DEPARTMENT OF THE ARMY
HEADQUARTERS, 1ST AVIATION BRIGADE
APO San Francisco 96307

"NGUY-HIEM"

AVBA-C

12 May 1967

SUBJECT: Tactical Lessons Learned Nr. 4

TO: SEE DISTRIBUTION

The items listed below have been extracted from brigade units' quarterly reports of lessons learned for the period 1 November 1966 - 31 January 1967, and are published as tactical lessons learned Nr. 4.

1. Item: Mines and booby traps on landing zones

Discussion: Units of the 1st Aviation Brigade continue to encounter mines and booby traps in the LZ. The devices used have varied; some were pressure mines and others were command detonated. The explosives are usually attached to trees or buried in small mounds or rice paddy dikes. The enemy normally fires the command detonated mine on touchdown of the aircraft in order to wound not only crew members but also the passengers. Fortunately, our combat loss rate to this tactic has been very low. In the future, when operating in areas where very few landing zones are available, special attention must be directed to the preparation of the landing zone. In addition, we must be most careful in the selection of the exact touchdown point; advising the ground commander of the enemy's probable employment of anti helicopter-devices.

Observation: More intensive preparation of landing zones to include the use of special munitions such as "daisy Cutters" will help eliminate booby traps and mines. In areas where booby traps may be encountered, always advise ground commander to land away from dikes and back from tree lines.

2. Item: Night Training

Discussion: The demand for the units of the 1st Aviation Brigade to conduct night combat assaults continues. To accomplish these successfully, a high state of individual and unit proficiency in night operations is essential. Extensive night training is conducted to develop proficiency in illuminated and non-illuminated approaches to and touchdowns in the

landing zone. Pathfinders are habitually used for terminal guidance in non-illuminated training exercises and actual assaults.

Observation: A night training program must provide for extensive formation flying on approach to and touchdown in the landing zone. This is considered the most critical time of any night combat assault and aviators must be disciplined through continuous training to conduct this phase successfully.

3. Item: Night sling loads with CH-47 aircraft

Discussion: Transporting sling loads at night with CH-47 aircraft when there is no visual horizon, may create hazardous conditions. Neither can load oscillations be readily detected nor can timely corrective control response be applied to counter load oscillations, a condition which could cause the pilot to loose control of the aircraft or be forced to release the load, to preclude losing control.

Observation: Operating with sling loads at night requires a high state of individual pilot training. When no visible horizon exists, the risk of losing the helicopter or the sling load must be carefully weighed against the tactical necessity for the mission.

4. Item: Standardization - Training

Discussion: Unless corrected quickly and positively, newly trained aviators soon develop techniques and habits that are either unsafe or fail to follow accepted flying procedures. With the influx of relatively large numbers of newly trained aviators during the last few months, the standardization program has occupied a prominent place of importance in the training program.

Observation: A system for carefully monitoring and correcting newly trained aviators is essential to the development of good habits and sound flying techniques. An aggressive and positive standardization program will enhance safety and overall individual and unit performance.

5. Item: Planning of airmobile operations conducted by Free World Military Forces.

Discussion: The inherent problems caused by the different languages coupled with limited knowledge of airmobile operations make it imperative that aviation personnel be brought into the planning stage at the time the operation is first conceived or discussed.

Observation: Liaison personnel and command channels must be alert and aware of this requirement for all operational planning which may involve aviation resources.

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6. Item: Dust Suppression.

Discussion: Dust becomes more of a problem area as the dry season progresses. Dust conditions in field locations have usually not caused any difficulty due to the presence of some vegetation and the short duration of operation in the areas. Dust conditions in aircraft parking and staging areas have become a real problem and must be considered each time an operation is planned. To counter the dust, aircraft may be required to depart in individual flights with extra spacing between each aircraft. The use of peniprime in these areas has greatly reduced the dust hazard; however many staging and resupply areas have not been covered with peniprime.

Observation: Extra time must be allowed for helicopter operations in dusty areas when planning for a lift. Peniprime greatly reduces dust and should be applied whenever possible to all helicopter parking, staging and resupply areas.

7. Item: Reduced time life of flight control bearings.

Discussion: Dust and sand collecting on bearing surfaces have caused most of the premature failure of bearings.

Observation: Bearing life can be increased by purging and lubricating on a daily basis. Spraying the main rotor hub and tail rotor hub with water each day washed away dirt and sand that would otherwise collect on bearing surfaces. After washing with water, the area is wiped clean and the bearing purged.

8. Item: Cleaning of UH-1D Inlet Filters.

Discussion: Due to the extremely dusty environmental conditions in the Central Highlands area during the dry season, a common engine problem has been a loss of power due to clogged air inlet filters. As the normal flight mission requirements precluded the return of aircraft to home station during the day, accumulated dust could not be effectively removed without providing adequate filter cleaning facilities in the forward operational areas. To overcome this problem, a cleaning tank was fabricated by cutting a 55 gallon drum in half lengthwise and adding a sheet metal cover and base stand. The tank was placed at the forward area heliport with 5 gallon cans of clear water and detergent soap furnished daily. During brief lulls in the operational missions or at specified shut down periods, crewchiefs utilized this facility to great advantage.

Observation: The providing of a simple cleaning tank in the forward operational area has reduced helicopter engine problems caused by clogged air filters.

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9. Item: Binding in Flight Controls of Troop Transports.

Discussion: Excessive write-ups of binding controls developed during the monsoon season in the delta. It was determined that the cause was lack of lubrication of the entire push-pull system. With frequent landings in rice paddies, in water up to the level of the cabin floor, lubrication was washed away, causing corrosion and binding.

Observation: Aircraft commanders should, whenever feasible, hold aircraft out of the water or at a skid-deep hover. If it is necessary to land in water, a remark should be entered on the 2408-13 alert maintenance personnel. Measures can then be taken to purge and grease the controls.

10. Item: Loss of RPM in the UH-1 Helicopter During Landing and Take-Off.

Discussion: Several accidents have occurred when UH-1 helicopters lost RPM during take-offs or landings. These accidents were generally a result of rapid application of collective pitch to stop a descent or an attempt to quickly clear a barrier during take-off.

Observation: To preclude the rapid application of pitch to stop a descent and rushing a take-off, sling load type approaches and take-offs should be used. Experience confirms the fact that use of the trail formation increases the risk of lost rotor RPM particularly during take-off and to a lesser degree during landing. This hazard arises from the trailing aircraft being directly exposed to the disturbance created by the rotor wash of the forward aircraft. Further, the trail formation should be used only in case of tactical necessity and may require a compensating trade-off of payload capacity on each aircraft.

11. Item: Radio antennas.

Discussion: During recent operations, vehicles with long antennas have driven under the rotating blades of helicopters, and persons with long antennas on back packed radios have walked, unknowingly, into rotor blades.

Observation: All crew members must be on the lookout for these vehicles and persons as they approach the aircraft, and take immediate action to stop them before it is too late. The aircraft commander should plan his touchdown in an area where a ground vehicle is not likely to operate. If a collision with an antenna is inevitable, the collective pitch should be lowered fully and little or no damage will result. RPM should always be maintained as an immediate departure may avert a strike. Ground commanders should be reminded to advise their personnel of the hazards of driving near helicopters, and of walking under the rotor blades with antenna erected on back packed radios.

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12. Item: Dropping of leaflets from O-1 type aircraft.

Discussion: When fixed-wing aircraft are conducting psy-war missions in Vietnam, the accurate placement of leaflets is some times difficult because of high winds.

Observation: A six inch stack of leaflets bound with a thin rubber band should be dropped over the desired target area. The bound leaflets will come apart and fall in a relatively small area downwind from the target. The "miss distance" is observed and the bulk of the leaflets should then be dropped an equal distance up wind from the target.

13. Item: Enemy Use of Friendly Telephones

Discussion: Prior to and during a recent mortar attack on an Army airfield, an unidentified person made telephone calls to the control tower and defensive bunkers. The enemy used the existing communication system to create confusion as well as to gain information on the defensive posture of the US Force. A telephone line check showed evidence of line tapping inside the perimeter. Calls were made to the tower warning of an impending attack and to a bunker requesting information. Remember, the telephone still remains an insecure means of communication.

Observation: Continue emphasizing telephone and radio security. Utilize operational codes to avoid talking around a classified subject. Establish positive identification of the person on the other end.

14. Item: Helicopter Medical Evacuation in Jungle Areas

Discussion: Dense jungle canopies and undergrowth impede rapid evacuation from such areas. In addition, valuable time is lost in transporting wounded personnel over difficult and often times, enemy infested terrain.

Observation: To expedite the evacuation from such dense jungle areas, the med-evac personnel should be prepared to rappel into the area and clear a suitable site. These personnel should be equipped with long handle axes, hand saws and demolitions with which they can cut and clear an adequate area to safely accomodate a hovering helicopter. Power saws are also recommended - however - they must be checked out daily to insure an operational status when you need them.

15. Item: VC Camouflage Techniques

Discussion: During a recent operation, while flying the command and control aircraft, the pilot detected movement along a river bed.

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A low reconnaissance revealed green foliage and logs floating on the water. Although this flotsam is a common observation in the delta, the direction of movement drew attention, since it was floating directly across the river as opposed to moving with the current. Suspecting concealed Viet Cong, the target was taken under fire. Instantly the hidden VC tried to escape, however, almost the entire squad was killed.

Observation: During all missions, always keep alert to any unusual movements or changes in the operational area. The VC make mistakes too.

16. Item: Reporting of aircraft mishaps has improved throughout the period however, further improvements must be accomplished.

Discussion: Reporting of mishaps of a major nature appears to be adequate. Items that appear insignificant at company level are not being reported 100% of the time. Events that seem unimportant at company level could prove very beneficial at higher echelons in determining trends in operational and maintenance practices or material failures.

Observation: Company, Battalion, and Group Safety Officers should continue stressing the importance of analyzing all mishaps and reporting all cause factors most expeditiously.

17. Item: Night aerial reconnaissance for detection and attack of the enemy.

Discussion:

a. Movements of the enemy at night can be rendered difficult and effectively reduced by aerial reconnaissance at night. Equipment used is one UH-1D equipped with "firefly", one or two crew served Night Vision Devices and approximately 10 flares, with two gunships following. The mission commander should ride in the lead ship and be able to communicate with his flight and the appropriate (sector) control. It is not advisable for him to fly the ship as he should be in a position in the ship to monitor all operations. "Firefly" can be used to search a small area or narrow route such as a streambed, road, trail or abandoned village. However, the light is a "give - away" and allows the enemy to take possible measures to avoid visual detection. Therefore the "firefly" should be used sporadically. The larger size night vision (Starlight) devices are effective to detect enemy movement without any tel -tale beam of light. Coordination must be made with ground units to determine their planned night location.

b. The mission commander, in the lead ship, monitors the reconnaissance by "Starlight" device. If a positive target is identified and

to be fired upon, a location is given to the gunships - this may be by coordinates or marking by tracers. However, care should be exercised so as to give the minimum time to take cover. If coordinates or verbal target area description can be given the lead ship can pull up and drop flares for the gunships.

c. Best altitude and ground speed appoars to be 500 feet absolute altitude and 60 knots for both "Firefly" and "Starlight". Gunships follow at 1000 to 1500 feet absolute with flare drop altitude from 2500 - 3500 feet. Satisfactory results with flares can be obtained with drops from as low as 1000 feet.

d. None of the lighting systems appear to have a total superiority. However, when used in conjunction with and supplementing one another, they provide an effective system to detect enemy movement at night.

e. Training of crews is necessary but should require only one or two nights to perfect the coordination required between aircraft. The mission commander must be throughly familiar with the situation and the area of operations to include likely avenues of enemy approach and assembly areas. Areas to be searched should follow a plan developed at the lowest knowledgeable headquarters. A system should be developed for rapid approval or disapproval for the attack of targets.

f. Such flights should also bo responsive to hamlets under fire or threat.

Observation: Night aerial reconnaissance can do much to restrict and inhibit the enemy. Further, it can increase the morale of the local population when used to defer an attack on a nearby hamlet. Thorough pre-planning, coordination and training are prerequisites to a successful operation.

FOR THE COMMANDER:

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A
Plus Special