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# Guide for Helicopter Tactics and Techniques for use with Reconnaissance Teams



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**LESSONS LEARNED NO. 83**

**Headquarters**

**United States Military Assistance Command,**

**Vietnam, APO 96222**

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UNITED STATES MILITARY ASSISTANCE COMMAND, VIETNAM  
APO SAN FRANCISCO 96222

MACJ3-052

12 October 1970

SUBJECT: Vietnam Lessons Learned No. 83: Guide for Helicopter  
Tactics and Techniques for Use with Reconnaissance Teams

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FOREWORD

The information contained in this Lessons Learned summary was gathered first hand from numerous Free World Force units in the Republic of Vietnam that had inserted and extracted reconnaissance teams. From this material a Guide for Helicopter Tactics and Techniques for Use with Reconnaissance Teams was prepared.

This Guide, designed primarily to assist US and allied units involved in training helicopter crews, contains many lessons learned under combat conditions. This Guide is a flexible instrument which will allow instructors to use it in any manner that best suits their own particular needs and purposes.

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## TABLE OF CONTENTS

CHAPTER	PAGES
1. Introduction.....	1
2. Mission and Organization.....	3
3. Visual Reconnaissance.....	9
4. Briefings.....	12
5. Insertions.....	17
6. Extractions.....	25
7. Gunship Tactics .....	34
8. Glossary.....	39

## LIST OF PHOTOGRAPHS

1. CH 3.....	2
2. CH 42.....	4
3. Helicopter Team (AH-1G Huey Cobra Gunship, UH-1D Slick.....	6
4. Extraction Ladder Ready for Pickup.....	26
5. McGuire Rig.....	28
6. Securing the Stabo Harness.....	30
7. Stabo Harness as Worn for Extraction.....	32

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## CHAPTER 1

## INTRODUCTION

1-1 (U) PURPOSE AND SCOPE

This Lessons Learned summary discusses tactics and operational techniques for infiltrating and exfiltrating a long range reconnaissance team (RT) by helicopter. It provides guidance to the various armed forces component commanders and staffs responsible for organizing, training, and employing helicopter elements in support of RT insertion/extraction missions.

1-2 (U) CALL FOR USER COMMENTS

a. The information contained in this lessons learned summary came from numerous units engaged in combat operations within Southeast Asia. Although these units have effectively employed the techniques and procedures described, aircrews will continue to develop and test new ideas and tactics. The enemy can and will exploit those units that fail to change or modify their techniques. The effectiveness of an organization depends largely upon the ingenuity of its members and their willingness to explore new procedures to meet the situations that arise from the unit's mission and capabilities, and from the enemy's countertactics.

b. The users of this manual are encouraged to submit recommended changes, comments or new techniques to: Headquarters, Military Assistance Command, Vietnam, APO San Francisco 96222, ATTN: J3-052.

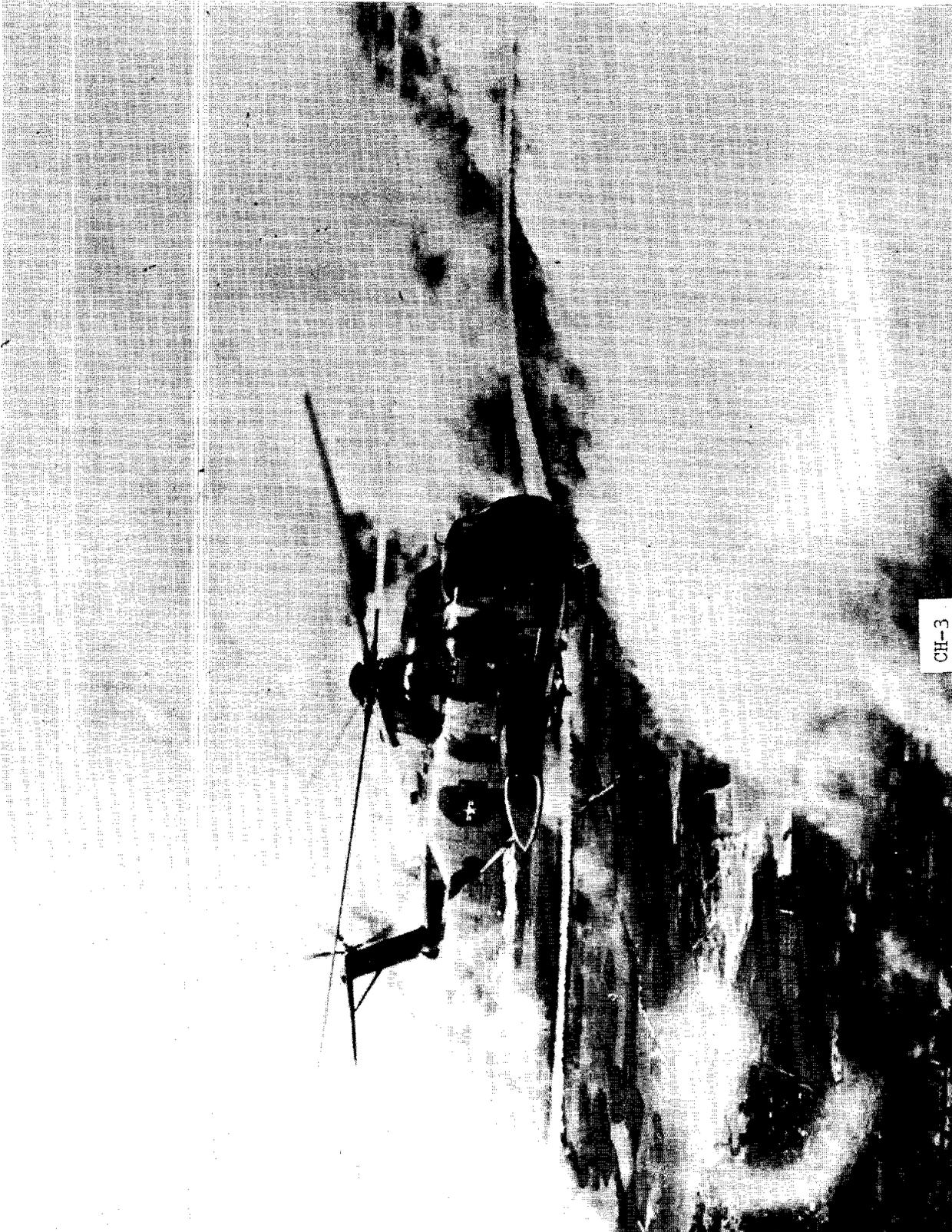
1-3 (C) RULES OF ENGAGEMENT

a. Every crew member must have a complete understanding and appreciation of established Rules of Engagement (ROE) for a given area of operations. The Joint Commander promulgates the ROE, based on Joint Chiefs of Staff directives. These ROE insure that all military effort goes solely toward support of United States national objectives.

b. Though ROE occasionally limit combat operations, the very nature of reconnaissance missions dictates certain restrictions in the use of weapons. These ROE substantiate United States efforts to clearly identify and destroy only the enemy and only the enemy's facilities, and to preclude international incidents.

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CHAPTER 2

MISSION AND ORGANIZATION

2-1 (C) MISSION

a. The mission of helicopter elements in the support of reconnaissance and interdiction operations is to insert various sized teams by the use of unconventional and specialized helicopter tactics into selected sites with maximum secrecy and to extract them either upon completion of their mission, upon compromise, or if they come under attack by a numerically superior enemy force. A unit performing unconventional helicopter operations may support a number of Special Forces Detachments, Long Range Reconnaissance Patrols (LRRP) or ranger operations, simultaneously at remote outposts.

b. Like conventional combat assault missions, unconventional helicopter operations require an Air Mission Commander (AMC). These missions also require armed helicopter teams, as an organic supporting element, at every separate Forward Operational Base (FOB). Besides the specialized techniques and tactics involved, logistical, maintenance, and general support responsibilities become more complex and demanding upon the helicopter unit.

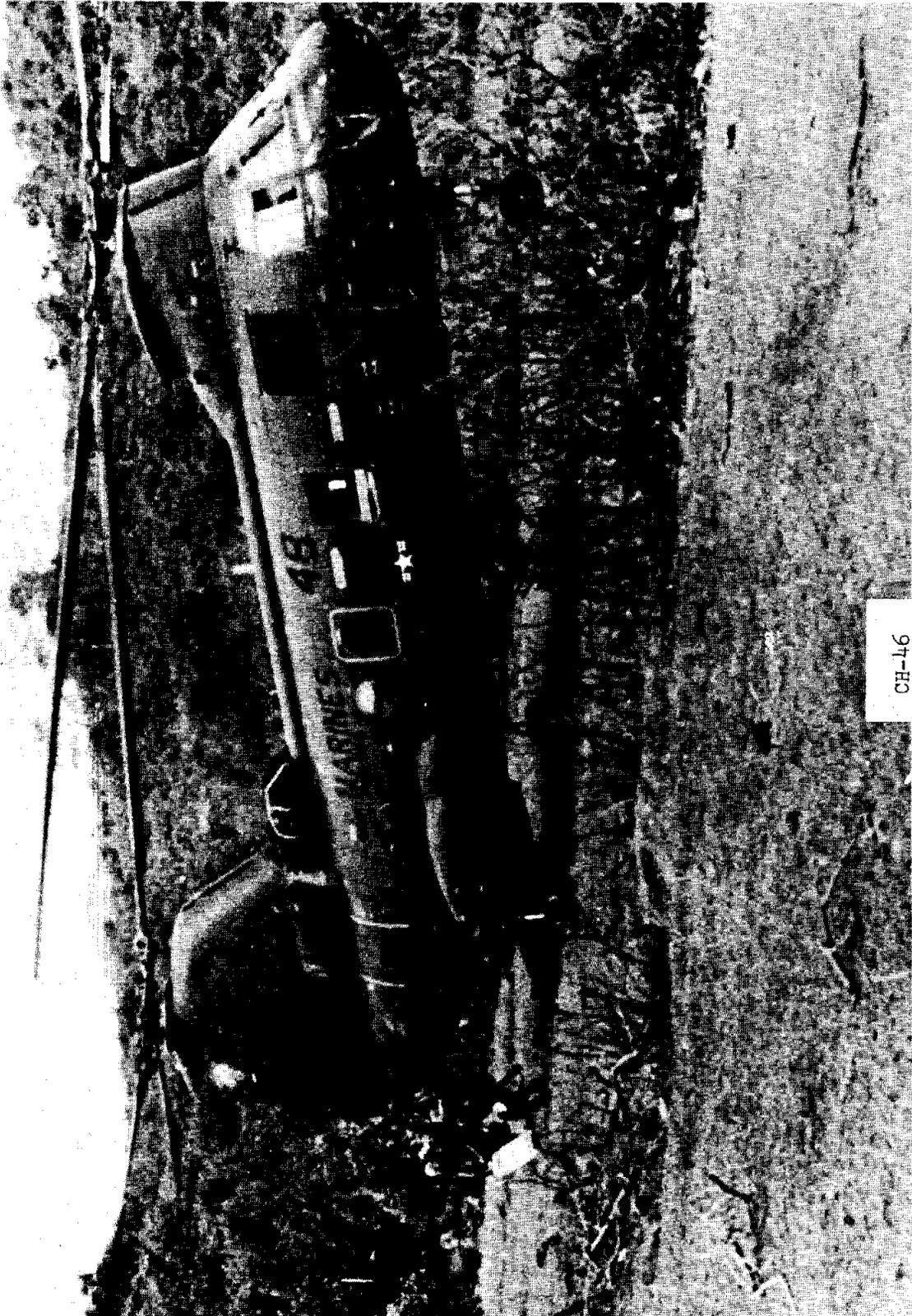
2-2 (C) PERSONNEL

a. Air Mission Commander: Normally, the senior helicopter pilot acts in the capacity of Air Mission Commander. He commands all helicopter personnel and equipment, both organic and attached, and he assumes responsibility for accomplishing the assigned aviation missions. He advises the Ground Mission Commander (senior launch officer) on aerial tactics, aircraft utilization, and factors affecting the successful conduct of the air mission. The Air Mission Commander retains the final authority to abort any phase of a mission if, in his judgment, he believes he cannot complete the operation within the safety parameters appropriate to the ground combat situation.

b. Ground Mission Commander: The Ground Mission Commander (senior launch officer) exercises control of all the elements involved in the operation. He makes all decisions, except those outlined in paragraph a above.

c. Operations Officer: Normally, the second most senior helicopter pilot acts as the Operations Officer, who schedules crew members and aircraft to conduct the mission. He supervises the collection of forms

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and records and the dissemination of required daily or special reports and monitors the requirement for courier and/or administrative support missions.

d. Operations Dispatcher: The Operations Dispatcher assists in scheduling aircraft and crews, transmits reports as required and effects close coordination with the supported tactical operations center (TOC).

e. Intelligence Officer: The Intelligence Officer collects and disseminates intelligence on a daily basis to insure maximum dissemination to activities and agencies requiring this information.

f. Armed Helicopter Element Commander: The Armed Helicopter Element Commander controls all armed helicopter activities in support of each mission, and supports local area defense. The Ground Mission Commander must approve all missions originating from other than the assigned operation.

g. Maintenance Support: The helicopter unit maintenance officer/NCO has the responsibility for effective aircraft maintenance and must continually keep the AMC advised of the changing maintenance status. An adequate number of aircraft personnel, and a communications electronics specialist, should accompany the support element to the FOB.

### 2-3 (C) AIRCRAFT

a. The optimum number of aircraft for specialized missions varies, depending upon the scope and estimated duration of each operation. Nevertheless, one should consider the following criteria in order to provide adequate backup and protection for air and ground elements and sufficient aircraft to accomplish each mission at remote launch sites:

(1) As the number of teams simultaneously deployed in the area of operations (AO) increases, the need for reserve aircraft to handle emergency extractions increases.

(2) Each launch site requires a minimum of four armed escort helicopters. Besides providing continuous coverage for all planned insertions and extractions, these air assets provide the capability of covering two or more teams requesting emergency extraction and/or making contact at the same time.

b. When US Air Force helicopter gunships (UH-1P) provide air support, the aircraft (A/C) commander of the lead helicopter troop carrier (slick) controls the helicopters while in flight and a Forward Air Controller

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HELICOPTER TEAM

TOP PHOTO: AH-1G HUEY COBRA GUNSHIP

BOTTOM PHOTO: UH-1D SLICK

6

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(FAC) controls the insertion/extraction. During the insertion/extraction, the element leader controls each gunship element within the flight. When US Army or USMC helicopter assets provide air support, a command and control (C&C) helicopter may control the insertion/extraction and may also serve as a backup recovery helicopter. For insertion/extraction, the air assets are normally organized in the following manner:

(1) Six-Man Teams:

(a) Three slicks: One slick inserts and/or extracts the team. The second slick serves as a recovery helicopter and the third slick carries a medic plus a spare radio, and serves as a second recovery aircraft. If a team sustains injuries, the medical helicopter extracts the team. The AMC designates one of the helicopters as slick lead. Normally, a mission experienced Instructor Pilot flies this aircraft.

(b) Four gunships: One two-aircraft element flies the infiltration and extraction. The other element stands by to relieve the first element in case of low fuel and/or armament expenditures. Gunship elements maintain a continuous alert during daylight hours for teams in the field.

(2) Twelve-Man Teams:

(a) Four slicks: Two slicks transport six men each; one serves as recovery and the fourth carries a medic and acts as a second recovery helicopter.

(b) Four gunships: Same as described for a six-man team.

(3) Thirty-two Man Exploitation Force:

(a) Five slicks: Three helicopters carry six men; two carry seven men.

(b) Four gunships: Same as described for a six-man team.

c. CH-3, CH-46, CH-53 and CH-34 helicopters may be utilized as slicks in the same manner as UH-1H and UH-1P helicopters. The number employed depends upon team size as indicated in paragraph b (1), (2) and (3), the range to the target and operational altitude necessary enroute.

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d. A-1E or similar type fixed wing aircraft may be used as gunship support for insertions and extractions, in lieu of/or in addition to helicopter gunships. The escort element of fixed wing aircraft, normally four (4), rendezvous with the helicopters in flight and moves to the landing zone. Most fixed wing aircraft do not have the close-in accuracy of the helicopter gunship but do have a long station time with a large quantity of varied ordnance.

2-4 (C) TEAMWORK

The successful accomplishment of each mission depends upon teamwork among all air and ground force personnel. Air crews must know, understand, and appreciate the responsibilities of members on the ground in order to provide instantaneous support when required. Likewise, the people on the ground must appreciate the requirements, procedures, and hazards inherent in specialized helicopter techniques and tactics. A close liaison between air and ground elements can establish mutual understanding and teamwork so essential to mission success in special operations.

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CHAPTER 3

VISUAL RECONNAISSANCE

3-1 (C) GENERAL

a. The visual reconnaissance (VR) provides key members of the operation with a general knowledge of the area, orients them with the 1:50,000 scale map and gives them an opportunity to look over the route from the FOB to the target. Area familiarity is the most important factor in accurately plotting selected Landing Zones (LZ). During the VR, the FAC must spend enough time in the target area to become absolutely familiar with it; he must memorize terrain features in order to brief the insert pilot, since the ground environment often dictates tactics.

b. When proper authority has designated a specific infiltration area and identified a target date, the team leader, Ground Mission Commander, and FAC (or Air Mission Commander of the C&C helicopter) conduct the VR; they do so either in the C&C helicopter or, more frequently, in the FAC or observation plane, usually flying between 1500 and 3000 feet above ground. Because the FAC and team leader must brief aircrews prior to insertion, they must accomplish a comprehensive VR. The pilot of the insert helicopter may also go along to assist in selecting the LZ because he knows the size of his particular helicopter and where he can land it safely.

3-2 (C) SINGLE OVERFLIGHT

The ideal VR consists of a single look, usually an overflight of the target area to pick the primary and alternate LZ's (normally two), and to plot them on the map. This method usually deceives the enemy and appears as just another FAC aircraft passing by. Unfortunately, a single look sometimes does not prove sufficient and other methods, such as photography (see paragraph 3-5) must be used to positively identify either the LZ, or the specific detail of the area. The LZ's (primary and alternates) must satisfy the RT leader, and have adequate clearance to accommodate the insert helicopter. The FAC plots the LZ on the 1:50,000 scale map, a meticulous assignment since the plot must be absolutely accurate (within 100 meters). Because he possesses the most extensive knowledge of the area, the FAC normally plots the LZ. The FAC must also know the helicopter's capabilities and limitations since he will direct the insert pilot to the LZ.

3-3 (C) LOW LEVEL OVERFLIGHT

a. VR personnel may overlook many suitable LZ's at first glance

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since selection of the LZ requires practice and training on the part of both the FAC and the team leader. Any area will suffice that permits entry of the helicopter to a spot near enough to the ground so that troops can safely exit. Large clearings in heavily canopied jungle require extensive search and caution since the enemy watch them closely; they also boobytrap clearings that lend themselves to helicopter operations. If the FAC and the team leader conclude that they must use a large clearing, the helicopter should land at a spot close to the tree line, which would allow the team to reach the jungle quickly, before the enemy can start his pursuit.

b. The FAC and RT leader must know the vegetation in the area so they do not select LZ's in bamboo thickets which may look like suitable clearings from the air. Many times these thickets actually reach 200 feet in height. River banks generally prove unacceptable too, since they provide an excellent observation point and a well traveled line of communication (LOC) route for the enemy's jungle habitat. The FAC and RT leader should also avoid burned areas; the rotor wash stirs debris, reducing the team's visibility and attracting the attention of any enemy troops present in the vicinity.

c. The FAC and RT leader may have to locate the LZ along a small stream or even a bomb crater, even though the aircraft may be unable to touchdown; the team can leave the aircraft by rappelling or by rope ladders. But in most cases the FAC and RT leader should find it more advantageous to use an alternate LZ, since use of rope ladders causes delay in departing the LZ. Rappelling an RT into the jungle may also compromise the team's location, its security, the helicopter's immediate extract capability, and increase the team member's chances for injury.

### 3-5 (C) PHOTOGRAPHY

During the VR, the FAC and RT leader accomplish any photographic work needed to successfully complete the mission. Black and white three-dimensional (stereo pair) photographs are the most effective, and also much easier to work with in the field. Color slides, using telephoto lenses from 1000 to 2000 feet, have proven effective, but thirty-five millimeter color slides do not show terrain slope or LZ obstructions. Consequently, the pilot does not know what he will find in the LZ until he actually attempts to land. Viewing black and white oblique photos through three-dimensional equipment shows obstructions and terrain slopes.

### 3-6 (C) PLANNING THE INSERT

a. During the VR, members of the party consider the general plan and the tactics they will employ for the insert, e.g., the approach route, general hazards, and so forth. At the completion of the VR

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flight, a debriefing NCO, normally from S-2, debriefs the VR participants. They discuss the forthcoming mission in detail, establish their approach and departure routes, and specify the insertion tactics, i.e., type of approach and deception techniques. At this time the FAC and team leader reach absolute agreement on the LZ coordinates. The team leader also presents any special requests or ideas so that the group can finalize the insertion plan.

b. Weather may influence tactics and the original insert plan; consequently the FAC and team leader must keep their insert plan flexible, considering alternate tactics that allow last minute changes. In planning the insert, they must also consider the time of day, i.e., VR time compared to actual insert time, as sun angles and shadows can distort visual recognition, create problems in locating the LZ, and disrupt the insert itself. A successful VR is the most important prerequisite for an effective insert; without thorough reconnaissance, positive insertion may be jeopardized.

3-7 (C) CONSIDER EMERGENCY EXTRACTION

The VR personnel must think out and plan their course of action if the team leader or any surviving team member should call for an emergency extraction. For this contingency, they must consider rendezvous points, orbit points, and possible extraction areas along the RT's route of movement.

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CHAPTER 4

BRIEFINGS

4-1 (C) GENERAL

a. Normally, the helicopter pilots, team leader, and FAC's hold a joint briefing supervised by ground mission commander (senior launch officer) to establish take-off times, checkpoints, orbit points, final approach azimuth, flight formation, and emergency extraction plans, to include communications procedures. Operational personnel should allow enough time before take-off to permit additional study of maps and reconnaissance photographs.

b. This joint briefing should go into enough detail so that every man involved knows exactly what he does during the entire operation. This is the time to resolve all questions and doubts about individual tasks. Once the RT is in the air, moving toward the target, there is no time for second guessing. The S-3 re-examines LZ's and radio frequencies, confirms troop lift requirements, and reviews insertion techniques.

4-2 (C) BRIEFING CHECKLISTS

a. The aviation portion of the briefing must cover the following items:

- (1) Route from launch site to release point.
- (2) Coordinates of release point.
- (3) Estimated time enroute from launch site to release point.
- (4) Coordinates of check points.
- (5) Route from release point to primary LZ.
- (6) Coordinates of primary LZ.
- (7) Estimated time enroute from release point to primary LZ.
- (8) Route from release point to alternate LZ.
- (9) Coordinates of alternate LZ.
- (10) Estimated time enroute from release point to alternate LZ.

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(11) Route from primary to alternate LZ.

b. The ground portion of the briefing must include the following items:

- (1) Enemy situation in the LZ area.
- (2) Friendly situation and/or adjacent units in the area.
- (3) Last time an RT penetrated the area.
- (4) Conditions under which the last RT extracted (emergency, under fire, or routine).
- (5) Number of times the LZ has been used in last week, month, six months.
- (6) Preparation for the LZ.
- (7) Whether the RT will accept LZ preparations prior to insert (if not, air mission commander must concur).
- (8) Alternate LZ's.
- (9) RT intentions, route of travel from LZ and ultimate destination.
- (10) Emergency LZ's along reconnaissance route.
- (11) Frequencies (for artillery clearance, TAC air, command and control).
- (12) Employment of CS (tear gas) to break contact and continue the mission or to break contact for extraction.
- (13) Panels -- Signals.
- (14) Strobe light patterns.
- (15) Pyrotechnics (flares, use of smoke-identification).
- (16) Radio procedures on use of compass points, vice clock codes for directions.
- (17) Hoist pick-up-aircraft capabilities.
- (18) Signal for A/C debarkation.
- (19) Team leader or assistant remain in helo after landing in case of requirement for emergency extraction.

- (20) RT firing from helo (suppressive fire -- danger to rotor blades).
- (21) Size of LZ required for pick-up, and clearing obstructions.
- (22) Pay load of helo -- possible requirement to break reconnaissance team tactically or to maintain integrity in case two or more aircraft are required for extraction.
- (23) Base of fire for emergency pick-up.
- (24) Report of duds from recent air strikes.
- (25) Coordinates of gunship orbit point.
- (26) Coordinates of recovery helicopter orbit point.
- (27) Total estimated time enroute.
- (28) Hand signal techniques to be used.
- (29) Call sign of FAC.
- (30) Call sign of Airborne Command Post.
- (31) Call sign of team.
- (32) Locations, frequencies, call signs of medical treatment facilities, supporting artillery, and tactical air support.
- (33) Known or suspected enemy locations.
- (34) Known friendly locations.
- (35) Weather.
- (36) On station time \_\_\_\_\_ engine start  
time \_\_\_\_\_ --T/O: C&C \_\_\_\_\_ Primary lift \_\_\_\_\_  
FAC \_\_\_\_\_ Guns \_\_\_\_\_

4-3 (C) COMMUNICATIONS PROCEDURES

a. Operations personnel must employ radio communications judiciously, using visual signals in preference to radio communication whenever possible. Normally, this type of mission requires

two radio nets: a Helicopter Control Net and a Mission Control Net. In current practice, the helicopters and other air assets monitor the Helicopter Control Net, a UHF net. Operations personnel use it to direct and control the aircraft enroute to, during, and after insertion or extraction of an RT. The mission commander acts as the net control station.

b. The Mission Control Net, normally FM, links the launch officer, FAC, Mission Commanders, and RT. The mission launch site normally acts as the net control station; however, during insertion and extraction operations, the Airborne Mission Commander or Launch Officer may assume control of the net. During insertion/extraction, basic communications procedure dictates that only the FAC or Air Mission Commander do the talking on either the helicopter control net or the mission control net. This procedure eliminates the cause of much confusion during insertion/extraction. The Launch Site Commander or his representative can communicate his desires through the aircraft intercom, since he can monitor both nets.

c. Operations personnel must pay particular attention to the details of communications security (COMSEC) in helicopter operations that involve the movement of long range RT's. All personnel must adhere precisely to the following COMSEC rules:

- (1) Use secure voice communications when available.
- (2) Carefully adhere to correct radio procedure and use codes and cyphers as prescribed when using non-secure radio nets.
- (3) Make radio transmissions only when absolutely necessary.
- (4) Make all transmissions as brief as possible.

#### 4-4 (C) IDENTIFICATION SIGNALS

a. During daylight hours, RT's most commonly use the mirror to reflect a signal to the aircraft, provided sufficient sunlight is available. A marking panel is also effective and easy to verify if: the RT is not in an open area, it may be necessary to position the panels on top of a tree. The RT normally uses smoke grenades only if contact is imminent or already initiated. Some teams do not use smoke unless calling for gun-runs or unless they suffer a complete loss of communications; they feel that smoke pinpoints their position. The RT marks its position and if suppressive fire becomes necessary, directs gunships and/or tactical air (TAC Air) by giving azimuth and distance from the smoke to the enemy position. If the team attempts to move to an extraction LZ, they may drop smoke periodically to permit air strikes to their rear

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as they move on a particular azimuth. Yellow smoke has proven most effective in jungle, delta, and forest areas. The RT may use pen flares, handheld flares, and so forth as a last resort during daylight hours, if all other methods prove ineffective or if they determine that smoke, with its lingering effect, might jeopardize the mission.

b. During darkness the strobe light provides a very effective signal and the RT can easily direct extract aircraft, armed helicopters, and/or close air support aircraft with this device. Pen flares and handheld flares are also effective for initial identification but the enemy can easily detect them. By using a flashlight (preferably red lenses) aimed through an M-79 grenade launcher barrel, the RT has a system for guiding the aircraft to a pinpoint landing in their exact location. The RT may also use flashlights (cigarette lighters have also been employed) to successfully communicate with the air crews.

c. Prior to take off the insert pilot and the RT members must agree explicitly on signals for certain actions, e.g., "Are you ready to exit the aircraft?", "Get out now," "I need emergency extraction," and so forth.

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### CHAPTER 5

#### INSERTIONS

##### 5-1 (C) BASIC PRINCIPLES

a. Tactics and pilot techniques are limited only by the insert pilot's imagination and the aircraft's limitations. However, in order to accomplish his objective, i.e., get the team on the ground safely and undetected, the basic principles enumerated in paragraphs b through g below, have been developed through experience and apply to virtually all insertions.

b. The pilot must avoid flying in the altitude between 100 and 1500 feet above the terrain in the insert area, since his vulnerability increases dramatically at any height above 100 feet and any height below 1500 feet. Flying above 1500 feet reduces the ground fire hazard, yet enables the pilot to discern terrain features and to descend quickly into the LZ.

c. The pilot descends as rapidly as possible without going into full autorotation.

d. The pilot makes maximum use of terrain features to conceal the helicopter.

e. The pilot maintains an airspeed between 80 and 100 knots reducing speed only when approaching the LZ.

f. The pilot makes his final approach short, fast, and on the tree tops. He accomplishes this by a moderate, gradual flare and a reduction of airspeed into the LZ.

g. The pilot makes a slow, vertical liftoff until his aircraft clears all obstacles. The pilot then flies the aircraft at tree top level for a minimum of two kilometers, or at least as far as the terrain permits, then executes a maximum performance climb to altitude. This technique helps to conceal the helicopter departure route, exact insert position, and shield the helicopter from ground fire. The airspeed achieved at tree top level permits the pilot to climb to altitude in minimum time, thus moving him through small arms vulnerability range as quickly as possible.

##### 5-2 (C) ENEMY SECURITY

a. To successfully complete his mission, the insert pilot, as well as other crew members, must understand enemy security procedures

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and the methods he uses to detect the location of an insertion. Prior air activity may dictate the disposition of the enemy's security forces. The enemy uses observers, monitors radio communications, and places booby traps.

b. Landing Zone Watchers: The enemy positions people, local militia or well trained troops, in or near obvious helicopter landing areas. They report the landing by radio, gunshots, or other signalling devices. They usually do not actively resist the insert but track the team and await reinforcements.

c. Sky Watchers: The enemy places people in trees at strategic locations throughout his area of operations to detect, report, and flight-follow aircraft.

d. Radio Monitoring: Personnel participating in the insertion must assume that the enemy monitors and understands all radio transmissions; this includes FM, UHF, and VHF. Operations personnel must encode radio transmissions and keep them to a minimum.

e. Landing Zone Booby Traps: In many cases the enemy booby traps obvious LZ's, using mines, punji stakes, trip charges, and other anti-landing devices.

#### 5-3 (C) GENERAL PROCEDURES

a. The C&C helicopter departs the launch site approximately five minutes before the recovery and armed helicopters so that the Air Mission Commander has an opportunity to check weather conditions, to pinpoint the rendezvous point (RP) and LZ, and to take a final look at terrain features and obstacles. The C&C helicopter must stay as far away from the route of flight as possible during the weather check and terrain analysis.

b. The insert and recovery helicopters, followed by the light fire team (two gunships), depart the launch site in a nonstandard flight formation. They leave individually and rendezvous at the first check point. Formations normally follow some variation of the standard staggered trail or echelon formation.

c. The insert and recovery helicopters, followed by the light fire team, proceed to the RP, located from three to five kilometers from the LZ. Normally this formation flies at a safe altitude, in excess of 1500 feet above ground, unless the enemy occupies high terrain which may dominate the area of operations; in this case the formation may find it advantageous to fly at low level from the launch site. The light fire team covers the insert helicopter from the rear during descent. The insert aircraft reports RP, low level, to the Air Mission Commander, then turns to the preplanned heading

for the LZ. At the RP, recovery aircraft proceed at altitude to a predetermined orbit point in an area of from five to ten kilometers from the LZ.

d. If a FAC controls the mission, rather than a C&C helicopter, he starts toward the target area about twenty minutes prior to the launch of the helicopters. With this lead he has time to monitor any enemy activity in the area prior to the arrival of the RT. The enemy is always alert to repetitious actions by the FAC; therefore, during this lead time the FAC should avoid any orbit of the area of intended operation which would compromise the location of insertion/extraction.

e. The Air Mission Commander or the FAC visually identifies the insert aircraft at the RP and vectors him to the LZ, giving changes in headings, distances remaining to the LZ, and speed reductions in order to bring the insert helicopter directly over the LZ at an altitude and at an airspeed which allows minimum termination preparation on the part of the insert aircraft. The C&C helicopter or FAC remains at a distance of approximately one kilometer and to one side of the final approach vector. He keeps the insert aircraft over the area that contains the most intense vegetation, and, if possible, away from all open areas.

f. The insert Aircraft Commander has the final authority to either insert or abort. He must not risk damaging his aircraft on insertion since it might jeopardize the mission, as well as the crew and the reconnaissance team. If he aborts, the launch officer, flying in the C&C helicopter or with the FAC, decides whether to attempt a landing at an alternate LZ. If the launch officer elects to land in an alternate LZ, the Air Mission Commander directs the insert aircraft to the alternate LZ. As the insert aircraft makes its landing into the LZ, the armed helicopters position themselves to provide cover while the RT disembarks from the aircraft.

g. After the RT disembarks, the Air Mission Commander gives the insert aircraft a departure heading and vectors him over the most heavily vegetated areas at low level, until the insert pilot can initiate a safe climb to altitude. The insert aircraft then proceeds along the most suitable route to join the recovery aircraft at their orbit point. If the insert aircraft climbs to altitude immediately upon departing the LZ, the risk of compromising the RT increases greatly.

h. The light fire team does not orbit the LZ, but provides passing protection during the time the insert aircraft is in the LZ. In the event enemy troops fire upon the insert aircraft during landing, the insert pilot usually aborts the insertion and the light fire team

suppresses the hostile area. If the RT lands successfully, the light fire team escorts the insert aircraft to their orbit point.

i. The C&C helicopter moves to an orbit point in the vicinity of the insert while the recovery and armed helicopters orbit. All aircraft normally remain at that location, at a safe altitude, until the RT leader, satisfied that the insertion has not been compromised, notifies the Launch Officer, who then releases all aircraft to return to the launch site.

j. If more than one helicopter must insert into a single LZ, the LZ should be large enough to accommodate both helicopters at the same time. But if conditions prohibit this and more than one helicopter has to use a single LZ, the procedures discussed above apply, with the following modifications. When the first insert aircraft departs the RP at low level, the remaining insert aircraft orbits in the vicinity of the RP at altitude until the Air Mission Commander orders it to descend and proceed inbound from RP to LZ. The light fire team must provide adequate escort into and out of the LZ for each insert helicopter. The Air Mission Commander may use two fire teams, if available, during this particular type insertion.

k. A FAC, normally airborne during all insertions and extractions, directs fighter strikes if necessary.

#### 5-4 (C) HIGH LEVEL TACTICS

For high level tactics the insert pilot maintains altitude until he sights the LZ, then descends in an evasive flight path. The first gunship positions itself so as to pass near the LZ simultaneously with the slick as it begins final descent into the LZ. The insert pilot can either keep the LZ in sight all the way or use a reference for locating the LZ so that he can maintain low level flight during the last 500 to 1000 meters. The reference method obscures the helicopter from enemy personnel located in the vicinity of the LZ, and provides the insert pilot with an element of surprise. The insert pilot flies any position within the insertion flight element, though he obtains better gun coverage over the LZ if the gunships follow in the trail position.

#### 5-5 (C) NORMAL LOW LEVEL TACTICS

Upon reaching the release point the insert helicopter descends to low level, generally five to ten kilometers from the LZ. The FAC, familiar with the landing zone and the area, directs the insert pilot. The insert helicopter may go in unescorted or accompanied by two gunships in trail. Upon exit from the LZ, the insert helicopter

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assumes the number two or number three position in the gunship formation, (depending upon its time in the LZ) providing maximum deception to the insert. The helicopters remain at low level for at least five to ten kilometers after insertion, careful not to fly the exact course of the preceding helicopter.

5-6 (C) FALSE INSERTION TACTICS

a. False insertion either deceives the enemy or forces him to cover a number of possible insertions; this extends his defensive forces and strains his security. The false insert must simulate the actual insert as closely as possible. This requires an identical flight makeup; it also requires false insert personnel to execute their operation simultaneously with the actual insertion and at a location about four kilometers from it. Since a formation of helicopters, flying over enemy occupied territory, inevitably alerts the enemy, the requirement to mislead him about the actual insertion, or at least its actual location, often becomes essential to mission success. False insertion methods include:

- (1) Insert low level, fake high level.
- (2) Insert high level, fake high level.
- (3) Insert helicopter drops into three or more LZ's separated by about one kilometer.
- (4) All aircraft in the formation descend simultaneously from high altitude along with the insert helicopter, starting from a five abreast position.
- (5) All aircraft start in trail formation with the insert aircraft in the number two position. All aircraft cross the LZ with the insert aircraft landing instead of crossing, and then coming out to join the formation in one of the follow-up positions.

b. When using the false insertion, crew members must consider the risk encountered by the false insert aircraft. Faking an insert into an enemy 50 caliber gun position always remains a possibility. Normally, the false insert aircraft does not land; however, the fake must appear totally realistic to enemy personnel on the ground and other higher vantage points.

5-7 (C) QUICK LOOK TACTICS

a. A major problem in numerous target areas is finding a suitable LZ. Wood choppers cut down trees and leave stumps not easily discernible

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from the air. To overcome this problem, the lead gunship descends quickly into the LZ, following the FAC's directions, and checks the area for terrain obstructions and enemy personnel. Many jungle trails, difficult to see from 2000-3000 feet can conceal enemy troops. Using high speed trails, they have sufficient time to maneuver into an ambush position at the LZ clearing. The quick look may enable the helicopters and the RT to avoid an ambush. When the lead aircraft finds the LZ unsatisfactory, he takes command of the flight and searches for a suitable LZ; in this case the FAC flies as observer.

b. When the lead gunship makes its pass into the LZ, the number two gunship orbits at 1500 feet, which allows time for him to roll in and out if the lead gunship needs help. If the lead gunship draws fire, it exits the LZ as quickly as possible. Otherwise, the insert helicopter flies the same orbit behind the number two gunship, so it can roll in when the lead gunship calls. If the enemy, undetected by the lead gunship, allows it to pass in order to fire on the insert helicopter, the number two gunship can roll in and suppress the fire.

5-8 (C) LIMITED AIR ASSETS

a. When scarcity of resources demands conservation of forces; when terrain permits; when crews possess the combat experience; and when enemy activity in the target area is subdued; one aircraft and one light fire team can accomplish the insert. When the aircrews can easily identify the LZ, and when the trees grow so high and dense that they obstruct the enemy's view, the formation can make a near-normal approach to the LZ. After passing the RP, the insert pilot remains at altitude in order to see the LZ and establish an inbound heading. He arrives at treetop level, a thousand meters short of the LZ, at a suitable final approach speed. The light fire team protects the insert aircraft until it departs the LZ, at which time it proceeds to the orbit area, remaining in orbit until released.

b. If air assets are extremely limited, this mission can go without a C&C helicopter; however, the officer responsible for the operation should exercise great caution in running the mission without a C&C aircraft.

5-9 (C) BEST INSERTION TIME

Some units prefer to insert the RT to coincide with prescheduled TAC air support; still others prefer dawn, and yet others dusk. The dusk insertion normally provides an element of surprise, but if the RT is compromised, the probability for a difficult night extraction increases greatly. Usually, the early daylight insertion achieves the same element of surprise, at least in the LZ and its environs, provided the enemy has not concentrated his forces in the area. The last light

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insertion becomes even more critical when the RT has less than platoon strength and when a large number of enemy troops are known to be operating with the AO.

5-10 (C) NIGHT INSERTIONS

a. Night insertions, especially in heavily vegetated areas, present almost insurmountable hardships. It is very difficult, if not impossible, to land in a confined, single aircraft LZ, without the use of helicopter landing lights or flare illumination. Using lights neutralizes a clandestine operation.

b. In open delta areas night insertions are possible and afford the RT a degree of concealment, but the preplanned visual recon and mission briefing become even more critical. The air crews must readily identify the RP and upon reaching it the insert aircraft may not descend to low level. A position report will be given at the RP. Once the C&C helicopter identifies the insert aircraft, the C&C vectors it to the LZ; normally, a straight line azimuth from the RP to the LZ. (Crews should try alternate methods of light identification of the insert ship).

c. If the helicopters make a night insertion of platoon or larger unit, they should follow normal night combat assault procedures: illuminate the LZ area by the use of flares, and employ TAC air, artillery, and armed helicopters to support the insert.

d. Night insertions by rope ladder or rappelling present extremely difficult problems; only as a last resort, and in cases of a tactical emergency, should RT's insert in this manner.

5-11 (C) TACTICAL TABOOS

Operational experience in Southeast Asia has taught the following explicit lessons that apply to insert aircraft tactics.

(1) The insert helicopter never flies tactical missions without an escort. In the event the helicopter pilot loses his escort, he recovers to the closest safe area that does not require him to cross an enemy LOC.

(2) When operating in the vicinity of a known enemy LOC, the insert helicopter always flies a jink (zig-zag) course as high as possible in order to reduce the anti-aircraft threat.

(3) The insert helicopter never orbits at low altitude within range of small arms fire.

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(4) The insert helicopter never makes a second pass over the target at low altitude.

(5) When visually contacting the FAC, the insert helicopter never uses the same rendezvous point, e.g., a bend in a river or a specific hill, on a recurring basis; a rigid pattern encourages the enemy to position anti-aircraft weapons in the rendezvous area.

5-12 (C) MOUNTAINOUS AND CONFINED AREA OPERATIONS

a. The mission of the helicopter often requires operations in mountainous areas and in heavily forested terrain which restricts maneuverability. It is not at all unusual to land in an opening in the jungle requiring a 200 foot vertical descent to the landing area, with minimum main rotor blade and tail rotor clearance. All crew members must be alert and cognizant of the hazards involved: the pilot and co-pilot must clear the aircraft on their particular side, the gunners must clear the sides, tail rotor, and underneath the aircraft. This operation can only be safely accomplished with proper performance and coordination from the entire crew. The gunners on a slick aircraft must be instructed that their primary duty, during the time that the helicopter is descending into the LZ, making the pickup, and ascending back above the trees, is to continually clear the aircraft. Good intercom voice communications are absolutely essential and crew members should practice for precise maneuvering and directing.

b. The primary procedure for confined area operations is to maintain absolute aircraft control and be constantly cognizant of the fact that haste could possible cause an accident. The tail rotor section is the most vulnerable part of the aircraft during confined operations. Striking a tree, stump, or bush with the tail rotor is almost certain to cause disastrous results. The door gunners' attention must focus primarily on this area. Main rotor blade tree strikes are a more common occurrence and cannot always be avoided during confined area operation. It is desirable not to have main rotor blade strikes, but generally the crew completes its mission after such a tree strike. Other than seeing or hearing a rotor strike, the first indication to the pilot of a tree strike is generally an immediate strong vertical vibration.

c. Mountainous operations are not a particular problem. Tactics are generally the same as elsewhere. Attention must be given to performance charts when mountainous operations are anticipated and pilots must be familiar with high altitude characteristics of the aircraft. Higher altitude operation during warm weather causes considerable reduction in power available and the aircraft is more susceptible to settling with power. Precautions should be taken to anticipate these characteristics.

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CHAPTER 6

EXTRACTIONS

6-1 (C) BASIC PROCEDURES

a. Extraction occurs when the RT accomplishes its mission, has been compromised, or contacts the enemy and cannot break contact. When circumstances permit, operations personnel plan extractions in detail, and conduct them in essentially the same manner as infiltrations, though some techniques vary:

(1) The operation normally employs armed helicopters in all instances; they reconnoiter the LZ prior to the arrival of the extraction aircraft.

(2) Armed helicopters circle the LZ since compromise is no longer a concern.

(3) The helicopters establish their orbit point much closer to the LZ for extraction than for insertion.

(4) The helicopters may not have to approach the LZ at tree top level, as required for insert.

b. The flight formation to and from the AO is a very loose combat formation with aircraft flying at different altitudes and in no set pattern. The slicks normally lead, with gunships on either side and behind the slick element. The aircraft remain close enough to provide emergency gun cover and pick-up capability.

c. The LZ selected for a planned extraction normally permits the helicopter to land for pickup. On an emergency extraction, an LZ of opportunity may require using special equipment, such as Stabo rigs, which the team should possess as a part of its equipment or rope/aluminum ladder. If the extract requires the use of special equipment, the operation requires additional extraction helicopters, since a single aircraft normally will be unable to sustain a high hover with a full load. The remaining extraction aircraft must be ready to proceed into the LZ immediately after the preceding helicopter departs; they remain at altitude, observing the operation, until time to approach the LZ. Normal extractions generally occur during daylight hours.

d. Night extractions present greater hazards than daylight extractions, and the risks to aircraft, crews, and the RT increase greatly. To neutralize the hazards as much as possible, and since compromise of the ground element is no longer a problem, operations

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EXTRACTION LADDER READY FOR PICKUP

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personnel illuminate the LZ by all available means.

6-2 (C) NORMAL EXTRACTION PROCEDURES

a. The FAC, normally the first to locate the team upon receiving a radio communication for extraction, determines the location and degree of enemy resistance, directs the gunships to the target area, and obtains close air support when necessary. The FAC calls for launch of the slicks, based upon his estimate of the situation, and the time he estimates for suppressing enemy resistance. He usually launches the gunships first, with the slicks not far behind; the slicks move to an orbit or release point, located in the vicinity of the planned extract.

b. The FAC and the RT leader determine if the team can move to a sitdown LZ; if not, McGuire rigs, Stabo rigs, or rope ladders will be required. The lead slick and extraction pilot must continually monitor progress of the extraction preparations, based on information received from the team on the ground and the gunships covering the team. The slick helicopter never attempts an extraction until the gunships have checked the area. After arriving at the orbit point the FAC calls the gunships to check and secure the LZ. The scheduled extract helicopter flies over the LZ at a safe altitude to permit the pilot to locate the team. This precludes any delay between clearance into the LZ and start of the approach; the extraction pilot must know the team's exact location. He should know what obstacles to expect in the LZ and what terrain features he can use to his advantage during the approach and departure.

c. After the gunships insure that no ground fire exists in the area of the LZ, the slick is cleared for final descent and approach. The slick pilot must advise the gunships of his intended approach direction. He descends rapidly, with a minimum torque setting, and 80 to 100 knots airspeed. He flies an erratic flight path, with the final approach short and near the treetops. This flat, erratic final approach provides maximum protection to the helicopter and does not tip the enemy as to the exact landing area. The gunship pilots can provide excellent guidance to the troop lift helicopter pilot as he approaches the extraction LZ; he should use this information as needed. To save time, the pilot must land or hover as near the team as possible.

d. After the team boards the aircraft, the departure from the LZ is vertical to the tree tops and then close to the treetops, using a moderately zig-zag course. The helicopter pilot should cross ridges at 90 degrees. After a minimum of two kilometers travel away from the LZ, the pilot executes a maximum performance climb to altitude.

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McGUIRE RIG

28

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6-3 (C) EMERGENCY EXTRACTION PROCEDURES

a. RT's may require emergency extraction at any time, day or night. Alert crews have little opportunity for planning or briefing, other than the original contingency planning and briefing which covered possible emergency LZ's. Alert crews must preset their radios on the proper frequencies and be capable of lift off in a matter of minutes, once the RT requests an emergency extraction. Timing is critical throughout the emergency extraction. TAC air should be available to destroy any heavy enemy resistance.

b. Once the RT notifies the launch site TOC that an emergency exists, the C&C helicopter, with the command group aboard; one light fire team; and the FAC proceed to the RT's location, which may or may not be near a sitdown LZ. To determine the best approach and departure path, the air crews must consider several factors. The last known location of the enemy and smoke from heavy ordnance dictate the best direction and type of approach. The helicopters may use the smoke to screen their approach, but it may also obscure their view of the LZ. White phosphorous (WP) smoke is mildly toxic and pilots should avoid flying into it whenever possible. If the RT is in contact, the first light fire team engages the enemy immediately, on direction of the ground element.

c. The extraction and recovery aircraft and second light fire team (if available) normally start engines and monitor the operational net. On command they proceed to the LZ and remain in orbit in order to respond quickly to the situation on the ground. They may find it beneficial to approach from altitude, rather than at treetop level. But if the RT is or has been in contact, the low level approach may offer greater advantages.

d. The gunships must provide adequate security within the LZ before the extraction aircraft lands. If necessary, both light fire teams take up a tactical formation and maneuver in order to provide the suppressive fire required to secure the LZ; normally they place constant rocket, grenade, and minigun fire around the periphery of the LZ as the extraction helicopter approaches, lands, and departs. The slick pilot should avoid flying over known enemy positions and he should use any smoke in the area to cover his position. If the situation requires TAC air and/or artillery strikes prior to extraction, the C&C pilot coordinates these efforts directly with the FAC and supporting artillery unit.

e. The extraction aircraft must be ready to extract the RT as soon as enemy resistance has been broken or subdued. To delay the sequence of events at any point negates all previous suppression efforts, endangers the lives of friendly forces, and creates a

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SECURING THE STABO HARNESS

30

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situation where the extraction must be attempted in the face of increased enemy resistance. On the other hand, inadequate suppression of enemy resistance may result in a downed helicopter, which only compounds the problem.

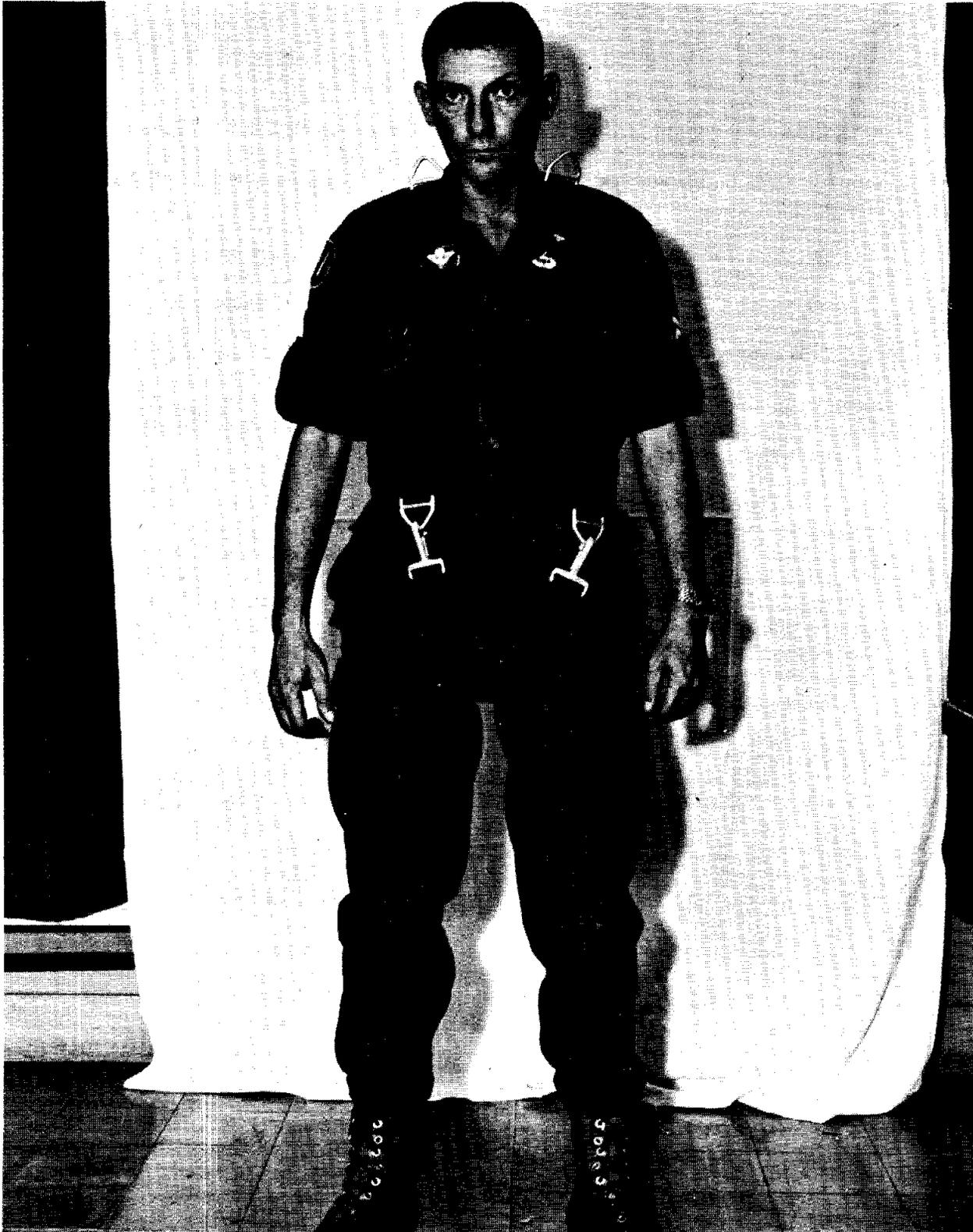
f. The extract pilot must insure that the door gunners do not fire upon friendly forces. As aircraft commander, he controls all fire from the M-60 door mounted guns; the gunners must locate the team before firing. Normally, the pilot does not descend into the LZ if his aircraft is receiving ground fire. Once the aircraft is in the LZ, the pilot must insure that everyone boards the helicopter before it departs. The extract pilot must advise the gunships by radio of his departure from the LZ in order to avoid mid-air collisions with these helicopters circling the LZ.

g. Rope ladder, Stabo, and McGuire rig extractions are more prevalent during emergencies than during normal extractions. One extraction helicopter is normally required for each group of three troops. Each extraction helicopter uses one additional crew member, referred to as a belly man, usually a trained medic organic to the ground unit. He assists the pilot in positioning his helicopter over the extraction point, advises him as to the location of obstacles, and assists personnel as they ascend the rope ladder or position themselves in the McGuire or Stabo rig.

h. For possible night operations, launch site personnel must rig the C&C helicopter with flares prior to darkness. During night emergency extraction, the C&C helicopter provides flare illumination during the conduct of the entire operation. If the extraction takes longer than approximately thirty minutes, the launch site TOC should dispatch a second helicopter with a flare load. If not available, the FAC should request an Air Force flare ship immediately.

i. Emergency extractions are often necessary during adverse weather conditions or inherent low ceiling and reduced visibility. On occasion it might be necessary for the C&C helicopter, flying low level because of reduced ceilings, to locate the imperiled ground element by utilizing its FM radio, with homing capability, to home to the transmissions being emitted by the ground element FM field radio. It may be necessary to initiate armed helicopter strikes at low altitudes if the ground forces are in contact. After adequate suppressive fire has been placed upon the enemy, either the C&C helicopter or one of the armed helicopters may be required to return and lead the extraction aircraft into the area, via low level flight, to the LZ. The nondirectional beacon at the launch site can be effectively used to guide aircraft to and from the LZ during adverse weather conditions.

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STABO HARNESS AS WORN FOR EXTRACTION

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6-4 (C) OPERATING IN A CS ENVIRONMENT

All RT members carry the M-17 Protective Mask and CS grenades. Helicopter pilots should equip themselves with a protective mask to insure their capability to operate in a CS environment, since RT's often employ CS to break contact and evade the enemy. CS gas can be dispensed in a number of different methods: hand grenades, rifle grenades, tactical CS launcher, E8 and tactical CS canister cluster, B159/158. TAC air (CBU 19A) and artillery can also deliver CS for RT's seriously threatened by enemy troops.

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CHAPTER 7

GUNSHIP TACTICS

7-1 (C) GENERAL

a. The tactics described below evolved from combat experiences in SEA, primarily with the UH-1P helicopter. This gunship, primarily defensive, normally can suppress enemy fire during infiltrations and exfiltrations, but is not a substitute for tactical air power. Air crews may use the system in an offensive capacity only against soft targets, such as buildings, troop concentrations, watercraft, and foxhole or slit trench emplacements.

b. When a team contacts enemy forces the gunships must provide fire very close to the team and around the edges of the LZ. In order to do this the gunships usually fly at low altitude, but need not under all circumstances. The pintle mounted minigun can provide effective support to within about fifty meters of a team from an altitude above small arms range (approximately 1500 feet), an advantageous method of providing initial suppressive fire prior to the gunships' descent to low level. The gunships must react quickly to prevent the enemy from concentrating his forces.

c. Experience has shown that in cases where the gunships cannot suppress the enemy fire, the best course of action is to move the team to a different LZ, while the gunships cover their backtrail with fire. Because of limited fuel and ammo, a second gunship element should be able to reach the area of operations within 15-20 minutes in order to relieve the first gunship element. The pintle mounted minigun provides increased flexibility which permits a great variety of tactics. All maneuvers are based on elements consisting of two armed helicopters.

d. These gunship tactics resulted from experience on the mission and did not evolve from any fixed doctrine. The gunship capabilities/limitations, environment, and the mission limit the possible tactics to a fairly narrow envelope. Within this envelope, gunship pilots improvised and adapted tactics to fit the situation. A gunship element leader must possess a solid understanding of the fundamental tactics envelope and be able to quickly devise a suitable tactic for each specific exfiltration and infiltration.

7-2 (C) INFILTRATION.

a. During infiltration the slick flies at low level (on the trees) and the two gunships follow at 500-1000 meters. The flight begins its

low level approach between 5 - 10 kilometers from the LZ and after the insert it remains at low level for several kilometers beyond the LZ. This procedure minimizes the enemy's ability to detect the flight. The gunships accompany the slick to provide deception and quick reaction.

b. Following the slick: For a fast LZ, where the lift helicopter must enter and exit the LZ as quickly as possible, the gunships fly 500 meters behind the slick. For a slow LZ, the spacing is increased to not more than 1000 meters. To evade ground fire from people alerted by the preceding A/C, gunships never fly in trail. Gunships normally fly a path off-set, left or right, with occasional switching to the other side.

c. At the LZ: Gunships may employ a wide variety of tactics at the LZ. To avoid pinpointing the LZ for the enemy, aircraft should avoid orbiting the LZ. Despite the hazards of orbiting, a very slow LZ may sometimes require the aircraft to orbit the LZ in order to provide continuous coverage for the slick. The gunships may fly directly over the LZ, sometimes at reduced airspeed. This tactic works best for a fast LZ. For a slow LZ, the lead gunship may fly a wide arc around the LZ. If the slick receives ground fire in the LZ, the lead gun can break over the LZ and provide suppressive fire. When the slick exits the LZ, the lead gun can turn away from the LZ to avoid hitting the slick. Another tactic for a slow LZ is an S turn; aircraft accomplish this by passing the LZ to one side, reversing and flying over the LZ, then reversing to the exit heading. The gun leader, slick pilot, and gun wingman must pre-brief their tactics to avoid confusion over the LZ.

d. Exiting the LZ and Pop Maneuvers: When the slick calls "coming out of the LZ," the gunships turn to the pre-briefed exit heading. The gunship crews must take care in order to avoid a mid-air collision with the slick when it comes out of the LZ. All insert helicopters fly low level for at least two kilometers as they exit the LZ. To move back to altitude pilots execute the pop-up maneuver by establishing topping power and making turns during the climb to reduce vulnerability to small arms fire.

e. While orbiting at altitude waiting for a team "OK," the gunship element may follow the slicks or set up an independent orbit. When the visibility is poor, the gunship element normally follows the slicks to reduce the possibility of a mid-air collision and simplify navigational problems.

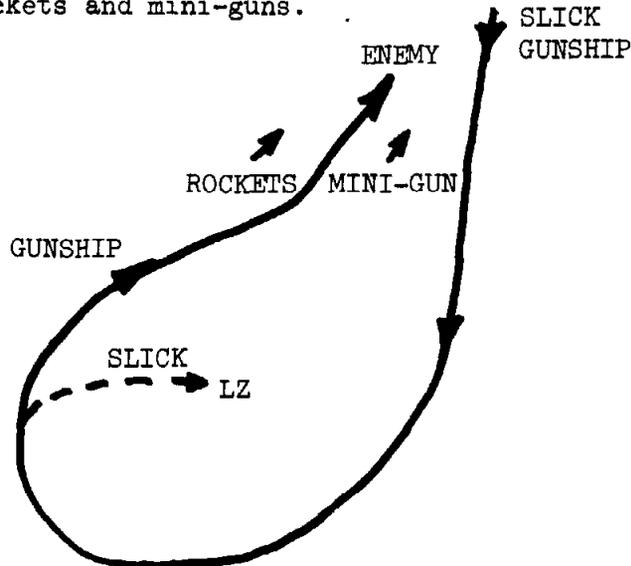
#### 7-3 (C) EXFILTRATION

a. While standing alert at the launch site, the gunship leaders must be prepared to scramble and navigate to a team in trouble.

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Normally, the FAC is at the location before the gunships and slicks arrive. Normally the gunships fly at a lower altitude than the slicks to reduce the possibility of a mid-air collision. When both gunship crews locate the team, they descend to treetop level to set up their firing patterns.

b. Descent from Altitude: The descent from altitude plays an important part of gunship tactics. Usually, the gunships make a tear-drop type descent, keeping the team in sight at all times and reaching the treetop altitude just prior to the LZ. If the team is in contact, the gunships will attempt to suppress enemy fire on their descent, an effective tactic which keeps the enemy under continuous ordnance delivery. The lead gunship turns away from the enemy after completing its first mini-gun pass to clear the area for the second gunship's rocket pass. The illustration is a typical descent to the LZ using both rockets and mini-guns.



c. Gunship Patterns: Several General rules for gunship patterns follow:

(1) Fly either directly over the team or between the team and the enemy.

(2) Never put a mini-gunner in a position where he can hit the team.

(3) If the LZ is hard to see in the turns, have the team pop smoke to avoid being forced to climb in the turn to keep the LZ in sight. Mini-gunners help the pilots keep the LZ in sight during turns.

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- (4) Avoid flying over the same terrain continuously if possible.
- (5) Keep the airspeed over 60 knots in the turns.
- (6) Leader sets the pattern, wingman keeps proper spacing.
- (7) Do not give the command to fire unless mini-gunners have smoke, or panel in sight.
- (8) Keep the wingman advised of the type of pattern to be used.
- (9) The most common gunship patterns are figure 8, dogbone, cloverleaf and circle:

Figure 8: Used when the enemy is in one direction from the team.

Dogbone: Same as figure 8 except all turns are away from the direction of the enemy.

Cloverleaf: Good pattern when the team is surrounded and desires 360° coverage.

Circle: Used when the enemy is in one direction from the team and one mini-gun is malfunctioning.

Random: Often the terrain and position of the enemy does not lend itself to a symmetrical pattern, so the leader sets up a pattern conforming to the situation.

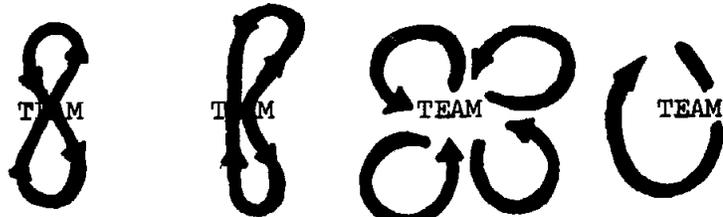


FIGURE 8      DOGBONE      CLOVERLEAF      CIRCLE

d. In order to make maximum use of gunship capabilities and to keep the enemy as confused and off-balance as possible, gunships employ both rockets and mini-guns. If continuous rockets and mini-gun passes fail to suppress enemy fire, the A/C should pull up and deliver a short-range rocket burst, then resume mini-gun passes, and scramble the second gunship element.

e. When the gunships have completely suppressed enemy ground fire, they advise the FAC to bring down the slick. The gunships make some

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firing passes while the slick descends and firing passes over the slick when it is in the LZ. The gunships provide effective coverage for the slick if one gunship follows the slick in-trail into the LZ, making a firing pass over the slick from 6 o'clock to 12 o'clock as the slick descends into the LZ. After the slick has picked up the team, aircraft exit the area and pop-up in the direction of the FAC in a similar manner to an exit after an insertion.

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38

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GLOSSARY OF ABBREVIATIONS AND TERMS

A/C - Aircraft  
AMC - Air Mission Commander  
A/O - Area of Operations  
C&C - Command and Control  
COMSEC - Communications Security  
CS - Tear Gas Grenade  
FAC - Forward Air Controller  
FOB - Forward Operational Base  
LOC - Line of Communication  
LRRP - Long Range Reconnaissance Patrol  
LZ - Landing Zone  
Release Point - A geographic point, easily recognizable from the air, where a flight arrives in proper formation and then proceeds to a designated area under less centralized control. (Not to be confused with Rendezvous Point or RP)  
ROE - Rules of Engagement  
RP - Rendezvous Point or Orbit Point - A geographic point, easily recognizable from the air and in close proximity to the LZ, where aircraft orbit pending instructions from the FAC or C&C helicopter.  
RT - Reconnaissance Team  
Slick - Helicopter Troop Carrier  
TAC AIR - Tactical Air  
TOC - Tactical Operations Center  
VR - Visual Reconnaissance  
WP - White Phosphorous

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Sr Adv out to and including  
Bn and Subsector)  
1 - Ea SA, I, II, III, IV &  
V ALC  
1 - 4th PSYOP Gp  
10 - 5th SFG  
1 - 5th SFG (CLD-SAIG)  
8 - CO 459 Sig Bn  
2 - NRDU-V  
5 - COMRIVPATFLOT  
6 - COMCOSRON ONE  
7 - COMRIVSTRIKEGRU  
1 - DPTSEC (Ft Devens)  
7 - NAVLEDMAC  
1 - CO, UDT ELEVEN  
1 - CO, UDT TWELVE  
1 - CO, UDT THIRTEEN  
2 - 821st GSPS (Safeside)  
2 - 3 Cmbt Spt Gp (BSP)  
2 - 12 Cmbt Spt Gp (BSP)  
2 - 31 Cmbt Spt Gp (BSP)  
2 - 35 Cmbt Spt Gp (BSP)  
2 - 37 Cmbt Spt Gp (BSP)  
2 - 366 Cmbt Spt Gp (BSP)  
2 - 377 Cmbt Spt Gp (BSP)  
2 - 632 Cmbt Spt Gp (BSP)  
2 - 633 Cmbt Spt Gp (BSP)  
15 - JGS, J3  
1 - JGS, J5  
10 - CMD  
10 - JGS, Central Tng Comd  
2 - FWMAO  
12 - FWMAO (AFV)  
5 - FWMAO (NZV Force)  
2 - FWMAO (MACROC-V)  
41 - FWMAO (ROK-V)  
30 - FWMAO (RTFV)  
3 - CDR, ROCMAGV  
5 - CINCPAC  
5 - CINCUSARPAC  
10 - CG, USARHAW  
1 - CG, Tripler AMC

Incl 2

1

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1 - COMNAVSPECWARGRUPAC  
3 - COMPHIBPAC  
6 - CINCPACAF (1 to DMWPE)  
1 - CO, 7AF/13AF (DSP)  
2 - CG, 3d AD (DO)  
60 - Chief, JUSMAGTHIA  
5 - Comdt, USARPAC Intel Sch  
2 - CG, 8th US Army  
12 - USARKOREA  
2 - USASA AHS, VA.  
1 - COM 354 TFW  
2 - COMUSJAPAN  
2 - CG, USARJ  
2 - 39th Air Div  
10 - CHMAAGCHINA  
15 - Chief, JUSMAGPHIL  
2 - CHMILTAGINDONESIA  
15 - COMUSMACTHAI  
5 - CG, USARSUPTHAI  
2 - Chief, ARPA-RDFU (THAI)  
6 - USMILADREP, SEATO  
2 - USARMA, LAOS  
2 - CHMEDTBURMA  
10 - Chairman, JCS  
40 - DIA (DIACO-3)  
1 - DIA (DIAAP-10A2)  
20 - SACSA  
10 - OSD, ARPA  
5 - Defense Document Center  
10 - Vietnam Tng Center (Foreign Service Institute)  
10 - CofSA  
10 - ACSI, DA  
5 - DCSPOS, DA  
10 - DA, ACofS, FOR  
5 - Chief, R&D, DA  
1 - ACTIV Ln Off, ACSFOR, DA  
5 - CNO  
5 - CSAE  
4 - HQ USAF (AFISP-S)  
10 - CMC  
2 - COMDT, NWC  
2 - COMDT, ICAF  
5 - COMDT, AFSC  
3 - CG, USAMC  
15 - CG, USACDC  
2 - CG, USACDCEC  
2 - CO, Jungle Survival Sch (Clark AFB)  
1 - USACDC, MP Agency  
3 - CO, USA Lim War Lab  
5 - CG, USCONARC  
2 - CG, First Army  
2 - CG, Third Army  
2 - CG, Fourth Army  
5 - CG, USAIMA (Ft Bragg)  
2 - CG, Sixth Army  
5 - CG, III Corps  
6 - CG, XVIII Abn Corps Arty  
5 - CG, 1st Armd Div  
5 - CG, 2d Armd Div  
5 - CG, 5th Mech Div  
8 - CG, 24th Inf Div  
15 - CG, 82nd Abn Div  
5 - COMDT, USAWC  
6 - COMDT, USACGSC (1 Mil Review)  
3 - Supt, USMA  
2 - USAAC (Ft Rucker)  
1 - COMDT, USAAD Sch  
5 - COMDT, USAAMS  
5 - COMDT, USAARMS  
5 - COMDT, USAAVNS  
2 - COMDT, USACA Sch  
2 - CO, USA Cbt Surv Sch  
2 - COMDT, USACMLCS  
2 - USA FTC (Ft Rucker)  
5 - USAIC (Ft Benning)  
5 - COMDT, USAINTS  
5 - COMDT, PMG Sch  
2 - COMDT, USAQMS  
2 - COMDT, USA Sig Sch  
6 - COMDT, USASMA (Ft Bragg)  
2 - COMDT, USA Trans Sch  
5 - USA S/TC (Ft Gordon)  
5 - USA S/TC (Ft McClellan)  
5 - USATC (Ft Benning)  
5 - USATC (Ft Bliss)  
5 - USATC (Ft Bragg)  
5 - USATC (Ft Campbell)  
5 - USATC (Ft Dix)  
3 - USATC (Ft Jackson)  
5 - USATC (Ft Knox)  
5 - USATC (Ft Lewis)  
6 - USATC (Ft Ord)  
5 - USATC (Ft Polk)  
5 - USATC (Ft L. Wood)  
2 - COMDT, USAES

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3 - Chairman, JTCG/ME (APG)  
2 - Pres, Naval War College  
1 - Supt, USNPGS  
2 - COMDT, USN Amph Sch  
2 - CO, NAVPHIBSCOL, CORO  
1 - CO, BOATSUPPU ONE  
1 - CO, Beach Jumper UNIT ONE  
1 - CO, Beach Jumper UNIT TWO  
1 - CO, BSU-TWO  
1 - CO, UDT TWENTY ONE  
1 - CO, UDT TWENTY TWO  
3 - CO, Seal Tm 1  
3 - CO, Seal Tm 2  
2 - CO, Naval Inshore Ops Tng Cen  
1 - PAC Msl Range  
1 - CO, Naval Wpns Cen  
1 - COM NAV Const Bn  
2 - Supt, USAFA  
1 - 463 TAC Airlift Wg  
1 - Aero Systems Div (ASBEE-10)  
2 - AU Library  
5 - Dept of Air Police Tng  
3 - Hq Aero Sys Div (AFSC)  
3 - Hq For Tech Div, AFSC  
1 - Air Tng Comd (ATOPT-S)  
1 - Dir, Special Air Warfare Sch  
10 - 479th Tac Ftr Wg  
1 - 3636 Cmbt Crew Tng Gp (CCT-OT)  
2 - Armt Dev & Test Cen (ADFS)  
2 - Fld Tng Det (TDBAS-2)  
1 - General Research Corp  
2 - CG, Marine Corps Base, Cp Pendleton  
2 - CG, Marine Corps Base, Cp Lejeune  
2 - CG, Marine Corps Recruit Depot, San Diego  
2 - CH, Marine Corps Recruit Depot, Parris Island  
5 - CG, FMF, LANT  
5 - CG, FMF, PAC  
1 - CO, Landing Force Tng Comd, Pac  
1 - COMPHIBTRAPAC  
2 - CG, Marine Corps Dev & Ed Comd  
8 - CINCAL  
14 - CG, USARAL  
6 - CINCLANT  
5 - CINCLANTFLT  
3 - COMPHIBLANT  
3 - COMPHIBTRALANT  
1 - COMNAVSPECWARGRULANT  
1 - CINCEUR  
10 - CINCUSAREUR  
2 - CG, 7th US Army  
2 - CINCSTRIKE  
4 - HQ USAFSTRIKE  
2 - CINC SOUTH  
15 - US ARMY FORCES, SOUTHCOM  
2 - USA School of Americas  
2 - COMDT, USA Jungle Warfare  
2 - 432 Cmbt Spt Gp (BSP)  
150 - CG, XXIV  
1 - 388 Cmbt Spt Gp (BSP) 70

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## MACV LESSONS LEARNED INDEX

<u>NUMBER</u>	<u>DATE</u>	<u>SUBJECT</u>
1	30 Mar 62	Heliborne Operation Cai Ngay, An Xuyen Province
2	30 Mar 62	Airmobile Operation in I Corp
3	11 Apr 62	Operation JUNGLE JIM
4	11 Apr 62	Ranger Task Force Operation in Vinh Binh Sector
5	11 Apr 62	Multi-Battalion Operation in Northern Tay Ninh Province
6	11 Apr 62	Operations in Phuoc Thanh Sector to Relocate Civilians
7	18 Apr 62	Operation DAN TIEN VIII
8	23 Apr 62	Operation CA CHEP
9	27 Apr 62	Operation in Kien Hoa Sector
10	1 May 62	VC Ambush-Trung Lap, Binh Duong Province
11	5 May 62	Operation TIGER HUNT
12	10 May 62	Operation RAINDROP
13	16 May 62	Operation NGUYEN HUE
14	Undated	Operation SON CA
15	15 Jun 62	Ambush Techniques
16	19 Jun 62	Review of Lessons Learned 1 - 15
17	25 Jun 62	Techniques Dealing with Airmobile Assaults
18	24 Jul 62	Tips and Combat Experiences
19	31 Jul 62	Operation SUNRISE

Incl 3

1

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20	27 Aug 62	Indiscriminate Use of Firepower
21	28 Aug 62	Ambush Techniques
22	8 Sep 62	Operations of US Army Helicopters
23	5 Oct 62	Operation BINH TAY
24	13 Nov 62	Airmobile Raids Against Superior Forces
25	17 Dec 62	Search Techniques
26	18 Jan 63	M113 Operations
27	28 Feb 63	Ambushes
28	18 Apr 63	Guidelines for Advisors
29	17 May 63	Ambush in BINH CHANH
30	17 Aug 63	Psywar and Civic Action Operations
31	27 Sep 63	Artillery Organization & Employment in Counterinsurgency
32	19 Oct 63	Eagle Flight Operations
33	29 Oct 63	Utilization of Military Dogs
34	30 Nov 63	Railway Security
35	10 Jan 64	Clear and Hold Operations
36	4 Feb 64	Free and Maneuver
37	10 Feb 64	Vehicle Convoy Organization and Control
38	12 Mar 64	Area Saturation Operation
39	11 Mar 64	Ambush Operations
40	23 Mar 64	Corps Psywar/CA Operations Center
41	28 Jul 64	Operations of Seabee Technical Assistance Teams
42	7 Oct 64	VC Employment of Land Mines

# UNCLASSIFIED

43	22 Dec 64	Combat Tips I
44	23 Jan 65	Elimination of Viet Cong Infrastructure
45	12 Feb 65	Viet Cong Tunnels
46	3 Mar 65	Recent Operations
47	30 Mar 65	River Assault Group Operations
48	7 Apr 65	Combat Tips II
49	13 Apr 65	Operation HOAI AN
50	13 Apr 65	Naval Conduct of Amphibious Operations
51	24 Apr 65	Operational Employment of Riot Control Munitions
52	22 Nov 65	Operational Employment of the Mity Mite Portable Blower
53	29 Sep 66	Viet Cong Improvised Explosive Mines and Booby Traps
54	27 Jan 66	The Battle of Ky Phu
55	15 Mar 66	The Battle of Annihilation
56	18 Apr 66	Operations Against Tunnel Complexes
57	25 May 66	Pursuit
58	20 Jun 66	Operation HAPPY VALLEY
59	13 Jul 66	Employment of Image Intensification
60	5 Oct 66	Defense Against Mortar/Recoilless Rifle Attacks
61	27 Jan 67	Salient Lessons Learned
62	11 Mar 67	Salient Lessons Learned
63	25 Apr 67	Search and Rescue Operations
64	15 Sep 67	Imitative Communications Deception

# UNCLASSIFIED

65	20 Oct 67	Population and Resources Control
66	10 Nov 67	Countermeasures for 102mm, 122mm and 140mm Rockets
67	4 Apr 68	Defense
68	20 Jul 68	Viet Cong Base Camps and Supply Caches
69	10 Sep 68	Analysis of Enemy Positions at Khe Sanh and Evaluation of the Effectiveness of Weapons Systems Against Enemy Fortifications
70	17 Oct 68	Friendly Casualties from Friendly Fires
71	13 Mar 69	Countermeasures Against Standoff Attacks
72	16 Nov 68	Aerospace Rescue and Recovery in South Vietnam
73	20 Nov 68	Defeat of VC Infrastructure
74	15 Sep 69	Accidental Herbicide Damage
75	20 Jan 70	Cordon and Search Operations
76	22 Nov 69	Vietnamization
77	20 May 70	Fire Support Coordination
78	17 Feb 70	Action at Long Khot
79	8 Mar 70	Enemy Exploitation of Allied Tactical Communications
80	29 Jun 70	US Combat Forces in Support of Pacification
81	9 Jul 70	RF/PF Outposts
82	To Be Printed	Cambodia Operations
83	To Be Printed	Helicopter Tactics and Techniques for Use with Reconnaissance Teams

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## MACV COMBAT EXPERIENCES INDEX

<u>NUMBER</u>	<u>DATE</u>	<u>SUBJECTS</u>
1-69	6 Jun 69	Defense Against Sapper Attacks; Sniper Training and Employment; Small Unit Operations.
2-69	29 Jul 69	Tactical Cover and Deception (C & D) in Counterinsurgency Operations.
3-69	7 Sep 69	Task Force Remagen; Experiences with Enemy B-40 and B-41 Rockets; Naval Forces Operations; Bridge Security Against Underwater Sapper Attack.
4-69	3 Nov 69	Bunker Busting/Land Clearing; Sapper Actions of North Vietnam Communists; FAC Operations; KBAR/VAMPIRE concept; Anti-Rocket Program.
5-69	5 Jan 70	Viet Cong Attack on Regional Force Outpost; Pacification of Quang Dien District.
6-69	15 Jan 70	"To Build, Not to Destroy..." Air Ambush, Surveillance Task Force.
1-70	1 Apr 70	Tactical Cover and Deception.
2-70	To Be Printed	Fire Support Base Henderson; Fire Support Base Schroeder; Territorial Security at Quang Tri.

Incl 4

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