II

197TH ARMED HELICOPTER COMPANY

Paxton

Loughmiller

16 PLAYBOYS
11 - 12
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26 RAIDERS

TACTICS MANUAL

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FORWARD

The Utility Tactical Transport Helicopter Company, later redesignated the 68th, and now the 197th Armed Helicopter Company, arrived in the Republic of Vietnam on 7 October, 1962. At that time no armed helicopter tactics were in existence. Neither the machine nor the pilot had been tested in combat. It was necessary for this pioneer unit to institute a trial and error method of testing theories and ideas and as the unit became more proficient a set of tactics and techniques began to emerge.

As in any military unit the arrival of new personnel required a program of constant training. The newly assigned aviator was taught all that had been learned by his predecessor and as he became proficient in his new job, he began to test and add his own ideas. The Viet Cong are becoming better trained and equipped all the time, causing a constant revision of armed helicopter tactics and techniques. The commanders, team leaders, and aviators of today and tomorrow must strive to stay ahead of the Viet Cong. This publication is designed to put today's knowledge in writing and make it possible, through constant revision to maintain a current reference on armed helicopter operation. It is hoped that all interested units and personnel having access to this publication will make these changes as they come about.

The 197th Armed Helicopter Company has a proud history of being first - first with the armed A model, the armed B model, the armed 540 model, and Lightning Bug. No job too difficult, no sacrifice too great, now and always - "We Lead The Way." The only thing we do not do well is "quit."

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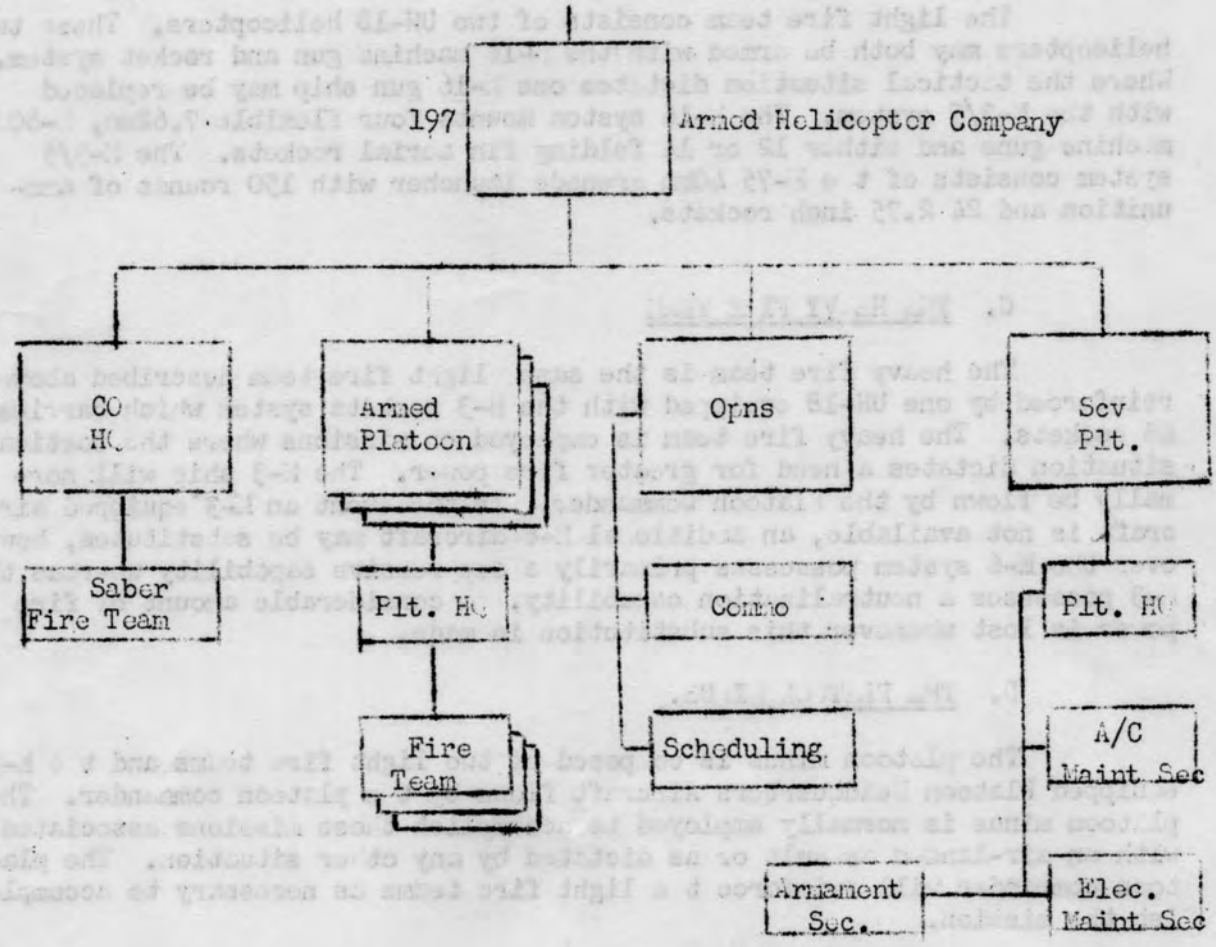
CHAPTER I

ORGANIZATION



A. THE SABER FIRE TEAM.

The Saber fire team is composed of two armed helicopters crewed by the Company Commander (AC), Company Staudardization Pilot (P), Training Officer/Armament Officer (AC), Operations/Assistant Operations Officer (P). This is the Command and Control fire team and the primary function of this fire team is recon and mark of landing zones for Battalion-sized operations, control of landing zone prestrikes and flight route reconnaissance.

B. THE LIG T FIRE TEAM.

The light fire team consists of two UH-1B Helicopters. These two helicopters may both be armed with the M-16 machine gun and rocket system. Where the tactical situation dictates one M-16 gun ship may be replaced with the M-3/5 system. The M-16 system mounts four flexible 7.62mm, M-600 machine guns and either 12 or 14 folding fin aerial rockets. The M-3/5 system consists of the M-75 40mm grenade launcher with 150 rounds of ammunition and 24 2.75 inch rockets.

C. THE HEAVY FIRE TEAM

The heavy fire team is the same light fire team described above reinforced by one UH-1B equipped with the M-3 rockets system which carries 48 rockets. The heavy fire team is employed on missions where the tactical situation dictates a need for greater fire power. The M-3 ship will normally be flown by the Platoon Commander. In the event an M-3 equipped aircraft is not available, an additional M-6 aircraft may be substituted, however the M-6 system possesses primarily a suppressive capability whereas the M-3 possesses a neutralization capability. A considerable amount of fire power is lost whenever this substitution is made.

D. THE PLATOON MINUS.

The platoon minus is composed of two light fire teams and the M-3 equipped Platoon Headquarters Aircraft flown by the platoon commander. The platoon minus is normally employed to accomplish those missions associated with an air-landed assault or as dictated by any other situation. The platoon commander will reinforce the light fire teams as necessary to accomplish the mission.

E. THE ARMED PLATOON.

The platoon is composed of three light fire teams and an M-3 ship flown by the platoon commander. The mission of the full strength platoon is the same as the platoon minus but the additional fire team provides greater depth and flexibility of employment.

If necessary the platoon can be tailored to provide two fire teams with three ships in each fire team and the platoon commander supporting with the M-3 ship as required. This type of tailoring is sometimes used in escorting a large formation of unarmed helicopters into a landing zone. After the initial escort, the platoon commander can restore tactical integrity to the third fire team to provide for overhead cover for the ground operation.

II. ARMED HELICOPTER MISSIONS

A. This list of missions is composed of the basic type tasks most often accomplished by the armed helicopter. Because of the inherent versatility of the helicopter, these tasks cannot be considered all inclusive. Even with the relatively high gross weight associated with the armed ship, it is still possible to perform med-evac, command liaison, extractions, and even emergency resupply along with many other missions.

B. The basic missions are:

1. Armed reconnaissance
2. Support of airmobile assaults
3. Overhead cover for ground operations
4. Escort of unarmed aircraft
5. Convoy escort
6. Target acquisition and adjustment of air force strike aircraft and artillery
7. The emergency reaction force
8. Night operations

C. A detailed explanation of each of these missions can be found in chapter VI.

III. CARDINAL RULES.

The following list is composed of those basic guide lines that are called the cardinal rules of armed helicopter tactics. These are proven and valid. Remember them!

A. Do not overfly the target.

Experience has shown that the majority of aircraft hits and casualties occur when the aircraft flies directly over an enemy position. Once a target is identified a firing pass should be initiated at a distance of 2500 meters or less from the target, and broken off no closer than 500 meters. Your weapons on the aircraft are just as effective at 500 meters as they are at 200 meters and the probability of our aircraft being hit increases the closer your get to the target.

B. Do not fly in the"deadman zone" without a reason.

The "deadman" zone is generally that airspace from the ground to 1,000 feet above the ground with the space from 0 to 500 feet being the most hazardous. When it is possible to accomplish the mission and stay at 1,000 feet or higher this should be done. In many cases the mission cannot be done adequately from this altitude. When the mission dictates flight in the "deadman" zone, the element leader should make careful plans to minimize the time spent in this zone. It is also better to be at tree top level if you must go below 500 feet. Accomplishment of the mission is the most important factor and will dictate the altitude to be flown.

C. Never fly the 180° wing position.

Never fly directly behind the lead helicopter (180° wing position). Flying directly behind the leader will result in both ships having the same ground track. By flying in an extended left or right echelon each ship has a separate ground track and will not over fly the same area. When two ships fly over the same areas with the same ground track, the first ship alerts the hostile forces on the ground to the presence of aircraft and increases the ground fire hazard. Also, in reconnaissance missions, more area can be covered in the same amount of time.

D. Always make a high reconnaissance.

Only in rare instances is it necessary to proceed into an area at low level without making a high reconnaissance first. An example of this would place you in the "deadmans zone". In this instance, it would be wiser to go directly into the area at tree-top level, rather than expose yourself at a higher altitude. Normally you should make a point of not flying low until you have flown high. The high reconnaissance provides valuable information about the enemy situation and terrain which might go unnoticed while at tree-top level.

E. Always assume that the area is hot.

Even after a thorough high and low reconnaissance it is still quite possible to receive fire. Never assume that the area in which you are operating is anything but hostile.

F. Never fire unti you have the friendly forces locatea.

Remember to identify the front lines, flanks and adjoining units. This shoulc be the first order of business when arriving in an operational area. Ground fire c be returned until the friendly troop locations have been positively identified. Fa lure to do this might well result in shooting friendly ground troops.

G. Never fly parallel to terrain features.

Flying arallel to terrain features is dangerous primarily ecause of the len of time your aircraft is exposed to the enemy's weapons systems which are generally employed along treelines, canal lines etc. Also, flying parallel to terrain feature establishes a pattern. When a pattern is established it makes the enemy's job easie since he can predict your path of flight. It is far better to avoid such terrain fe tures as much as possible features is necessary, it should be at various angles to t

H. Avoid firing over the heads of friendly troops.

Firing over the heads of troops is most often the poorest attack direction for several reasons. The machine gun cartridges and links falling on the troops causes a serious control problem for the ground commander. The falling brass and the noise of the guns creates the impression that your fire is directed into the friendlies. lso by attacking over their heads your path of flight is straight into the enemy fi of fire aimed at the friendly troops. Lastly the enemy troop disposition is most li ely to be parallel to the friendlies. Your attack over the troops would not make ma imun use of your weapons beaten zone. Attacks should be planned to have the long axi of the beaten zone of the weapons correspond as nearly as possible to the long axis oxis of the target.

I. Expend only when you have a worthwhile target.

Don't waste ordnance and don't expose yourself and your crew by engaging an un- worthy target. Remember your mission. Do not expend unless you feel that it is nec essary to neutralize or suppress a target and do not jeioardize completion of your missio by expending 100 per cent of your ordance when 50 per cent would have done the job.

J. Always know the situation.

Before becoming engaged in a given operation be certain that you familiarze yourself with all available information pertinent to the intended operation. This must include the ground plan, air plan and all coordinating information concerning supporting forces artillery, fighters etc.

K. Take your time.

Shock action and surprise are part of armed helicopter tactics but can only be accomplished by relatively experienced crews without jeopardizing the safety of all concerned. While your learning the trade of flying armed helicopters remember to concerntrate on accuracy and sound tactics, speed will follow.

L. Brief your elements to a man.

Everyone inside your helicopter is a very important member of your team. You should never leave on a mission until you have briefed all crewmembers. When the mission is a rushed one, you may have to brief in the air. Often you will receive information over the radio which pertains to your mission from other aircraft in the area or on the same mission or from ground forces in the area. Teach your teammates to monitor the radio and remember what is said. As in any military operation, the five paragraph field order should be used during your briefing.

IV. STRIKE CONSIDERATIONS.

Strike considerations are all of those factors which must be analyzed before a tactically sound target attack can be conducted. Every situation if different and must be individually considered. The considerations outlined herein while not all inclusive, provide a basic guide for determining the best tactical actions.

A. Friendly troops dispositions. 2

The first and most important consideration when planning a strike is the location of the friendly forces. It is equally important to identify the frontlines, flanks and the position of any adjoining units. This information can be gained from a careful analysis of the tactical ground plan, briefings on the ground or in the air from other aircraft in the area, and from visual and radio contact with the ground advisor.

B. Terrain. 1

In considerating the terrain, observe how the features of the area will affect your strike. Be careful to remember those cardinal rules that apply to the terrain. Locate and fix in your mind the tree lines, canals and other outstanding features with relation to your target. These must be fixed in your mind to insure proper tactical action at low altitude should an unforseen situation arise. Having fixed all important terrain features in your mind you must use these as factors in determining your direction of attack and break direction. Avoid attack parallel to tree lines or canals etc., but bear in mind that you want the long axis of your weapons beaten zone to correspond as nearly as possible to the long axis of the target. The long axis of the target will generally coincide with the tree line or canal line, etc. By attacking at an angle of 15o to 45o to a line near terrain feature you achieve both disired situations.

It is also unwise to break into a line near terrain feature if this can be avoided. In some cases this can not be avoided. In this situation, it is best to fly into the line near terrain feature at a 90o angle to minimize exposure time.

Whenever possible stay over heavy trees and avoid overflying clear areas. This will reduce the amount of time that the enemy has to shoot at your aircraft.

C. Sun 4

The position of the sun with relation to your target can be an important factor. Early morning and more often late evening are the most important times to remember this. It is best to attack with the sun to your back as this limits the visibility of the enemy. Likewise an early morning attack into the sun complicated by haze (common in this area) will pose a serious limitation to your effectiveness due to reduced visibility.

D. Wind. 3

The direction and velocity of the wind is at all times valuable information to an aviator. It is particularly important when firing rockets.

When fired in a cross wind the 2.75 rocket will weather vane, or fly into the wind. This problem increases as the wind velocity increases. Crosswind target-engagement should be avoided and in its place an into-the-wind or down-wind attack should be used. Attacking into the wind will allow maximun ground speed as the turn away from the target is accomplished. Attacking down-wind will give you greater ground speed during the attack and longer range on your rockets, however your ground speed will decrease as the aircraft breaks away from the target. Since the aircraft is most vulnerable to ground fire during the break, an into-the-wind attack is usually the most desirable.

E. Maximun fire dispersion.

When possible your direction of attack should be such that the long axis of your weapons beaten zone corresponds to the long axis of the target. A flank attack is most often the solution to this requirement.

F. Direction of break.

Due to the field of vision from the left seat, the co-pilot has better field of fire in a right break than he does to the left. In addition to considering the co-pilot field of fire, remember to consider the enemy field of fire location of friendly troops and effects of the terrain before making your decision.

G. Altitude.

A firing pass to engage a target should begin at an altitude of 1200 to 1,500 feet with ordnance expendit re starting when the aircraft is approximately 2,500 to 1,500 meters from the target. The firing pass should be broken off when the aircraft is 500 to 750 meters from the target and at an altitude of 800 to 900 feet. These altitudes and distances from the target will vary dependent on the terrain and the situation, but in no case will a target be overflown. Factors to keep in mind are that the rocket motor will burn out in approximately 2,500 meters and after this will loose some of it accuracy, the 7.62 machine guns must be fired closer than 2,500 meters to be really effective, and when the lead ship breaks off his firing pass the wing ship must be close enough to start firing while the lead ship is turning.

H. Number of passes.

Make only enough firing passes to accomplish your mission. Consider your target and your basic mission. Remember to conserve ordnance- it may become very valuable. In general no more than two rocket passes is most tactically sound. Any more than two passes will not only result in prolonged exposire at low altitude, but accuracy is lost in not having as many rockets to adjust with on a given pass. Generally speaking, there will be one best attack direction. With this in mind it is usually best to make one pass from the best attac direction and expend a sufficient amount of ordnance on the one pass to neutralize or suppress thehostile forces. At times the tactical situation will justify additional machine gun straffing passes, however bear in mind that the rockets are major caliber weapon of the system and when they are expended they should be rearmed as soon as possible.

I. Direction of attack.

When multiple firing passes on one target are necessary the direction of attack should be changed on each firing pass. This tactic increases your effectiveness by confusing the enemy's defenses and impairing his defensive capability. It is also sound in that the enemy does not know from which direction your second attack will come and the element of surprise is still with you.

J. Retention of ordnance.

Always remember the mission and expend only as much ordnance as is called for. An example of poor retention of ordnance would be to completely expend on a lone sniper when the mission was to support a lengthly ground operation.

K. Remember the mission.

It is imperative that the armed helicopter commander keep the mission in mind at all times. Since your helicopter is capable of such a wide variety of missions you will at times be called upon to deviate from your assigned task. Before committing your aircraft to any mission, remember you must be responsive to the ground commander.

L. Radio procedure.

Each aircraft commander must "Roger" the mission before engaging a target. It is the mission leaders responsibility to insure that all of those people with a weapon in their hand understand the mission completely.

RULES OF ENGAGEMENT

1. SELF DEFENSE

2. POSITIVE ID

3. PROTECTION OF OTHER EQUIP & PERSONNEL.

4. OBSERVER DIRECTION

CHAPTER V
"The Fire Command"

As with the operation order, understanding and compliance are enhanced if a set sequence of instructions is used in giving the fire command. The following fire command will be used by all fire team leaders to insure a standard sequence of commander is givin:

(1) FIRE MISSION--"eg" Playboy 12 this is Playboy 11- Fire Mission" This alerts the wingman and his "ROGER" indicates he is ready to copy.

(2) TARGET DISCRIPTION- Describe the target in terms your wingman will understand and make the description sufficiently detailed that the wingman will be absolutely sure of the target.

(3) DIRECTION OF STRIKE- Consdering the effects of sun, wind, location of friendlies, ect, give the direction of attack in compass points, ie FROM NE to SW.

NOTE: The amount to expend refers only to "HARD AMMO" ie. Rockets and 40mm. The wingman is responsible for the conserve machine gun ammo as SOP. Therefore do not use an amount of expend tures of you desire machine guns only. Also, the per-cent of expenditures given is the per-cent of remaining ordnance. For example, in the in the first pass with an M-16 an expenditure of 50 would be 3 pairs of rockets; an expenditure of 50 on the second pass would be 2 pairs or 1/2 of the 4 remaining pairs

4. [illegible] EXPENDITURES-- The amount and type of ordnance to be expended on the target--ie Expend 50% or machine gunsonly.

5. DIRECTION OF BREAK---- The direction you will be breaking when you disingage the target--ie "Break Right".

6. LIMITING FACTORS------ Any special limiting instructions that the wingman must follow- ie, "Restrict right door gunner," or " Keep your fire short of the tree line

** Every A/C must roger so that the fire team leader is assured this fire command would be:

"Playboy 12 this is Playboy 11 Fire Mission"
"This is Playboy 12, over."
"Target the tree line fromcthe violet smoke 200 meters to the NE; from NW to SE, expend five zero, break right, restrict your right door gunner, over"
"This is Playboy 12 Roger."

CHAPTER VI

CONCEPT OF OPERATIONS

A. Armed Reconnaissance.

B. Support of Airmobile Assaults.

C. Overhead Cover in Support of Ground Operations.

D. Escort of Unarmed Aircraft.

E. Convoy Escort,

F. Target Acquisition and Adjustment of supportingfire.

G. The Emergency Reaction Force.

H. Night Operations.

CHAPTER VI

CONCEPT OF OPERATIONS

These mission descriptions are patterned after the current operating procedures within the company. With a basic understanding of these procedures you will be better prepared to execute the instructions of your leader.

CHAPTER VI
CONCEPT OF OPERATIONS

A. (ARMED RECONNAISSANCE)

1. CONSIDERATIONS: The reasons for an armed reconnaissance are many and the methods of accomplishment are likewise diversified. To effectively conduct an armed reconnaissance, the fire team must have an idea of what the purpose of the reconnaissance is. The following types of reconnaissanes and the suggested methods of accomplishment clarify the foregoing statement.

2. TYPES OF RECONNAISSANCE:

a. Locating the enemy. Due to the nature of the terrain over which helicopters operate and the effective concealment techniques practiced by the enemy, the most effective method of locating the enemy is to draw his fire. There are many ways of doing this. Some of the more commoly used methods are listed below:

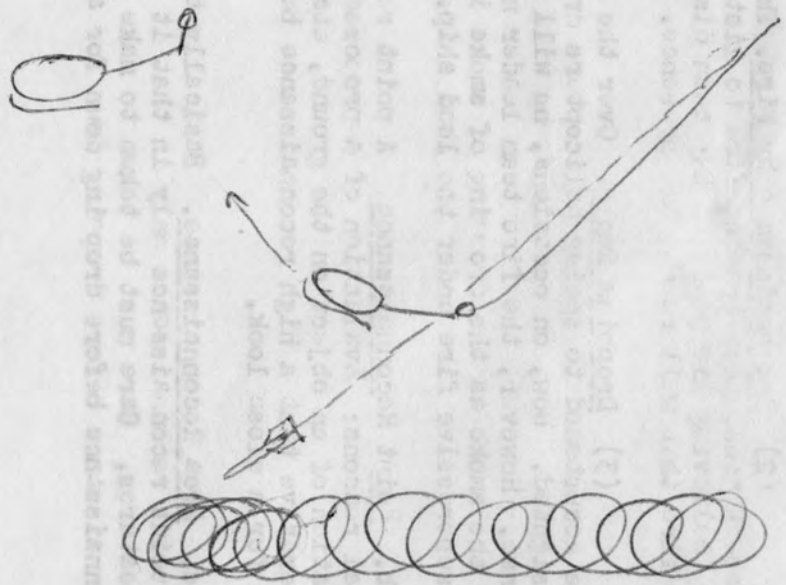
(1) Reconnaissance by Decoy. This consists simply of flying over a suspected area at the edge of the range of effective hostile fire (approximately 1200 to 1500 feet absolute altitude or at low level) to draw hostile fire. Over the period of the conflict this method has lost effectiveness as the enemy has become educated to hold his fire and maintain his concealment.

(2) Reconnaissance by Fire. This method consists of firing into a suspect area, then ceasing fire to listen for hostile ground fire. The enemy, believing his position has been discovered, will often put up defensive fire that will reveal his presence.

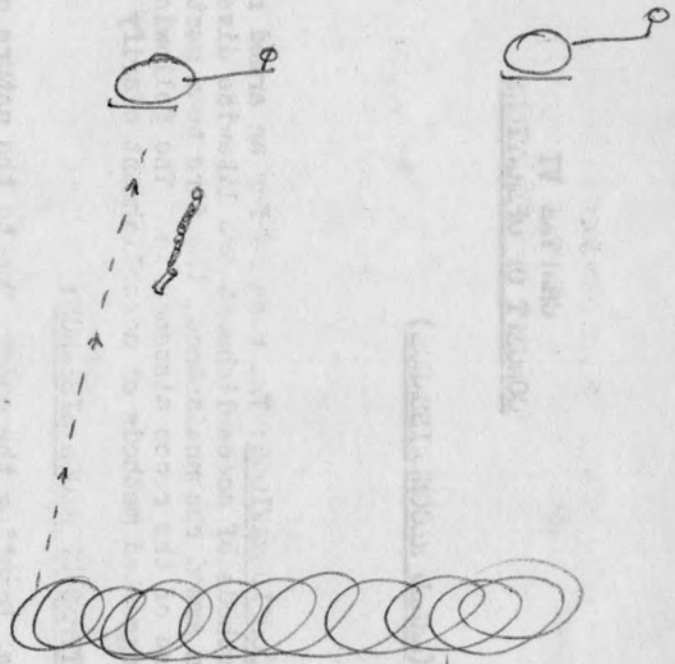
(3) Dropping Smoke. Over the period of the conflict the enemy has become accustomed to seeing helicopters drop smoke grenades when the enemy is sighted. Now, on occasions, he will fire at the helicopter in self defense. However, the fire team leader must caution his wingman to disregard the smoke as the dropping of smoke is the signal for the wingman to place suppressive fire under the lead ship.

b. Point Reconnaissance. A point reconnaissance may be required for several reasons: Evaluation of a proposed landing zone, identification and evaluation of an object on the ground, etc. As with all reconnaissances it is imperative that a high reconnaissance be made prior to decending to low level for a close look.

c. Area Reconnaissance. Basically the area reconnaissance differs from the point reconnaissance only in that it covers more area thus more terrain features. Care must be taken to make a longer and more complete high reconnaissance before dropping down for a low reconnaissance.



Wing man fire and brk off
BEFORE crossing target.



Leader mark w/smoke

If the area is very large and or particularly threatening, it is wise to divide it into two sectors taking a new high reconnaissance in each. It is important to remember that a large are will take a lon time to check out and it should not be rushed.

d. Route Reconnaissance- Normally a reconnaissance of a road or highway will be made in conjunction with a convoy escort mission and, for this reason, the reconnaissance should not precede the convoy by more than a few minutes. A reconnaissance prior to this time would allow the enemy time to set up an ambush for the convoy. Employment of good tactical flying, a high and low reconnaissance over three to four kilometer sections of road at a time, and constant radio contact with the convoy will usually insure successful completion of both missions.

3. Flexibility: No matter what kind of reconnaissance is being performed, the fire team must always remain flexible and responsive to the ground adviser for whom the reconnaissance is being performed.

4. Reports- For an armed reconnaissance to be of any benefit, a complete report, even of negative sightings, must be made to the supported unit. These reports will normally be made orally and the most expedicious means is, of course, by radio. Remember to use terms that ground commanders will understand and be concise, but complete.

Cross a road at 90° if possible with a couple breaks thrown in.

Fly far enough back of leader to enable a firing pass and break off before flying over the target. Initial fire is suppressive only. 2nd pass is for attack reasons.

C (OVERHEAD COVER FOR GROUND TROOPS)

1. CAPABILITIES. Armed helicopters may be effectively used in an overhead cover role in support of ground operations resulting from airmobile assaults or conventional ground operations. Both are similar in nature and will be covered as one for the purpose of this type operation due to the close proximity of friendly forces. First in the order of business will be to make radio contact with the ground commander and make positive identification of the location of his troops or land and go over the ground tactical plan noting objectives, check points, frequencies, etc.

2. DELIVERY.

a. Continuous. To satisfy the need for continuous overhead cover fire teams are rotated on station. As one team expends its ordnance or runs low on fuel, another comes on station to take its place.

b. Onacall. If the situation does not require continuous overhead cover, the fire teams can standby at a nearby location where they can respond to a radio call from the ground commander. This is especially effective if only one fire team is assigned to the mission.

3. UTILIZATION. The ground commander will, dependin on the tactical situation, utilize the fire team for (any of the following missions or combination of missions:

(a) Fire support. The armed helicopter provides a rapidly responsive base of fire that is particularly effective in areas outside the suppor of artillery fans.

(b) Reconnaissance. As an airborne observation platform, the fire team may be utilized to search for troop movements, gun emplacements, routes of advance, etc.

(c) Radio relay. Radio equipment aboard aircraft can provide relay functions while keeping abreast of the ground situation to the mutual benefit of both the fire team and the ground forces.

(d) Med-evac. Only if there is no med-evac helicopter present and then only if the situation is critical, should the armed helicopter attempt a med evac mission. In many instances this will require jettisoning ordance and leaving the ground troop uncovered for lengthy periods of time.

4. REPORTS. Be sure to make radio contact with the ground commander and report arriving and departing on station. Report all intelligence to the ground commander and make recommendations for the employment of the fire team

D (ESCORT OF UNARMED AIRCRAFT)

1. GENERAL.

The fire team leader makes recommendations on such matters as altitude, direction of approach and departure, ect., but the final decision rests with the unarmed ship. The armed ships must remain flexible to give the required coverage regardless of the unarmed ships actions.

2. PRE-FLIGHT COORDINATION.

Good preflight coordination with both armed and unarmed pilots present, will result in a smooth mission with the least number of radio calls and confusion in the air. Follow the five paragraph field order and find out, as best you can, the location of friendly forces in and around your intended landing areas. Next determine the mission of the anarmed ship. The med-evac of an American advisor, for example, will cause you to plan much more differently than you would for a routine administrative mission. Coordinate the mission in as much detail as possible before taking off, using the map and all information pertinent to the intended operation. Lastly, exchange your call signs and designate the radio frequencies to be used.

3. ENROUTE RESPONSIBILITY.

The enroute responsibility of the armed escort is primarily cover of and possible extraction of the crew and passengers of a downed ship. It is of prime importance for the escorting crew to follow closely the flights ground track on the map.

4. RECONNAISSANCE AND LANDING.

Upon reaching the first landing zone the escort moves out ahead of the unarmed ship and begins a standard high and low recon. During the recon all information pertinent to the landing should be thoroughly recorded and transmitted to the escorted ship as the reconnaissance is completed. The landing zone report and approach recommendations should include: A report of fire, security in and around the landing zone, weather conditions including wind, etc., identification of landing zone location i.e. smoke or white "H", and a recommended approach route. If necessary the escort may have to mark the landing zone with smoke. This will identify it well for the approaching ship and also provide an excellent source of wind information.

As the escorted ship starts his approach the armed commander must position his escort far enough to the rear so as to provide cover on the approach to the ground. The air speed of the escort should remain above seventy knots at the slowest point as they judge their escort , so that the lead ship passes the escorted ship on short final and the wing ship passes the escorted ship on the other side just as he touches down in the landing zone.

Airspeed is of course relative to the situation. The escort must continue to cover the unarmed ship even if he elects to make a very slow approach. If it is possible to remain in the air while the escorted ship is down, the armed ships should orbit the landing zone at altitude. Of course, if the landing zone is in a very secure area the armed ships may land. Remember that the armed helicopter is of no use while on the ground.

6. TAKE-OFF AND DEPARTURE.

In your preflight coordination, establish that when the escorted ship is ready to "come out" of the landing zone, he should crank and call on the radio that he is ready. If the armed ships are on the ground, they must become airborne first. Once in the air, the armed commander recommends a take-off direction and a climb out heading. Once this is done, the armed ship commander positions his elements and calls the escorted ship out. Always confirm that the escorted ship does or does not intend to follow your recommendations before he starts a takeoff or an approach. Once the take-off is accomplished the enroute escort continues on the next landing zone.

E. CONVOY ESCORT

1. GENERAL

The threat of convoy ambush is ever present in counter-insurgency warfare. The threat may be greatly reduced through use of the armed helicopter units as a reconnaissance and strike force. Both fire team or platoon can be used effectively for this operation.

2. CONDUCT OF THE OPERATION.

The mission may be conducted by an armed helicopter platoon using one fire team as an advance reconnaissance force and a second fire team as a strike force positioned over the moving column. The recon element should reconnoiter at least 1500 meters forward of the column. Reconnaissance should extend at least 100 meters on either side of the route or as terrain dictates, and include lateral routes up to 800 meters from the route of advance. The reconnaissance effort should be directed toward determination of:

a. Condition of the route

b. Obstacles along the route.

c. Enemy positions along the route or on terrain that dominates the route.

The reconnaissance element relays all pertinent information to the escort commander using a spot report to include negative reports at least every ten minutes. The strike element provides cover directly over or adjacent to the column. The strike element should generally operate at 1500 feet altitude, flying at 75 to 85 knots. It should fly in 360 degree orbits or "S" patterns over the column. The strike force should reconnoiter terrain immediately adjacent to the column and dominating terrain features adjacent to the route. It must be prepared to support both the reconnoitering element and the ground convoy.

3. SPECIFIC INSTRUCTIONS TO MISSION LEADERS.

The mission leader should conduct a thorough map reconnaissance of all proposed routes and adjacent terrain. He should also:

a. Establish a system of check points, phase lines, and holding areas to be used by his elements.

b. Mark key terrain features.

c. If possible, select alternate routes around possible enemy positions.

When time permits a route reconnaissance should be made 24 hours prior to the mission. Refueling, rearming, and landing areas should be established along the route of march. These areas should be located not more than 15 minutes from the column. They shoulf be capable of supporting all routes of advance to be used by the convoy. Detailed coordination with the convoy commander is essential and should include:

d. Number and type vehicles in the column.

e. Radio frequencies and or visual signals.

f. Primary route of advance.

g. Alternate routes of advance.

h. Stopping points.

i. Start time, start point, a d rendezvous point and release point.

j. Preplanned action of the convoy if attacked.

k. Techniques to be employed by the armed helicopter unit.

l. Control measures to be used.

m. Location of friendly forces in the area.

F. (Target Acquisition and Adjustment of Supporting Fires)

1. GENERAL. This chapter will describe the procedures in acquiring permission to fire at targets and adjustment of Air Force strikes or artillery fire on these targets.

2. CLEARANCE TO FIRE: Permission to fire on suspected targets must be given by the local Vietnamese Commander through his counterpart. The request and permission will usually be transmitted by radio. Extreme caution must be taken to insure the Vietnamese Commander understands the exact location and disposition of the suspected target, and that no fire is directed close to friendly troops.

3. ACQUISITION OF TARGETS: Targets that require strikes by armed helicopters, tactical air, or artillery may be acquired by ground units, airborne observers, or by armed helicopters. Clearance to provide supporting fire on targets acquired by ground units is not required providing the location of all friendly troops is known. When the target is acquired by an airborne observer, he will usually get the required clearance before requesting support.

4. ADJUSTMENT OF SUPPORTING FIRE:

a. Adjustment of the Air Force Strike - In order to properly adjust an air strike you must have dependable radio contact. For this reason try to get at least two radios on common frequencies. Next insure that the leader of the Air Force fighters has both you and your wingman in sight. (It will often be necessary to state that you are flying a helicopter as many Air Force pilots have worked only with Army fixed wing spotters in the past). Once contact has been established you can mark the target with either rockets or smoke, depending on the target and ground situation. If you are marking a point target one mark will be sufficient, but if it is a target in depth it will be necessary to mark the outer limits. Once the first bomb run has been completed the strike can be adjusted by giving a compass direction and a distance from the first strike, ie. "Move the strike 100 meters to the northwest." Prior to the strike it will be necessary to brief the Air Force mission leader as to the disposition of the friendly troops, if they are present in the area, and any restrictions to fire. After the strike it is generally required for the fire team to make a post-strike recon to determine the effectiveness of the strike. This is conducted in the same maner as any other visual recon.

b. Adjustment of Artillery Fire - At times it will be necessary for helicopter pilots to initiate and control an artillery fire mission. In order to accoplish this mission, all aviators must be familiar with the methods of artillery adjustment.

C. First establish a gun target line and set up an orbit away from this line, where you will have complete observation of the target. Second, initiate the fire request by sending in coordinates of the target or by giving an azimuth and a distance to the target, followed by a brief description of the target. Observe the strike of the first round, then adjust the fire to bring it on target. Always do all adjusting with refenence to the gun-target line as a base. Establish a bracket immediately, then continue to split the bracket until you are within 50 meters of the target, then request a fire for effect. The mission is terminated by you when you are satisfied that the target has been neutralized. If you are firing at a point target, you will only send in sensing after fire for effect has been entered. FDC will control all corrections and you will terminate the firing you will give end of mission, followed by analysis of target damage.

Alert ... Fire mission

Target ... Hatch 12 o'clock

Diz of att ... N to S

Exp. of Ord ... 50%

Diz of bst ... Right or ~~Left~~

Res. to fire

G. The Emergency Reaction Force.

1. The emergency reaction force is a term used to describe: that type mission which results from a sudden enemy attack on a post or hamlet, an ambush of a ground or convoy unit, or a downed aircraft. Any one of these situations will probably result in the scramble of an armed helicopter element. Little informati will be avaible and the "Brief ng" may be composed of a grid coordinate and an F.M. frequency. Experience has shown that most emergency reaction type missions occur in the late afternoon or evening and at night. Proper reaction to these missions requires that considerable pre-planning go into the manner with which you ac when alerted

2. The alert status: The company maintain a 5-minute alert fire team capable of being reacted to any emergency in III Corps area as directed by BOC, and a 30-minu back-up fire team to provide relief for the 5-minute team if reguired.

a. 5-minute Alert. This fire team is on duty at operations fully-clothed and with their aircraft preflighted. In this readiness posture they can become airborne within 5-minute.

b. 30-minute Back-up. This fire team is on alert in the villa ready to go to operations as soon as the 5-minute team is committed. In order to meet this requirement the fire team leader must have all of his element ready to move immediately. He cannot react in time if one of his aviatirs is at the PX and one is in the company. The fire team leader must have his team ready and alert. When the telephone rings at the quarters a member of the backup fire team should take the call. Also, the fire team leader must have a vehicle standing by at all times with which to get to the flight line.

c. The Rapid Reaction. When a call comes for the alert fire team, it will be one of two types: an alert for a mission scheduled to depart in one or two hours etc., or it will be a rapid reaction. When you are committed, your actions from then on can mean life or death for some one in very serious trouble. The armed commander goes to operations to receive his mission and his team members go directly to the aircraft and "crank". After take off, the mission leader will give a fragmentary situation report over the radio. The fire team should be airborne within five minutes of their alert. Company operations will want a situation report as soon as possible to determine what other actions are necessary. As armed helicopter commander you will soon be involved in the situation and supporting commanders will look to the fire team on station for a situation report and analysis.

In a rapid reaction remember to remain calm and think things out thoroughly. Mistakes are easy to make when you are in a hurry.

H. NIGHT OPERATIONS

1. GENERAL:

a. Night operations involving Armed Helicopters utilized the same organization for combat as day missions with the flight leader having the capability of tailoring his force with aircraft especially equipped to support a night mission. This concept will discuss equipment that has been developed to this date with tactical procedures that provensuccessful. Requirements for night operations are not as varied as day missions and are limited by weather, tactical requirements, initiative of the commander and the proficienc of his crews. Missions are classified into two catagories; a rapid or emergen force scrambled to assist a besieged hamlet or ground forces and planned operations complete with overlays, SOI's and time schedules. Operations will be conducted using natural available light, a search light helicopter, or an Air Force Ship.

b. Briefing: Prior to any night tactical operation, either planned from a scramble status, a briefing should be conducted for the entire crew, T facilitate control, the flight commander should brief on enroute formations and possible employment in the objective area. At times it may be necessary to assign specific altitudes and whether the navigation lights are on or off. For example the 50 caliber ship should be assigned to a flank position to allow better coverage of the target. If an aircraft is not required on all targets, but on call to the commander, assign him higher and to the rear of the flight in position to quickly react. Make every member of the flight aware of the position requirements to prevent firing on your own team mates. Part of the briefing should cover the actions should an aircraft go down. If a search light or flare ship is assigned, make sure he understands his part in any rescue attempts. The seconds saved by this briefing may make the difference between success and failure. If the objective area is known, crews should be briefed on the location and direction of the nearest friendly compound in case of partial power loss and some distance can be covered by the stricken helicopter. Assign operational frequencies for all radios. If you use an Omni radial for navigation, brief your pilots when to change to the VHF tactical frequency. With the increased difficulty of navigation at night, each aircraft should have a complete map set of the entire area of operations. A thorough map study should be conducted pointing out major land marks, known enemy positions and unlit hazards to flight, ie Wires and unlit mountains.

c. Air Force fixed wing flare ships are available to provide additional light in the area of operations. These aircrafts are sometimes dispatched to the operational area when requested from a ground commander under attack and you will find them on station when you arrive. Other flare ships can be scrambled through Paris Control. Paris will provide you with the call sign and frequency to facilitate coordination of your mission. The flare used is the Mark-24, which provides 2 million candle power of light and has a capability of being pre-set to ignite at desired altitudes. Direct the flare ship supporting your operation to the best location for your firing passes on the objective. Request an altitude but low enough to prevent burned outflare chutes from passing through your flight path. Well plac flares will provide enough light to enable you to conduct your operations from the same altitude used during daylight.

prevent burned out flare chutes from passing through your flight path. Well placed flares will provide enough light to enable you to conduct your operations from the same altitude used during daylight.

2. TYPE NIGHT MISSIONS:

a. EMERGENCY REACTION FORCE: An emergency reaction force is a unit designated to remain on alert, in flight operations, to respond to an emergency attack or a hamlet, military garrison, an ambush of a convoy, or a downed aircraft. When you are committed, little information will be available, you may take off with only a grid coordinate, an FM frequency and a call sign. Contact the beseiged ground element as soon as possible after take-off and get a briefing on his situation. This will provide you with maximum time to analyze his plight and formulate your plan to support him. Keep operations informed of your activities and additional fire team requirements in order to adequately provide for your relief, if required, or to reinforce your fire teamif necessary. Always identify the friendly positions before you engage any target. In an ambush or attach the opposing forces may be mixed or at best close together and your supporting fire may endanger the friendly troops. The ground commander may give you a direction (azimuth) and distance to the attacking force. In some ARVN Compounds a large arrow is constructed for this purpose. It may be illuminated by electric bulbs or by pouring gasoline on it and igniting it. (See figure 8) Once the attack has been started by your armed element adjustments can be made by the ground element using an azimuth and distance from the previous strike. If a "lightning bug" is available its employment will depend on the availability of other light. A full moon will provide enough light to identify the terrain while starlight and burning buildings are inadequate and the searchlight should be used. If it is necessary to employ the "lightning bug" ensure that the gun ship crews are alert to return fire and suppress if it is fired on from the ground. From an altitude of 1000 to 1500 feet the light beam can be maneuvered to adequately identify the attacking force. If it is impossible to observe the enemy with the light, place the beam on the friendly position to mark it, and engage the enemy force using an azimuth and distance. Again it may be possible for the ground commander to maneuver the light beam, Via Radio, to place it on the attacking insurgents. The employment of aircraft flares behind the friendly position will enable you to make firing passes away from the light, using the flares as you would the early morning or late afternoon sunlight.

b. ARMED RECONNAISSANCE AT NIGHT: Normally the armed reconnaissance at night is restricted to a definite area such as a river, canal or highway. It is difficult at best to recon an area covered with heavy trees or vegetation, unless your targets are well defined or their location has been determined on a prior day light reconnassance. Operating in a free area will permit you to engage any target located as the area is OFF LIMITS to civilian

traffic or a curfew has been imposed during the hours you will be over it. On some missions you may operate in an area that is not free. The targets you locate in these areas are suspect targets and must be verified by the sector advisor, as enemy before you engage them. If a "lightning bug" is employed, haze, smoke, and fog will dictate the flight altitude. Start at 1000 feet and vary it as required by weather conditions. The flight leaders position is in a gun ship, M-5, or M-3, at a lower altitude, with all lights out, flying in a position to observe the illuminated area. The remainder of the flight remains at altitude in position to engage if a target is identified. If a target is located and identified, the "lightning bug" should enter an orbit to keep the area flooded with light. If you are operating in a free area, immediately upon identification, the lower, Flight Leaders aircraft should engage with all available fire power and break away remaning clear of the light. He should call his break direction over the radio and climb to a safe altitude before his navigation lights are turned on. If a second pass is required the wing ship will then extinguish his navigation lights and commence a firing pass from a different direction, call his break and climb out. Every aircraft follows this pattern until the target is destroyed or neutralized. (Fig 6). This placed only one aircraft in the target area at a time in relative security of being "blacked out". Using the "Lightning bug" on point targets requires firing passes to be made from a lower altitude than the normal engaging distance, Gunners should strive to keep the target located in relation to other objects on the ground, ie· road junctions, curves in river, or building areas. Always conduct a post strike recon with the light to acertain the effectiveness of your strike.

C. LIGHTNING BUG: Lightning bug is a combined force of ground and air units, whose mission is to eliminate the Viet Cong capability of moving troops and supplies at night along the rivers, canals and highways. It is composed of three elements. An OV-1 equipped with SLAR which provides the operator with returns from moving targets and further locates them to six digit coordinates. An operations center familiar with traffic in the area of operations, normally an American/Vietnamese team located in the sector or province Headquarters and finally an Armed Helicopter Force on call to engage and destroy targets identified as enemy. A typical communications system is shown in figure 7 in the illustrated section of this pamphlet.

This is generally how a "lightning bug" mission will be conducted. At a pre-determined time and area, known to all three elements, the "SLAR" aircraft will search for enemy targets. When he has a "return" he will call the coordinates to the ground control radio for initial identification. Located on the ground at a staging area, the Armed Helicopter flight leader will monitor and plot coordinates direct from the radar aircraft. Information from the "SLAR" will normally include the location, ie· on river, canal, or highway, the number of targets, and the direction of movement. The Armed Helicopters take off as quickly as possible and fly directly to the target area.

CHAPTER VII
CREW DUTIES

Employment of armed helicopters in combat requires that every man in every crew be thoroughly familiar with his indivifual responsibilities and his team responsibilities to insure successful and safe completion of the mission. The smallest element that is employed tactically is the light fire team and, as the name implies, this team of eight man must work together for mutual safety and mission accomplishment. The following paragraphs deseribe these duties. Not only should every man he thoroughly familiar with his own job but he should be prepared to take over any of the other jobs on a moments notice.

A. (DUTIES OF PLATOON COMMANDER)

Commands platoon consisting of seven armed helicopters, fourteen armed helicopter aviation, eight armed helicopter crew chiefs, eight enlisted door gunners, and one armed helicopter platoon sergeant.

Responsible for training, supervision, and scheduling of all assigned aviators, with primary emphasis on organization for combat mission based on mission requirements. expected enemy action, and individual and fire team experience level.

Must understand and have knowledge of all friendly and enemy activity. Must be capable of planning and conducting all types of airmobile operations from single aircraft missions through large scale missions involving hundreds of aircraft. Must know capabilities and limitation of all aircraft and weapons supporting these operations t include direction of tactical fighter bomber strikes, adjustment of artillery and mortar fire, and control of all supporting elements when their normal controls are inadequate or absent. Must be able to select, recon and mark suitable landing zones for any size airmobile operation and be able to recommend safesr and most desirable routes of approach, landing and departure to all troop carrying helicopters.

Must be assertive, positive, and demanding in all command functions and particularly when acting as controller for supporting arms. Must be decisive and final in all decisions regarding combat assault operations because the unarmed troop carrying helicopters and the assault troops are totally dependent upon his recommendations and a wrong decision can be fatal.

Must have intimate knowledge of all his assigned aviators, crew chiefs and door gunners. Must husband his personnel and strikve to obtain their best efforts in all that they do. Must anticipate weaknesses or dangerous tendencies on their part and either take action to correct them or remove them from any participation in combat operations.

Finally, he must lead by example and always be where there is the most danger and the direct need for immediate, dynamic leadership.

B. (DUTIES OF FIRE TEAM LEADER)

Responsibilities as a fire team leader are two fold. He is responsible to the commander to accomplish all assigned missions. He is responsible to the 7 other members of the fire team to make all the correct decisions at all times to insure their safety.

a. Safety Responsibilities, he must:

1. Insure all pilots are physically fit and mentally sound.

2. Insure all personnel have received the best training possible before subjecting them to combat.

3. Insure they possess and utilize the maximum in protective equipment. (Gloves, sleeves rolled down, chestprotedors, and flak Jackets)

4. Insure all assigned aircraft are combat ready.

5. Thoroughly analyze all decisions that incolve the entire fire team, which includes most of the decisions made during a flight.

6. Checks the weather and other flying conditions before attempting a flight.

7. Remember that the fire team is only as strong as it's weakest pilot.

b. Mission responsibilities, hemust:

1. Check the schedules prior to each flight and be thoroughly familiar with the mission.

2. Insure that personnel are notified of take off time.

3. Prior to each flight insure te possession of correct maps.

4. Always make the take off and departing time.

5. Advise the ground troops of the capabilities and limitations of the fire team.

6. Analyze the requests of the ground troops and insure they can be accomplished without unecessary risk.

7. Insure mission results will be followed up by ground troops in artillery.

8. Constanly be familiar with both aircraft to determine if they become unflyable.

9. Keep a constant check on fuel, weather, location, and ammo while while on a mission.

10. Never fire or allow wing man to fire indiscrimenatly.

11. Report all intelligence to operations.

12. Debrief each mission and discuss mistakes. Compliment a job well don

13. Keep in mind that he is fully responsible for 8 lives.

14. Inspect his crews for their appearance, proper armament and equipment on board, and overall aircraft apperance and flight worthiness.

C. (DUTIES OF WINGMAN)

1. Be in position to lend suppressive fire to lead ship.

2. Lend further recon capabilities to fire team.

3. Advise lead ship of anything observed of a suspicious or important nature of which he may not be aware.

4. In areas of heavy radio traffic act as an extra monitor on radio and to monitor any "extra" frequencies (i.e. Air Force freq)

5. Keep abreast of tactical situation at all times.

6. Be able to operate efficiently as a single aircraft in case of emergency.

D. (DUTIES OF AIRCRAFT COMMANDER)

1. BRIEFS ENTIRE CREW ON:

   a. MISSION

   b. FRIENDLY AND ENEMY SITUATION

   c. RESTRICTIONS TO FIRE

   d. WEATHER

   e. ALL OTHER INFORMATION AVAILABLE PERTAINING TO THE MISSION.

2. COMMANDS AIRCRAFT REGARDLESS OF WHO IS FLYING.

3. TAKES RADIO CHECK PER COMPANY SOP.

4. RESPONSIBLE THAT ALL MISSION ESSENTIAL EQUIPMENT IS ABOARD AND OPERATIONAL.

5. RESPONSIBLE FOR ACTIONS OF ALL CREW MEMBERS DURING MISSION.

6. PERSONALLY SUPERVISES REARMING AND REFUELLING OF AIRCRAFT. IF HE MUST BE ABSENT, DIRECTS THAT THE PILOT SUPERVISE AND ASSIST.

7. KEEPS SHARP LOOKOUT FOR OTHER AIRCRAFT FROM 10 O'CLOCK POSITION TO 3 O'CLOCK POSITION.

8. DEBRIEFS CREW AFTER MISSION.

9. TRAINS THE CREW.

10. AIRCRAFT COMMANDER OF LEAD SHIP WILL PERSONALLY COMPLETE MISSION REPORTS FOR HIS FLIGHT.

E (DUTIES OF PILOT)

1. OBTAINS SCI AND MORPHIC FROM OPERATIONS.
2. PREFLIGHTS AIRCRAFT AND ARMAMENT SYSTEM.
3. INSURES THAT ALL REQUIRED EQUIPMENT IS ON BOARD AND OPERATIONAL.
4. INSURES THAT ALL REQUIRED PROTECTIVE AND SURVIVAL GEAR IS ON BOARD AND SERVICEABLE.
5. TUNES RADIOS AND MAKES FREQUENCY CHANGES AS DIRECTED BY AIRCRAFT COMMANDER.
6. MONITORS ALL RADIO FREQUENCIES NOT BEING MONITORED BY AIRCRAFT COMMANDER, BUT DOES NOT TRANSMIT UNLESS DIRECTED TO DO SO BY AIRCRAFT COMMANDER.
7. RECORDS ALL PERTINENT INFORMATION RECEIVED ON RADIO AND FROM OTHER CREW MEMBERS THAT HAS BEARING ON MISSION.
8. RECORDS COORDINATES AND TIMES OF ALL STRIKES AND AREAS FROM WHICH FIRE IS RECEIVED.
9. ARMS AND DEARMS ARMAMENT SYSTEM SWITCHES AND CIRCUIT BREAKERS AS REQUIRED.
10. MONITORS AIRCRAFT INSTRUMENTS DURING FLIGHT AND NOTIFIES AIRCRAFT COMMANDER WHEN THERE IS 400 POUNDS OF FUEL REMAINING.
11. ASSISTS WITH REFUELING AND REFUELING.
12. CLEARS AIRCRAFT FOR TURNS TO THE LEFT.
13. ASSISTS AIRCRAFT COMMANDER AS DIRECTED BY AIRCRAFT COMMANDER.
14. KEEPS CREW CHIEF AND GUNNER UP TO DATE ON TACTICAL SITUATION.
15. KEEPS SHARP LOOK OUT FOR OTHER AIRCRAFT FROM 9 O'CLOCK TO 2 O'CLOCK POSITION.
16. CHECKS SCI FOR FAMILIARITY WITH NECESSARY CALL SIGNS AND POSTS SCHEDULE CODE FOR QUICK USE.
17. NAVIGATES AND MAINTAINS GENERAL AIRCRAFT LOCATION ON THE MAP AT ALL TIMES.

F (DUTIES OF CREW CHIEF)

1. COMPLETES DAILY INSPECTION PRIOR TO ARRIVAL OF PILOT FOR PREFLIGHT.
2. INSURES STANDARD LOADING OF WEAPONS, AMMUNITION, AND SURVIVAL GEAR.
3. INFORMS PILOT AS TO CONDITION OF AIRCRAFT AND ANY SPECIAL CHARACTERISTICS OR DEFICIENCIES IN AIRCRAFT.
4. UNTIES ROTOR BLADE AND VISUALLY CLEARS AIRCRAFT.
5. ASSISTS AIRCRAFT COMMANDER IN ADJUSTING SEAT AND CLOSES DOOR.
6. ARMS WEAPONS SYSTEM ON RIGHT SIDE OF AIRCRAFT. ARMS M-5 SYSTEM.
7. CLEARS AIRCRAFT IF PARKING AREA AND FOR TURNS TO RIGHT IN FLIGHT.
8. THROWS SMOKE GRENADE AND CALLS FIRE WHEN FIRE IS RECEIVED.
9. LAYS DOWN PROTECTIVE FIRE WHILE AIRCRAFT DISENGAGES IF FIRE IS PERMITTED, FIRES UNDER BREAKING AIRCRAFT AND TRAILING ON 180 DEGREE BREAKS.
10. MONITORS FIRE MISSION COMMANDS AND INSURES THAT HE HAS SUFFICIENT AMMUNITION TO PROVIDE FIRE IF REQUIRED.
11. KEEPS PILOT INFORMED AS TO ARMAMENT STATUS AND AMOUNT OF ORDANCE REMAINING.
12. REFUELS AIRCRAFT.
13. REARMS AIRCRAFT ASSISTED BY PILOT AND DOOR GUNNER.
14. MAINTAINS ACCURATE RECORDS ON AIRCRAFT AND ARMAMENT.
15. REPAIRS AND MAINTAINS AIRCRAFT AS AUTHORIZED.
16. SUPERVISES AND ASSISTS DOOR GUNNER IN CLEANING AND REASSEMBLING MACHINE GUNS IF TIME PERMITS.
17. SUPERVISES TRAINING OF DOOR GUNNER
18. KNOWS FIRST AID PROCEDURE AND HOW TO ADMINISTER MORPHINE.
19. INSURES THAT RATIONS AND WATER ARE ON BOARD AIRCRAFT.
20. KEEPS SHARP LOOKOUT FOR OTHER AIRCRAFT FROM 6 O'CLOCK POSITION TO 1 O'CLOCK POSITION.
21. INFORMS PILOT OF ANY MOVEMENT ON GROUND IN MISSION AREA.
22. ACKNOWLEDGES ALL INSTRUCTIONS FROM PILOT AND AIRCRAFT COMMANDER.

G. (DUTIES OF DOOR GUNNER)

1. DRAWS ASSIGNED WEAPONS AND EQUIPMENT AND PLACES IT ON THE AIRCRAFT.
2. INSURES THAT STANDARD M-14, M-79, AND M-60 RESERVE AMMUNITION IS ON BOARD IN BANDOLIERS OR ASSAULT PACKS AS REQUIRED BY LOADING SOP.
3. ASSISTS PILOT WITH PREFLIGHT.
4. ASSISTS CREW CHIEF WITH DAILY INSPECTION.
5. ASSISTS PILOT WITH ADJUSTING SEAT AND CLOSES DOOR.
6. CLEARS AIRCRAFT ON LEFT SIDE IN PARKING AREA AND FOR TURNS TO LEFT IN FLIGHT.
7. KEEPS SHARP LOOKOUT FOR OTHER AIRCRAFT FROM 60 CLOCK POSITION TO 11 O'CLOCK POSITION.
8. MANS WEAPONS SYSTEM ON LEFT SIDE OF AIRCRAFT.
9. MONITORS FIRE MISSION COMMANDS AND INSURES THAT HE HAS SUFFICIENT AMMUNITION TO PROVIDE FIRE ON BREAK IF REQUIRED,
10. THROWS SMOKE GRENADE AND CALLS FIRE WHEN FIRE IS RECEIVED.
11. LAYS DOWN PROTECTIVE FIRE WHILE AIRCRAFT DISENGAGES. IF FIRE IS PERMITTED FIRES UNDER BREAKING AIRCRAFT AND TRAILING AIRCRAFT ON 100 BREAK.
12. ASSISTS PILOT AND CREW CHIEF IN REARMING AND REFUELING AIRCRAFT.
13. CLEANS M-14 AND MACHINE GUNS ASSISTED BY CREW CHIEF.
14. INFORM PILOT OF ALL MOVEMENT IN MISSION AREA NOT PREVIOUSLY OBSERVED.
15. KNOWS FIRST AID PROCEDURES AND HOW TO ADMINISTER MORPHINE.
16. ACKNOWLEDGES ALL INSTRUCTIONS BY PILOT AND AIRCRAFT COMMANDER.
17. INSURES THAT ALL WEAPONS ON BOARD AIRCRAFT ARE CLEARED AT END OF FLIGHT.
18. ASSISTS CREW CHIEF IN MAINTENANCE OF AIRCRAFT IF TIME PERMITS.

CHAPTER VIII

EQUIPMENT

The standard loading list, individual survival kit and required items of uniform include those essential items of equipment necessary for safe, successful mission accomplishment. Due to the weight and balance of the aircraft, only those items listed in the standard loading list should be carried. Since the 197th rarely flys single ship missions, the probability of a crew having to "wall-out" is remote and the individual survival kit may be modified to fit individual requirements.

A. STANDARD LOADING LIST

1. Two barrel racks with four barrels each, one rack attached to each pilot's se
2. Two M-60 door guns, attached to the barrel racks, 1000 rds ammo plus two assa packs per door gun.
3. One M-14 rifle attached to co-pilots seat, 15 loaded M-14 magazined attached in bandoliers to co-pilot seat.
4. One M-16 rifle, attached to pilot seat, 5 loaded M-16 magazines attached to pilot seat.
5. One M-79 Grenade Launcher, attached to Pilot seat, 1 rds in bandoliers attach to pulot seat.
6. One URC-4 Emergency radio attached to Co-pilot seat.
7. One headset (101-U) stored in door post compartment.
8. Five life vests stored in door posts.
9. One ten-pound tool box with flashlight attached to floor after of console.
10. One ten-pound gun parts box attached to floor aft of console.
11. One two-gallon water can attached to floor in center of crew of crew chief/gunn seat.
12. 5400 rds 7.62 ammo for M-6 system (1000 rds per gun plus 300 in each chute).
13. Smoke grendles, attached to firewall above crewchief/gunner seat. (Total 32-2C white)
14. Four chest protectors stored on seats.
15. "C" Rations (minimum of 4 meals) stored in baggage compartment.
16. One Quart MIL 7808 oil, stored in baggage compartment.
17. One Quart MIL 5606 Hydraulic fluid, stored in baggage compartment.
18. M-6 gun covers stored in baggage compartments.
19. 50-feet of ½" rope secured to barrel rack on pilot's seat.

B. INDIVIDUAL SURVIVAL KIT, CREW MEMBER

1. Listed below are the minimum required items of survival equiment to be placed in the standard combat pack issued to each individual.

a. Two part emergency survival kit
b. Signal mirror
c. Hand held mayday flares
d. Multilingual Request for Assistance
e. Snake bite kit
f. Insect repellent
g. Matches
h. Pocket knife
i. Survival Compass
j. Flashlight

22. Minimum survival items required to be secured to the individual crew members webbelt are:

a. Canteen with fresh water
b. Survival Pack
c. Machite knife or jungle axe
d. First aid packet
e. Individual assigned weapon if applicable

C. REQUIRED ITEMS OF UNIFORM

1. The below listed items of clothing and equipment wil be worn by Air Crew Members during aerial flight.

a. Fatigues with sleeves rolled down
b. Combat boots
c. Flak vest with survival knife affixed to left side (Optional)
d. Chest Protector
e. Groin protector, (Optional)
f. APH-5 helmet w/clear visor
g. Flying gloves (gauntlet type)
h. Sun glasses
i. Identification tags w/chain

GLOSSARY OF TERMS

Light Fire Team- the smallest armed helicopter element employed tactically. It consists of two UH-1B helicopters armed with the M-16 system. Or one M-5/3 and one M-16 system.

M-16 System- consists of four mounted M-60C (7.62) machine guns plus 12 2.75 folding fin aerial rockets. The machine guns canbe fired by the pilot in a static positionor by the co-pilot with a flexible sight which allows limited movement of the guns in all directions.

Heavy Fire Team- is the same as the light fire team except that it is reinforced by the platoon commander in a UH-1B armed with the M-3 system.

Platoon Minus- is composed of two light fire teams and reinforced by the platoon commander in an UH-1B with the M-3 system mounted.

M-3 System- consists of two pods, of which, each will hold 24 folding fin aerial rockets. A pod is installed on each side of the aircraft. It also has explosive bolts installed for the purpose of jettisoning the system. This system is now obsolete but will be used until replaced.

Armed Platoon- consists of three light fire teams with the M-16 system mounted, and the M-3 ship flown by the platoon commander.

Deadman zone- that area between the ground and 1000 feet, where you and the aircraft are in the most vulnerable position for enemy ground fire to be effective.

180o Position- flying directly behind the lead helicopter and over the same ground track.

Fire Mission- is the command given by the fire team leader, or platoon commander, to his elements in order to properly engage a target. The following elements should be included warning order, target identification, direction of attack, amount of ammo to expend, and the direction of the break

Strike considerations- those elements which must be considered for every engagement of a target, ie, wind, sun, terrain etc.

Beaten zone- the area on the ground in which the greatest killing factor is obtained. The beaten zone is the area on the ground that is hit after the trajactories of the four guns have crossed.

Firing Pass- a planned attack on an enemy position, or suspected enemy position, with the purpose of neutralization or destruction.

Reconnaissance- is the study of the land in a particular area. It

consists of careful evaluation of all terrain features such as roads, trails, creek and treelines, possible target areas and routes of possible retreat.

Airmobile Assault- the airlifting of troops from a staging area to a preplanned landing zone. The armed helicopter will normally be responsible for the pre-strike, mark, and reconnaissance of the intended landing zone.

Pre-strike- is the placing of fire in and around the landing zone prior to the landing of the unarmed helicopters. Its purpose is to neutralize the area to allow the unarmed elements to land free of enemy fire and to observe all terrain features so say to advise the troop carrying elements on the best landing and departure routes.

Mark of landing zone- is the placing of smoke at the 12 o'clock position of the landing zone for ease of identification of the troop carrying elements.

Eagle Assault- is an airmobile operation on a smaller scale into an unplanned landing zone. The landing is generally followed by an extraction later in the day.

Extraction- the removal, by air of the troops that were lifted into a specific area.

Sensings in artillery- is the position that the round struck the ground with reference to the target. Give sensings as right, left, over, short or doubtful.

Break- the direction of flight of an armed ship after target engagement is complete. By breaking to the right or left, overflying of the target is avoided.

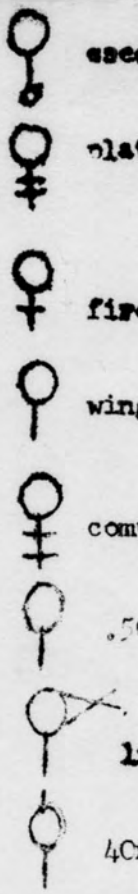
M-5/3 System (Frog)- consists of a M-75 40mm grenade launcher mounted on the nose of the UH-1B. This system is fired by the co-pilot using a flexible sighting device. This M-3 portion of the M-5/3 consists of 24, 2.75 inch folding fin aerial rockets fired by the pilot.

50 Caliber machine gun- UH1B in slick configuration with one. 50 Caliber mounted in right cargo door.

Lighthing Bug- UH1B with M-16 system plus light consisting of seven landing lights mounted in a cluster and controlled by the crew chief. Mount provides capability of varing focus from a central spot to an area flood light.

Slar- OV-1 Mohawk fixed wing aircraft equipped with side looking radar. Radar operator can determine six digit coordinates from his radar returns to assist helicopter in target detection.

Air force flare ship- Air Force C-47 or C-123 equipped with MK-24 flares. Flares can be preset to operate to operate at designated altitude.



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company commander

unarmed aircraft

plt. ldr.

.50 cal ship

example showing plt. ldr. flying .50 cal aircraft.

fire team ldr.

lightning bug

wingman

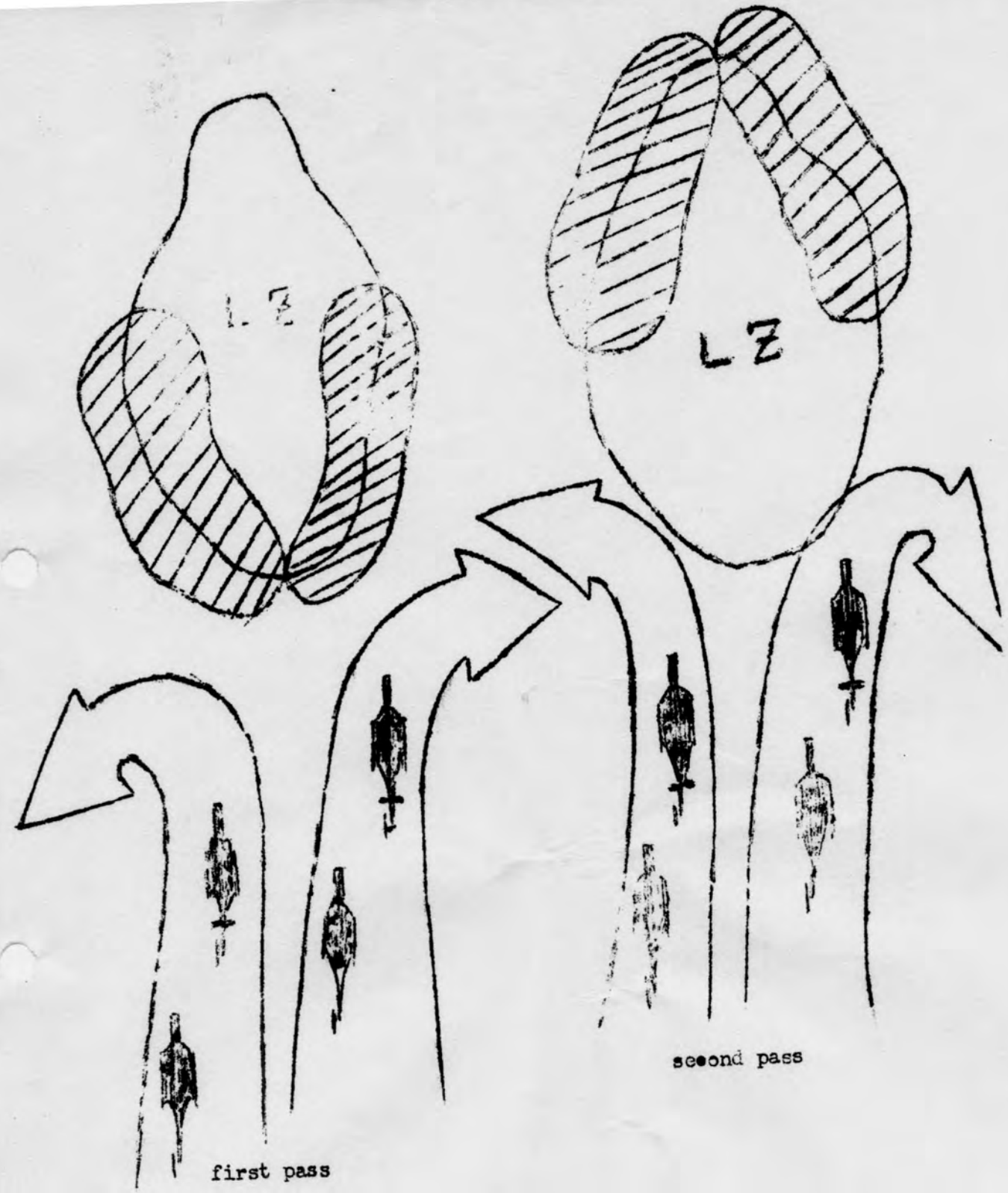


FIGURE 1
THE DELIBRATE RESTRIKE

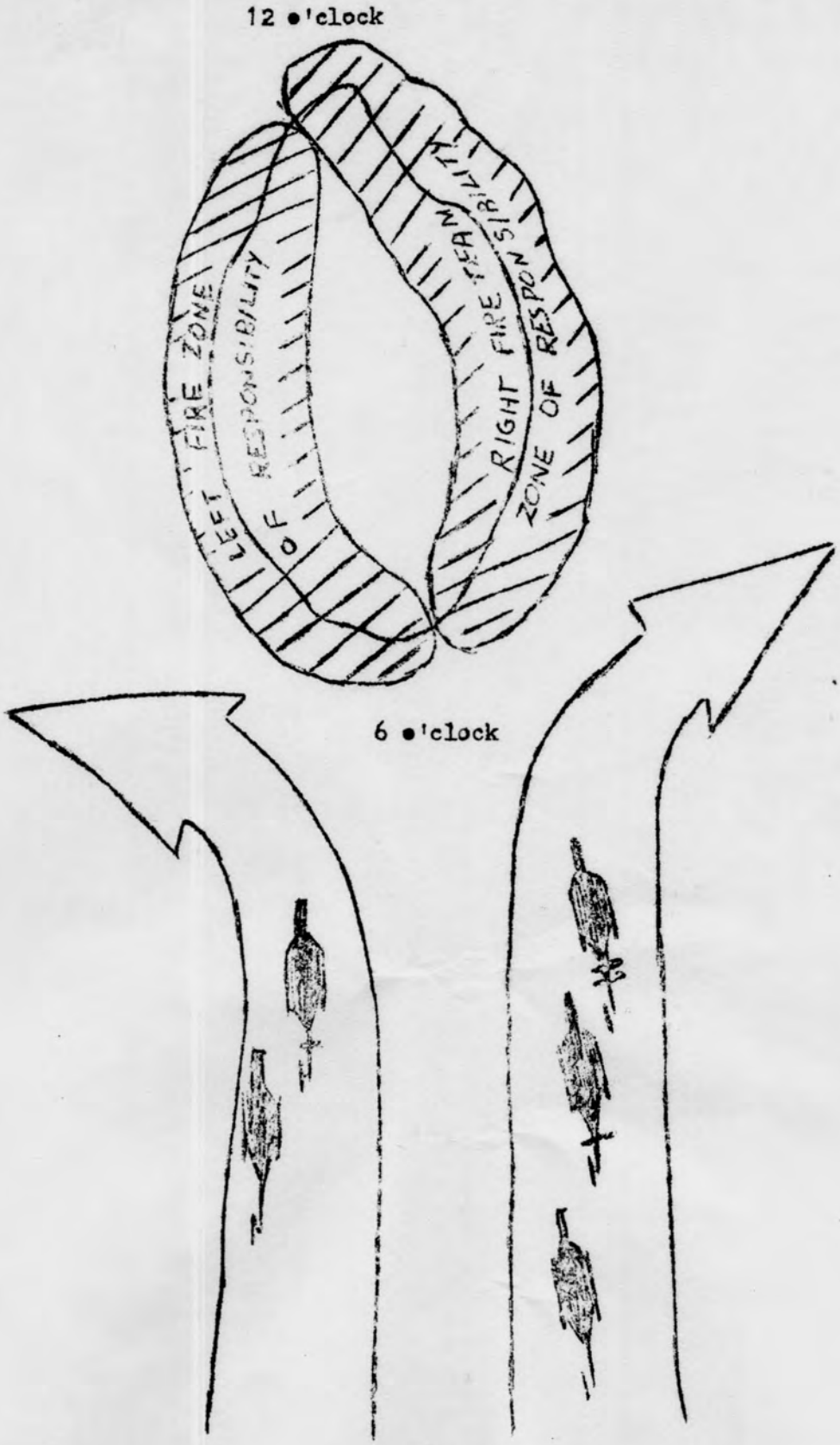


FIGURE 2
THE HASTY PRESTRIKE

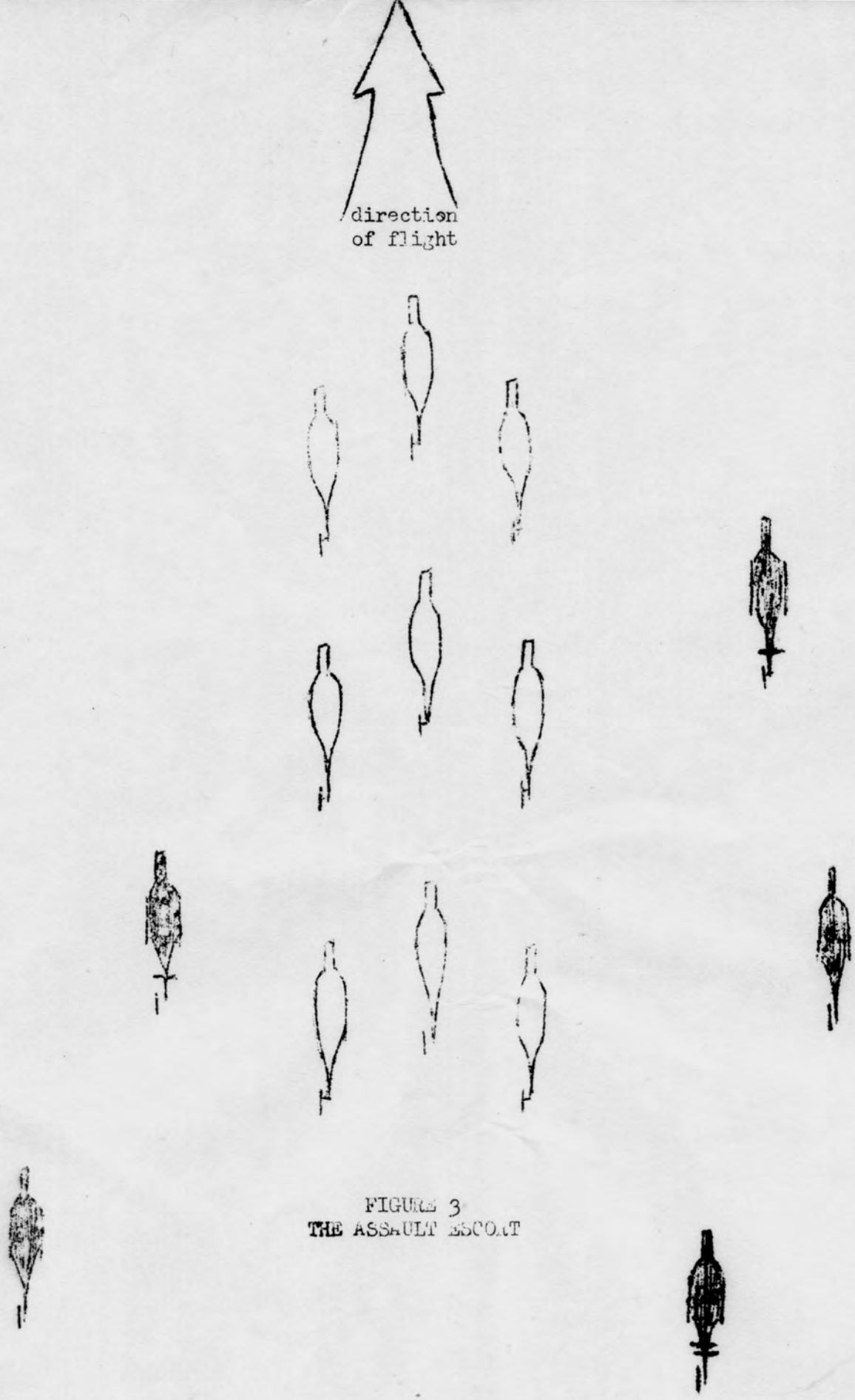
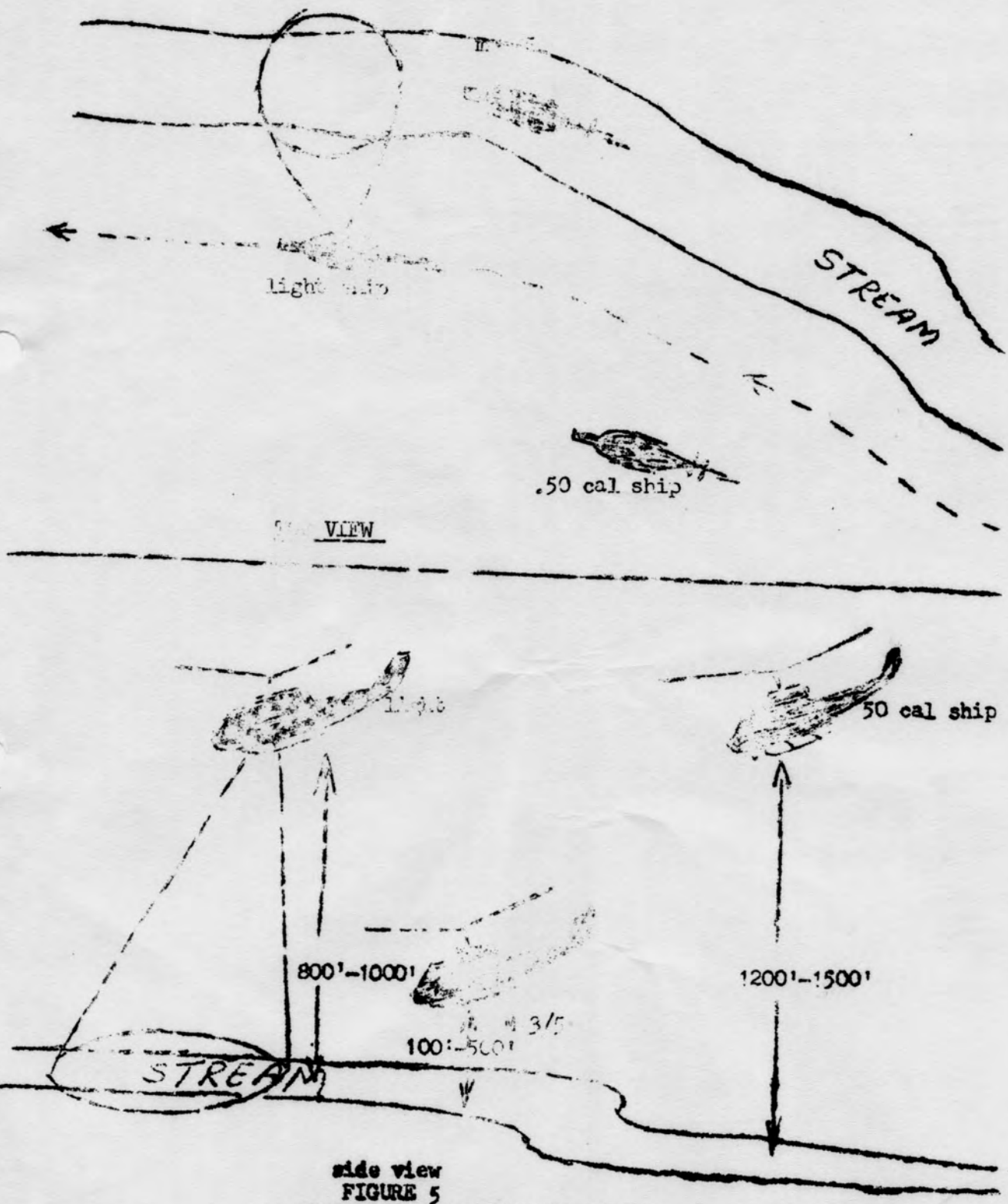


FIGURE 3
THE ASSAULT ESCORT

TOP VIEW

SIDE VIEW

FIGURE 4
SINGLE SHIP ESCORT



side view
FIGURE 5
LIGHTNING BUG RECON FORMATION

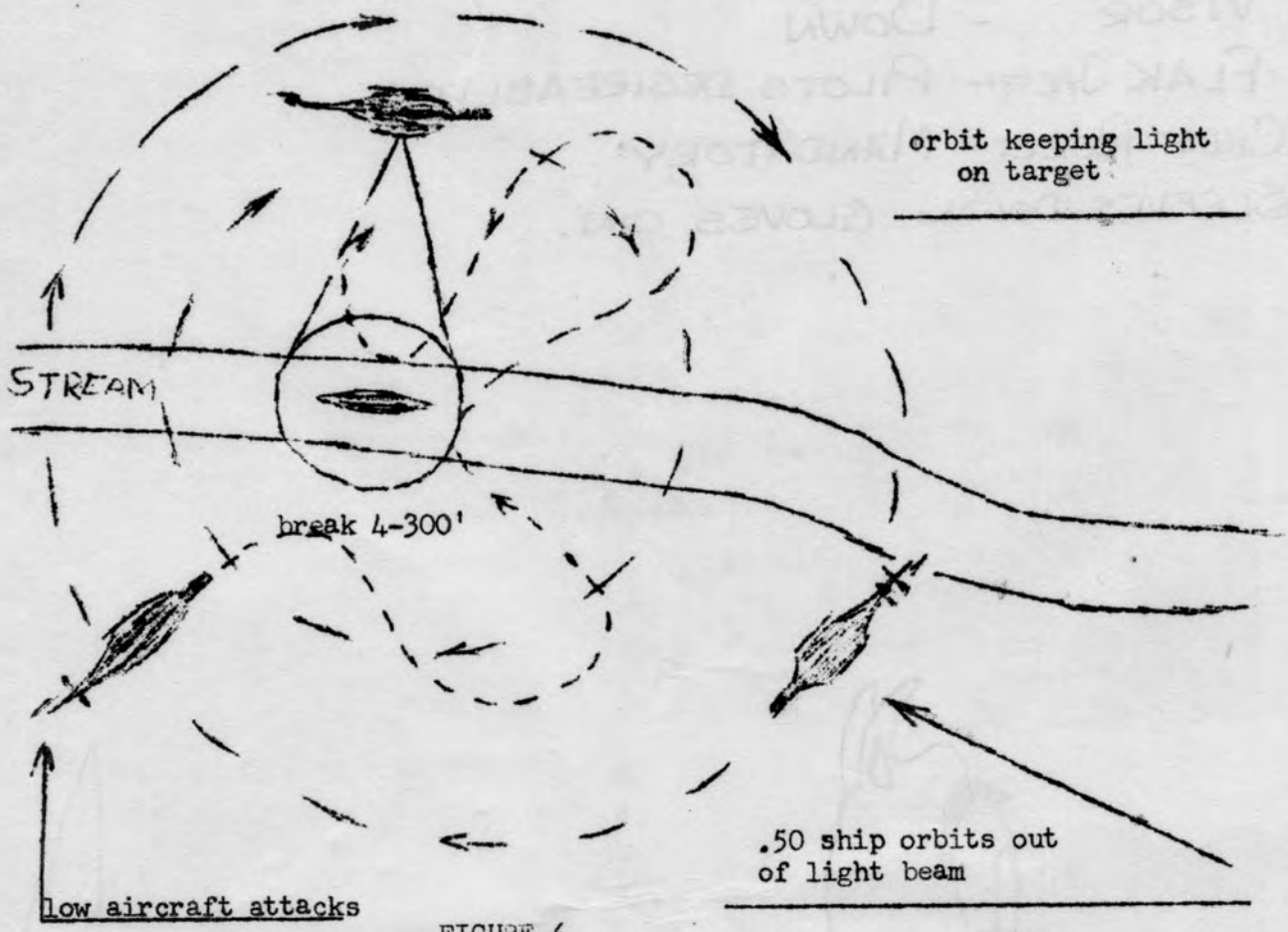
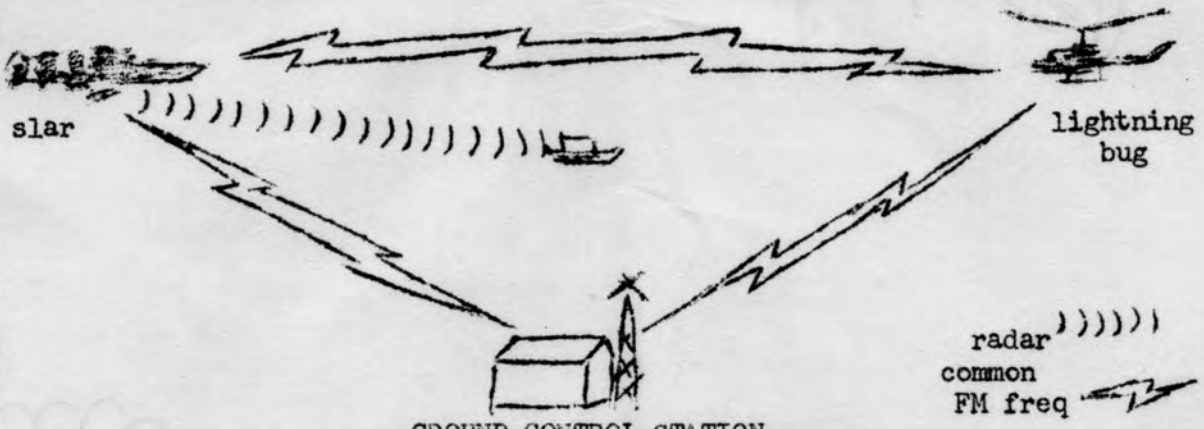


FIGURE 6
LIGHTNING BUG ATTACK
DIAGRAM



GROUND CONTROL STATION
FIGURE 7

COMMUNICATION DIAGRAM FOR LIGHTNING BUG

EP's

FORCETRIM - ON
HARNESS - LOCKED
VISOR - DOWN
FLAK JACKET - PILOTS DESIREABLITY
CHEST PROTECT - MANDATORY
SLEEVES DOWN GLOVES ON.

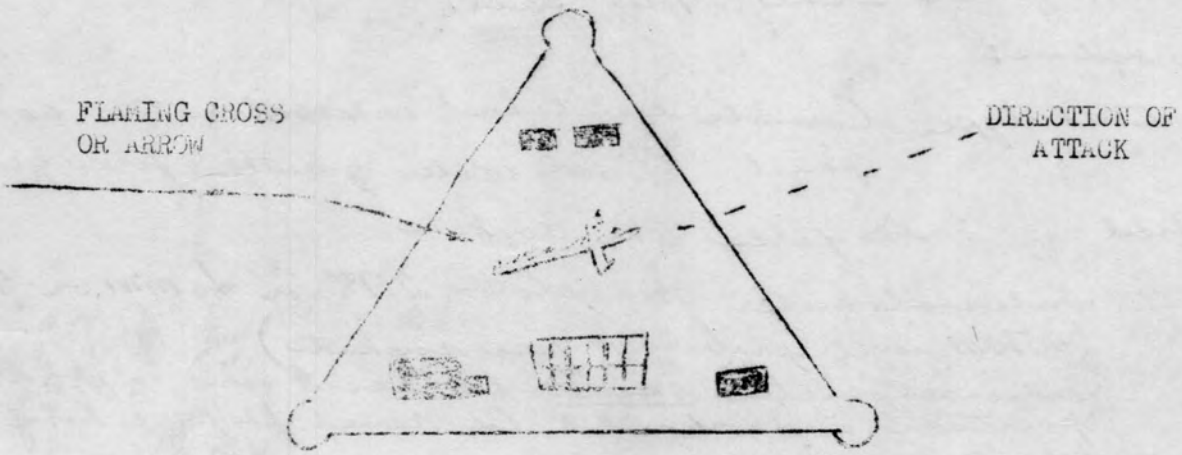


FIGURE 8

TYPICAL ARVN COMPOUND AS SEEN FROM THE AIR SHOWING ARROW METHOD OF DESIGNATING MAIN ENEMY CONCENTRATION.

M-16 systems

4 M-60 Flex; hyd. op, elec fired APPROX 1800 RDS PER GUN 2 MINUTES 820 intrs 550-600 RPM

7 shot rocket pod 2500 intrs. LOADED FROM THE FRONT.

9°↑ 66°↓ ←70° →12° MED. POD: MAKE SURE GRD NOSING PLUGS ARE REMOVED. 2

No reticle unless sys is armed. MANU. REQ. NO ARMING PROCEDURES.

✓ rocket sight on ZERO w/out fail.

2 types systems:

Manufactured type: Console switches intervalometer control panel. Rt. side center ⌀ button fires guns.

Modified: ⌀ fired the rockets

Intervalometer selector - 2.75 or 40mm or 7.62 (40MM will probably fire rockets)

Intervalometer must be reset in SAFE position and should be reset before ldg for re-arming.

Control box (same for all sys) Gun selector switch: UPPER - LOWER - ALL (ARMED - HOT, SAFE - SAFE, OFF - COLD)

JETTISON. MODIFIED SYS - CABLES W/ LOOPS

MFG MANUAL JETTISON - EXTERNAL STORES HANDLE. (MANUFACTURED)

M-3 SYSTEM (HOG)

4/8 2.75 ROCKETS + DOOR GUNS. LOADED FROM REAR

4/ BANKS OF 4 ON EACH SIDE. JETTISONED ELECTRICALLY ONLY.

PREFLIGHT: ✓✓ GUNS FOR MOUNTING
✓ ELEC & HYD CONNECTIONS
✓ ROCKET POD CONNECTION
✓ AMMO FOR FREEDOM
✓ CHUTE ATTACHMENT
✓ ROCKET CONTACTS FOR SLIGHT MOVEMENT
✓ WAR HEADS FOR TIGHTNESS
✓ INTERVALOMETER ON "L"

LOAD DOUBLE LINK INTO GUN.

DE-ARMING: PULL CIRCUIT BRKRS. (M-16 RESET FIRST)
TELL CM SYS "COLD"