft have not had to slow up as previously was the case with slower moving gunships in the escort role. The AH-1G has greater flexibility in that it may utilize its greater speed to dash forward, reconnoiter the route, LZ or PZ and return to the air column and continue providing escort. This ability to range forward and determine the security of a route while continuing to provide security to the air column enables the mission commander to vary the route based upon last minute intelligence obtained by the escorting helicopter or from other sources and utilize the speed of the AH-1G to check alternate routes for security.

Observation: The route for the air column may be varied with a greater degree of flexibility during the actual enroute phase with the use of the speed of the AH-1G.

3.(c)Item: Reconnaissance Methods

Discussion:

a. Fire team at altitude (1000' to 1500'): This method of conducting reconnaissance and surveillance missions is used primarily when area has suspected heavy concentrations of small arms anti-aircraft fire. This technique does not allow for a detailed search but does give the area a cursory look-see. Little can be seen and movement is very seldom seen. Camouflaged positions are very difficult to observe. However large areas can be covered for general information. Point fire can be delivered very accurately and dispersion patterns are reduced in an attack from altitude. However high altitude reconnaissance and attack are not adequate for close support of troops. The gunship pilot must be on the treetops to see the targets and the friendly positions.

b. Fire team at low altitude (10' to 100'): This method gives the most detailed information of an area. By using the speed of the AH-1G to reduce the time spent over a position and to recross and check the area from different directions reduces the vulnerability and makes the technique acceptable because of the highly desirable results obtained. Speed in excess of 125 knots is less desirable while viewing. The ability to slow down to 80 knots and observe then move forward faster is more desirable. This technique of being able to vary the airspeed and flight path are all elements which must be employed to avoid taking hits. Though the dispersion pattern of the weapons will be slightly greater at lower altitudes this is sometimes desirable for area targets or reconnaissance by fire. More effective damage from HE warheads will occur because less of the explosive force will be transmitted into the ground from a shallower angle of impact than from a near vertical angle.

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c. Fire team altitude split: This technique of employing one gunship at low altitude and the other at a higher altitude to provide covering fire enables the fire team to gain the desirable characteristics from the high and low altitude employment. Navigation is maintained by the aircraft at altitude for both aircraft also very positive communication can be obtained from the fire team with one aircraft at altitude. The lower aircraft can observe at the slower speed and use its dash speed to disengage while his covering aircraft engages the enemy. The aircraft at altitude should be using his airspeed and maneuverability to present a less vulnerable target.

Observation: The AH-1G has improved our reconnaissance ability and the desirable characteristics of the helicopter coupled with speed and stability for engaging targets does not limit any method of employment. Reconnaissance and target attack can be made simultaneously.

4.(c) Item: Night Interdiction

Discussion: The AH-1G has effectively assumed a role exceeding expectations for night interdiction of the enemy. The utilization of the AH-1G was restricted initially from flight at night without a visible horizon until the procurement of a more reliable artificial horizon could be obtained. The AH-1G is able to either engage targets with artificial illumination or with moon and starlight by reduction in airspeed and operating at lower altitudes. Because of the increased stability of the aircraft, more accurate target attacks can be made closer to population centers and lines of communication through populated areas when movement is restricted by curfew. The concept of employing the AH-1G and the Mohawk has been refined to a point whereby the mission can be routinely employed. The Mohawk is slowed down and spots a target electronically and radios following flare Mohawk of the coordinate readout. The AH-1G's operating behind the flare Mohawk can attack the target immediately upon the flare dropping. This reaction time can only be accomplished with the compatible speed of the Cobra. Again the AH-1G can slow down and remain within the flare drop area, observe the enemy and pinpoint his exact location with the ability to operate as a helicopter.

Observation: The AH-1G has enhanced the night interdiction effort by providing for the development of a new concept with its faster top speed while not sacrificing any of the desirable features of night visual surveillance utilizing its slower speed.

5.(c) Item: Mission Flexibility

Discussion: The ground commander must utilize every means he has to influence the battle. If a single tool or means allows him to accomplish many different chores which will influence the final outcome of a battle, then he, the ground commander, needs to retain positive control

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over the asset. The AH-1G Gunship has proven that it has many varied abilities and its influence can change the defensive posture of a force to an offensive posture primarily because the commander has positive control and can apply the maximum amount of force at the correct time.

The versatility of the AH-1G can best be described citing the following example. The AH-1G's were used by the mission commander to recon an LZ, select the site based on sound tactical doctrine, to escort the troop carrying aircraft to the LZ and direct them into the LZ, tantamount to a GCA, and then to escort the troop carriers away from the LZ to a release point, to execute a cover, screening and reconnaissance effort for the ground commander in conjunction with his troop deployment, to provide fire support for the troop commander, to escort Med Evac helicopters, to escort resupply helicopters both CH-47 and UH-1 type, to direct an Air Force FAC on a target so that he could mark it for an air strike. All of these items are done habitually by the same AH-1G helicopters during one 2½ hour mission with the same crew on board.

Observation: The ground troop commander must retain positive control of those assets which are intimately familiar with the tactics and situation for use in a timely manner to adequately influence the outcome of an enemy engagement.

6.(c)Item: Enemy Observation

Discussion: During a recent enemy attack the enemy shelled an airfield at night then retreated to previously dug in positions. There were observation aircraft, troop carrying helicopters and gunships airborne.

The enemy was silenced and gunships returned for rearming and refueling; approximately 30 minutes elapsed. The observation aircraft available could not observe the enemy retreating because even though the aircraft could get down to an altitude to observe, it had no organic fire power with which to disengage or suppress while viewing the area and thus had to remain at altitude. Immediately after the gunships returned, low level observation of the area was resumed and the enemy was again fixed in his positions. This was accomplished because the aircraft could slow down and observe the area and actually see objects and movement whereas the aircraft operating from higher altitude could not see any movement at all.

Observation: The ability to find and fix the enemy is directly proportional to the amount seen and closer observation is only possible by getting closer to the terrain and slowing down to a point where objects are distinguishable.

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7.(k)Item: Relative Vulnerability

Discussion: The AH-1G (Cobra), utilizing the tactical principles developed with the older model gunships, have sustained relatively less hits per hour flown. This comparison is even more valid because the AH-1G has the capability to expend more ammunition per hour flown and is in fact engaging targets for a larger percentage of the time flown. The speed of the AH-1G has reduced the time the aircraft must remain within the range of enemy weapons; also the low silhouette and the maneuverability of the helicopter have aided in the reduction of hits.

Observation:

COMPARABILITY HIT DATA - 164th CBT AVN GROUP

Type Acft	Nr of Hits	Acft O/H	Hours Flown	Avg Acft Flt Time	Hit to Hour Ratio
AH-1G	57	24	2987	124	1 : 52
UH-1B/C	123	32	4122	135	1 : 33

8.(c)Item: Weapons Flexibility.

Discussion: Targets are frequently sighted by gunships to the flanks which cannot be engaged by fixed or forward firing guns of limited flexibility without making another pass so as to line up the aircraft with the target. This increases vulnerability and reduces target engagement time on time-sensitive targets. Engagement by door gunners using B/C model gunships has partially alleviated this problem. However, the low rate of fire of the M-60 machine gun coupled with relatively low skill levels of most door gunners has made this marginally effective. The wide flexibility of the TAT-102A turret has permitted the effective engagement of targets to the flanks. Frequently when a target is sighted on the flank, the pilot breaks toward and around the target so that continuous fire can be maintained on the target.

Observation: The ability to place high volume, accurate fire on targets to the flanks has proven to be one of the most valuable features of the AH-1G.

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9.(C)Item: Crew Visibility

Discussion: The excellent visibility by both crew members from the AH-1G cockpit has provided a much improved target acquisition and reconnaissance capability over B/C model gunships whereby four crew members searched over a restricted field of view. The experience level of the AH-1G crew (both qualified aviators) provides for high productivity and efficient visual reconnaissance. The number of false warnings and inaccurate sighting reports have been considerably reduced. This has been reflected in increased confidence in the reliability of gunship reports by ground commanders when the AH-1G gunships are used.

Observation: The excellent cockpit visibility from the AH-1G provides the most effective and most flexible visual reconnaissance vehicle in the Army inventory. The tandem seating arrangement has proven sound. Overall effectiveness could be even better improved by stabilized, optical viewers with both a day and night capability.

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AVGN-A (3 Apr 68) 1st Ind

SUBJECT: Special Operational Report Lessons Learned on the AH-1G
Employment (U)

HEADQUARTERS, 164TH COMBAT AVIATION GROUP, APO 96215, 4 Apr 68

TO: Commanding General, 1st Aviation Brigade, APO 96384

1 (C) The attached Operational Report Lessons Learned has been prepared after approximately two months of intensive combat operations using the AH-1G gunship together with B/C models. It has been prepared at this time because certain clear operational advantages of the AH-1G over the B/C models have appeared and should be considered during further AH-1G deployments and subsequent developments in the area of Army fire support weapons.

2 (C) Perhaps the most significant findings have been -

a. The great effectiveness of the TAT-102A turret with its capability of accurate, high-volume fire to the flanks.

b. The effectiveness of the high-visibility, tandem-seating cockpit which has actually increased the target acquisition and reconnaissance capability even with a reduction of crew members by one half.

c. The tactical advantages of an expanded airspeed-maneuver envelope in providing both decreased vulnerability and increased effectiveness.

d. The significantly higher kill rate provided by the more effective weapons (TAT-102A turret) and the increased stability of the AH-1G. A greater capability against hard, point targets at ranges in excess of 2000 meters is still required.

e. The significant advantage of an increased useful load with greater fuel/ordnance trade-offs providing greater mission flexibility and effectiveness.

f. The need for continued development of stabilized, optical viewing/sighting devices with a night capability.

FOR THE COMMANDER:



RICHARD P. KEATING
LTC, Artillery
Adjutant

7

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AVBA (3 April 68) 2d Ind

SUBJECT: Special Operational Report Lessons Learned on the AH-1G
Employment (U)

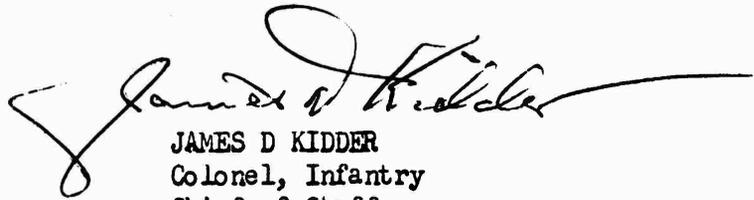
HEADQUARTERS, 1ST AVIATION BRIGADE, APO 96384

APR 8 1968

TO: Commanding General, United States Army Vietnam, ATTN: AVHAV,
APO 96375

This special ORLL is submitted to provide timely information of
interest concerning the experience this command has had with the
AH-1G Cobra.

FOR THE COMMANDER:



JAMES D KIDDER
Colonel, Infantry
Chief of Staff

13

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43

AVHAV-OPT (3 Apr 68) 3d Ind
SUBJECT: Special Operational Report Lessons Learned on the AH-1G
Employment (U)

HEADQUARTERS, UNITED STATES ARMY VIETNAM, APO SF 96375 22 APR 1968

THRU: Commander-in-Chief, United States Army, Pacific, APO SF 96558

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

1. (U) Attached ORLL, 307th Combat Aviation Battalion, is forwarded for your information.
2. (U) Reference para 3a. Attack from altitude referred to in this paragraph means that when a target is engaged from higher altitudes, a steeper angle of descent is possible, thereby reducing the dispersion pattern of the ordnance.
3. (C) Reference para 4, night interdiction. Successful accomplishment of this type of a mission is possible and profitable in the delta region where the terrain is flat with no obstructions. The effectiveness of such an operation in the highlands is questionable due to hazards caused by the mountainous terrain. Target detection and illumination by OV-1 aircraft must be conducted at altitudes which will assure terrain clearance. Subsequent identification and engagement of targets by the AH-1G aircraft may become difficult, or extremely dangerous even with flares.
4. (C) Reference para 5, mission flexibility. Some of the various types of missions performed by the armed helicopter is pointed out in this paragraph. It is recognized that the Cobra can perform better than the UH-1B/C, however, it is not intended to negate the effectiveness of the UH-1 gunships, which are continuing to perform satisfactorily within their capability. Added firepower enhances the effectiveness of the aircraft but does not reduce the number of aircraft required to undertake the varied missions. The requirement for 1 for 1 replacement of the AH-1G for the UH-1B/C is still valid.
5. (U) Reference para 8, weapons flexibility. The effectiveness of the door gunner must not be minimized. With proper training and experience, the value of the door gunners and their roles as the aircraft crewmembers/weapons system have proven to be more than marginally effective. This fact is recognized by their employment on UH-1D/H aircraft in combat assaults and other missions.
6. (C) One drawback of the AH-1G which was not mentioned here is the continuing problem of locating hostile fire directed against the aircraft. Several attempts have been made to develop a device which would indicate to the aviator that he is being fired at. So far, none have been successful. Limited War Laboratory and ACTIV both are engaged in developing a system of satisfactorily detecting the source of small arms fire directed against the AH-1G.

7
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AVHAV-OPT (3 Apr 68) 3d Ind
SUBJECT: Special Operational Report Lessons Learned on the AH-1G
Employment (U)

7. (C) There is no question as to the improved capability of the Cobra over the UH-1B/C. This result was to be expected. However, it would be dangerous to assume that because of this, fewer Cobras will be needed in the future to do the job required. The diversity and the volume of missions demanded of the gunship will not decrease, but instead is expected to increase. Under sustained operations, maintenance requirements remain the same and as the aircraft accumulates more flying time, maintenance support required will grow proportionately.

8. (C) Enemy actions against installations require the stationing of gunships at each installation to react to such actions rapidly and effectively. The role of the gunship then, will not change in principle but the use of the improved weapons system will enable a more destructive firepower to be directed against the enemy.

9. (C) Tactics described here should not be construed as being applicable to all regions in RVN. Terrain, weather, units supported, habitual association and type aircraft all are important factors in the determination and development of armed helicopter tactics.

FOR THE COMMANDER:

C. S. Nakatsukasa
C. S. NAKATSUKASA
Captain, AGC
Assistant Adjutant General

10

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15

GPOP-DT (3 Apr 68) (U) 4th Ind
SUBJECT: Special Operational Report - Lessons Learned on the AH-1G
Employment (U)

HQ, US Army, Pacific, APO San Francisco 96558 10 MAY 1968

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

This headquarters has evaluated subject report and forwarding indorse-
ments and concurs in the report as indorsed.

FOR THE COMMANDER IN CHIEF:

Old Short
... SHORT
CPT, AGC
Asst AG

11

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16

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