TACTICAL REFERENCE HANDBOOK

FOR

AIR CAVALRY SQUADRON

DISTRIBUTED BY

DEPARTMENT OF TACTICS

USAAVNS

1 July 1968

PREFACE

This Tactical Reference Handbook was developed and implemented by the 1st Air Cavalry Squadron. The information contained herein is based on the extensive evolution and development of the Air Cavalry concept by the 3rd Squadron, 17th Cavalry during the 2-year testing phase of the 11th Air Assault Division. The validity of this handbook has been proven during 3 years of continuous combat by the 1st Squadron, 9th Cavalry in the Republic of Vietnam. It has been a valuable asset to the squadron's operation, particularly in the orientation of new personnel.

After 2 years of combat, the 1/9th Cavalry commander added two sections to this handbook. The first section, "Lessons Learned," is a combination of major points learned in a counterinsurgency environment and traditional cavalry techniques important enough to be reemphasized. The second section, "Commander's Comments," are salient points worthy of being emphasized to new troop and platoon commanders.

This latest revision is in keeping with the latest equipment employed by the Air Cavalry Squadron. Although, this tactical reference was evolved by a divisional Air Cavalry Squadron, it is equally applicable for use by separate Air Cavalry Squadrons.

Since the Air Cavalry Squadron remains organized under a test TO&E, there will be numerous deviations in this handbook from the TO&E. The listing of equipment and personnel is in keeping with the current organization of the 1st Squadron, 9th Cavalry.

INDEX

SOP/CHECKLISTS

GENERAL

MISSION

The mission of the Air Cavalry Squadron is to provide reconnaissance and security for a division or other supported unit and to engage in combat as an economy of force unit.

Each combat troop of the squadron performs the same type mission as the squadron. Combat troops are normally most effectively employed under squadron control. However, they each are capable of independent mission performance in support or attached to another control headquarters.

RECONNAISSANCE

1. Reconnaissance is the directed effort in the field to collect information of the enemy and the area of operations by ground and air means.

2. Fundamentals:

a. Orient on the location or movement of the intelligence objective.

b. Report all information accurately and promptly.

c. Avoid decisive engagements.

d. Maintain contact with the enemy.

e. Develop the situation.

3. Types of reconnaissance missions:

a. Route reconnaissance: The directed effort to obtain information of the terrain, airspace, and enemy along a specific air or ground route and the terrain and airspace adjacent thereto, which, if occupied by the enemy, would effect our movement along the selected air or ground route.

b. Zone reconnaissance: The directed effort to obtain detailed information of all air and ground routes, terrain, weather, and enemy forces in a defined zone extending from friendly territory.

c. Area reconnaissance: The directed effort to obtain detailed information of all air and ground routes, terrain, weather, and enemy forces within a specific and clearly defined area.

SECURITY

1. Security includes all measures taken by a command to protect itself from espionage, observation, sabotage, annoyance, or surprise.

2. Fundamentals:

a. Orient on the location or movement of the force being secured.

b. Perform continuous reconnaissance (surveillance).

c. Provide timely and accurate warning.

d. Provide space for maneuver.

e. Maintain enemy contact.

3. Types of security missions:

a. Advance guard, flank guard, rear guard. These guard detachments are normally provided by the commander of the main body from organic or attached resources. They operate to the front, flanks, or rear of a moving force to insure its uninterrupted advance and to protect it from enemy surprise attack by defeating, destroying, or delaying the enemy within its capabilities.

b. Screening force. A unit organized and deployed to conduct surveillance over an extending frontage to the front, flanks, or rear of a moving or stationary force, providing early warning of enemy threats, and maintain enemy contact.

c. Covering force. A highly mobile, tactically self-contained security force which operates at a considerable distance to the front, flank, or rear of a moving or stationary force, with the mission of making an early development of the situation, defeating hostile forces if possible, and deceiving, delaying, or disorganizing enemy forces until the main force can adequately react to cope with the situation.

d. Rear area security force. A force assigned to protect rear area units, installations, and routes of communication from attack by enemy airborne or air-landed forces, guerrillas, and infiltrators.

ECONOMY-OF-FORCE COMBAT OPERATIONS

1. Economy-of-force combat operations are characterized by the skillful and prudent use of combat power to accomplish the mission with minimum expenditure of resources.

2. Fundamentals:

a. Plan carefully, considering the mission, enemy, terrain, weather, and troops available.

b. Execute rapidly, emphasizing the mobility differential inherent in the Squadron.

c. Accomplish the operation with thoroughly integrated fire and maneuver.

d. Retain the initiative.

e. Provide timely and responsive logistical support.

3. Types of economy-of-force combat missions:

a. Attack.

b. Defense.

c. Delay.

d. Raid.

e. Ambush.

f. Counter-attack.

g. Link-up.

SQUADRON TACTICAL CAPABILITIES

Perform air and ground reconnaissance and provide security for the unit to which assigned or attached.

Provide limited air and ground antitank defense for the unit to which assigned or attached.

Conduct offensive, defensive, or delaying combat operations as required.

LIMITATIONS

Combat effectiveness is reduced in darkness and bad weather.

Comparatively large volumes of ammunition and POL are required.

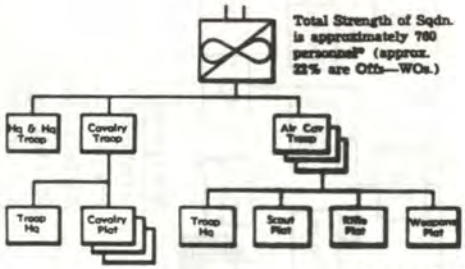
Individual aviator effectiveness deteriorates after extended periods of flying.

Overall mission capability is reduced when combat elements of the Squadron are attached to other units.

The Squadron has a limited capability of holding ground for extended periods.

The effectiveness of air reconnaissance and security operations may be reduced by sophisticated enemy forward air defense systems.

AIR CAVALRY SQUADRON



Aircraft

OH-6 or OH-58	30
UH-1B/C	8
AH-1G	27
UH-1H	23
	88

Vehicles

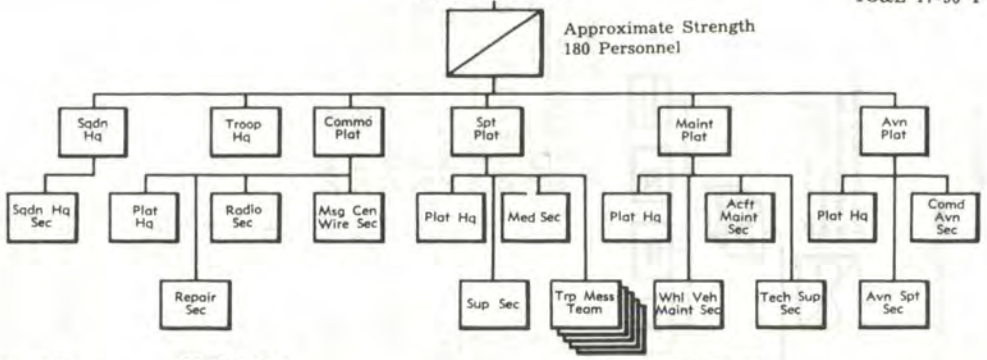
Trk platform 1/2T (Mule)	10
Trk utility 1/4T	47
Trk utility 1/4T (106)	6
Trk amb 1/4T	2
Trk cargo 3/4T	36
Trk cargo 2 1/2T	11
Trk tanker 2 1/2T	4
Trk wrecker 2 1/2T	1
	117

Weapons

Machinegun, M60	37
Grenade launcher, M79	223
Mortar (81 mm)	3
Recoilless rifle (106 mm)	6
Pistol	507
Rifle	258

Aircraft Weapons Systems

XM-27	30
M-16/21	8
M-23	23
XM-28	27
XM-157B	108
XM-159C	108
XM-18	54
XM-35	27



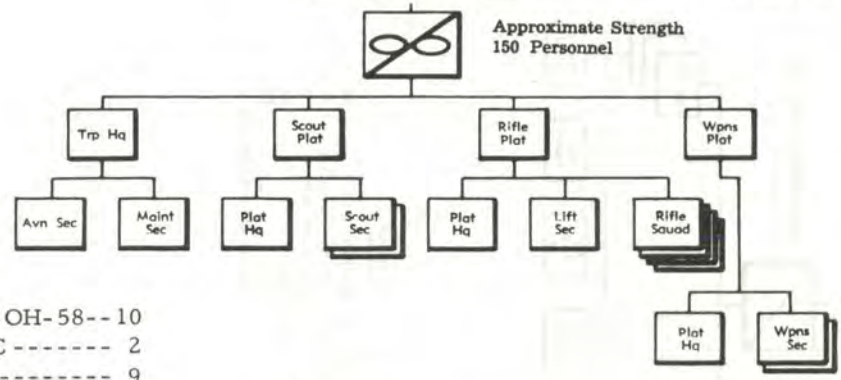
Aircraft	
UH-1B	2
UH-1H	5
	7

Vehicles	
Trk platform 1/2T	4
Trk utility 1/4T	17
Trk amb 1/4T	2
Trk cargo 3/4T	12
Trk cargo 2 1/2T	11
Trk tank gasoline 2 1/2T	4
Wrecker w/crane 2 1/2T	1
	51

Weapons	
Grenade launcher	52
Pistol	123
Rifle	58
Machinegun	10
Acft system M-23	5
Acft system M-16/21	2

AIR CAVALRY TROOP

TO&E 17-98 T



Aircraft

OH-6 or OH-58	10
UH-1B/C	2
AH-1G	9
UH-1H	6
	27

Vehicles

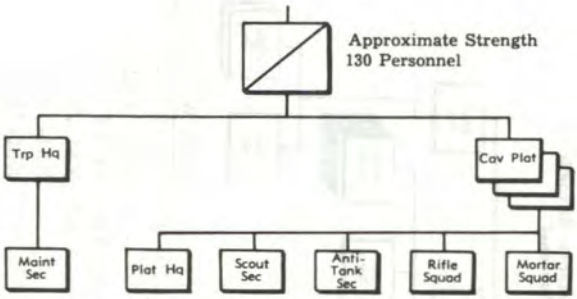
Trk platform 1/2T (Mule)	2
Trk utility 1/4T	4
Trk cargo 3/4T	4
	10

Weapons

Grenade launcher, M-79	43
Machinegun, M-60	4
Pistol	111
Rifle	40

Acft Weapons Systems

XM-27	10
XM-16/21	2
M-23	6
XM-28	9
XM-157B	36
XM-159C	36
XM-18	18
XM-35	9



Vehicles		Weapons	
Trk utility 1/4 T	18	Machine gun	15
Trk utility 1/4 T (106)	6	Grenade launcher	42
Trk cargo 3/4 T	12	Mortar 81 mm	3
	36	Pistol	51
		Rifle	80
		Recoilless rifle 106 mm	6

COMBAT ORGANIZATION

COMBAT ORGANIZATION SQUADRON

The Squadron is organized for combat according to the mission assigned. In its normal TO&E configuration*, a troop may be attached to each committed brigade with the Squadron (-) employed as needed; or all troops may be retained under Squadron control to accomplish brigade and division missions.

As the overall situation dictates, the Squadron Commander may tailor his force, using the cross-attachment (scramble) principle, for the most efficient organization to accomplish the mission. In its extreme form, the Squadron can be organized into four troops containing like elements (see Figure 2). For example, all weapons platoons throughout the Squadron can assemble under one troop commander and function as the Weapons Troop. The Squadron Commander may vary the organization of the scramble as he considers necessary, between the normal TO&E posture and the assembly of like troops. (See example of variation, Figure 3.)

In a scramble posture, the troops are normally retained under Squadron control and fought by the Squadron Commander to accomplish the mission assigned by the Division CG.

*For convenience, normal Squadron TO&E configuration is referred to as Scramble #1.

TROOP

While engaged in the performance of their individual missions, the troops may be organized for combat under basic troop TO&E structure (see figure 4), or under a troop scramble. In the air cavalry troop, the structure may vary from normal TO&E to a posture of either two or four balanced formations, depending on the mission and discretion of the troop commander (see figures 5-6). The cavalry troop may assume one of four configurations: The normal TO&E structure, four specialized platoons, a rifle force, or a raid/antitank force. For example, the raid/antitank force is comprised of three platoons which include in each: Two scout machinegun vehicles with five personnel each, and an antitank section of two vehicle-mounted 106 RR's and crew. Normally, this organization is used for deep penetration raids against enemy armor (see figure 10). Unlike the air cavalry troops, the cavalry troop, may assume any one of its own four troop scramble variations while engaged in a squadron scramble.

3 Basic Structures:

1. TO&E.

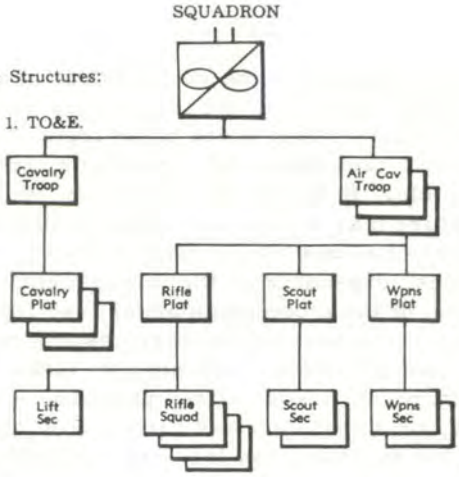


Figure 1

2. Like elements grouped together to form four specialized troops.

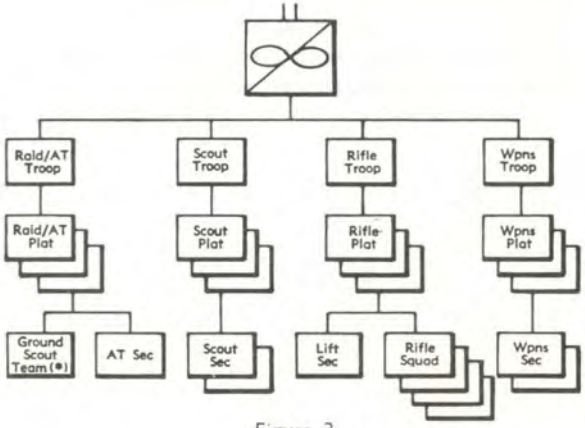


Figure 2

3. ex. of variation (scramble)

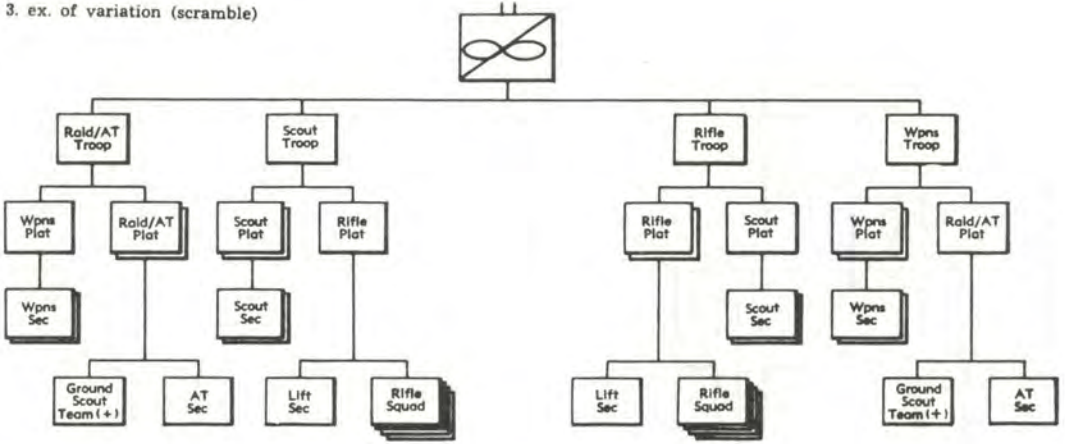


Figure 3

3 Basic Structures:

1. TO&E.

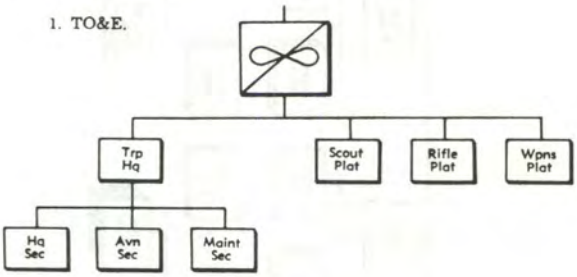


Figure 4

2. Example of organization for combat of air cavalry troop—2 balanced formations. (Acft represented are based on unit minimum standard)

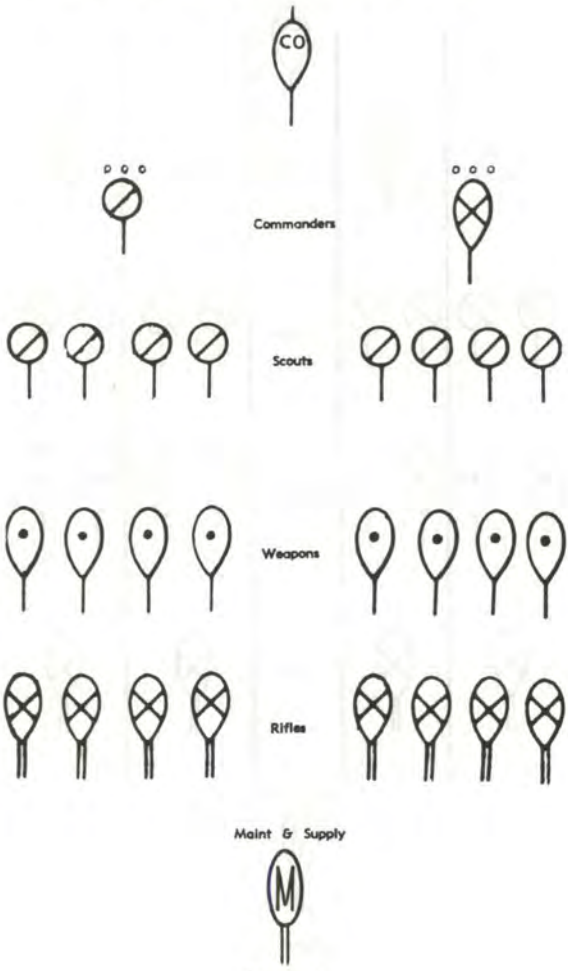


Figure 5

3. Example of organization for combat of air cavalry troop-4 balanced formations. (Acft represented are based on unit minimum standard)

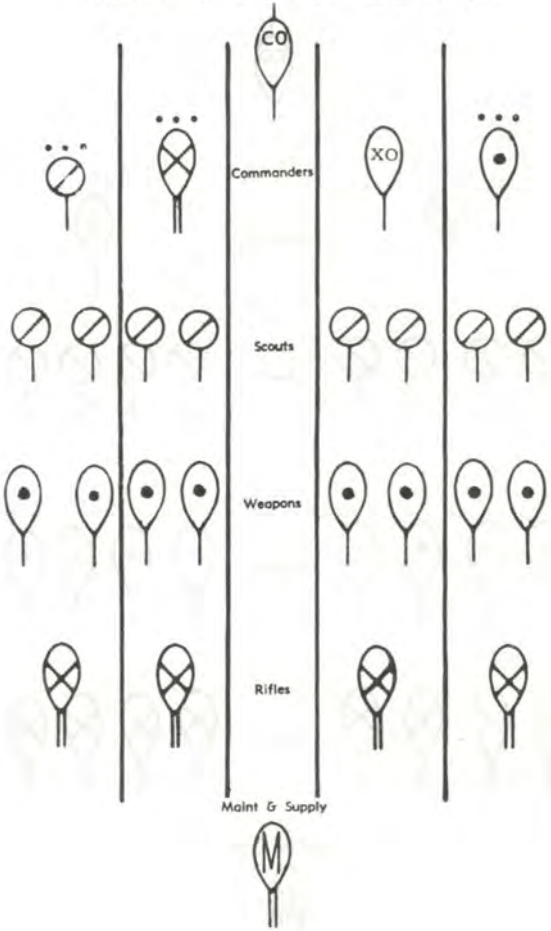


Figure 6

4 Basic Structures:

1. TO&E

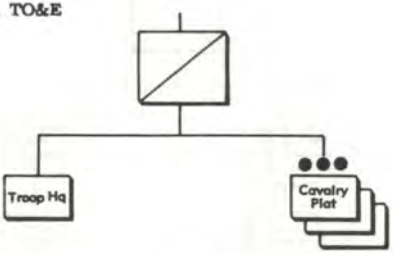


Figure 7

2. 4 Specialized Platoons

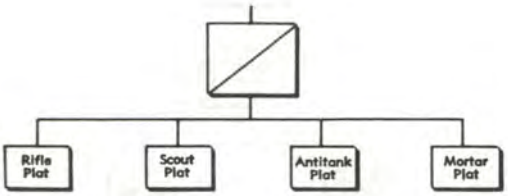


Figure 8

Note: Structures 1 & 2 are not normally air mobile.

3. Rifle Force

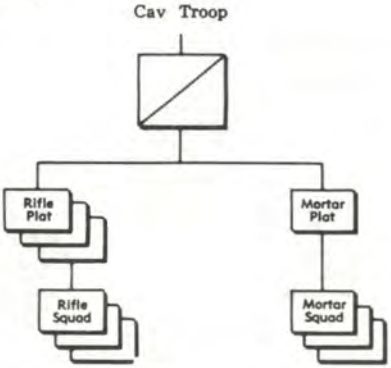


Figure 9

4. Raid/AT Force

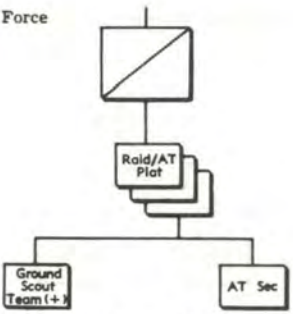


Figure 10

PLATOON OPERATIONS

AIR CAVALRY PLATOON MISSIONS

SCOUT PLATOON

1. Conduct route, zone, and area reconnaissance.
2. Screen objective during raid.
3. Locate targets for rifle and weapons platoons.
4. Select LZs, PZs, laagers, and hideout areas.*
5. Conduct feints, diversionary actions on order.
6. Lead rifle force to and from LZs.
7. Establish OPs and LPs.
8. Protect rear area installations, when reinforced.
9. Secure against airborne, airmobile, and irregular force attack.
10. Isolate ambush site from enemy intervention.
11. Locate targets of opportunity.
12. Provide 360° security for blocking force.
13. Perform aerial radiological surveys.
14. Destroy or repel enemy probing action, reinforced.

*For definitions, see Glossary

RIFLE PLATOON

1. Conduct detailed ground reconnaissance.
2. Establish road blocks and ambushes.

3. Provide an airmobile ground combat force for raids and other economy-of-force combat missions.
4. Provide security in laagers, FRPs, and hideout areas.
5. Establish ground OPs and LPs.
6. Establish perimeter defense of LZs preparatory to the landing of divisional infantry forces.
7. Protect rear area installations.
8. Occupy a combat outpost line.
9. Conduct long-range combat patrols.
10. Conduct counterguerrilla operations.
11. Act as an airmobile reserve.

WEAPONS PLATOON

1. Provide air-to-ground fire support for scout and rifle elements.
2. Provide suppressive fire in LZ.
3. Destroy point targets.
4. Act as scouts when required.
5. Provide fire support for raids, ambushes, combat patrols, and other combat operations.

AIR CAVALRY PLATOON TECHNIQUES

1. Cavalry helicopters are normally operated as a team of two aircraft at minimum for reasons of combat safety, mutual protection, and increased reliability of communications and information obtained.

2. Significant spot reports are sent to the commander having the most immediate interest, on his command FM frequency, regardless of normal reporting procedures.

3. Scout sections, at four mission-ready light observation helicopters each, normally operate with one team of two aircraft on station and one team either refueling/rearming or enroute to or from the mission area. At night, scout teams occasionally man dismounted listening posts. One scout section can provide a deployed infantry battalion the reconnaissance it normally requires.

4. Rifle platoons, at four rifle squads and a lift section of four mission-ready helicopters each, are normally employed as an entity, although single squads, each mounted in its organic helicopter, can conduct small-scale independent operations for short periods of time. All riflemen are rappel qualified.

In order to reduce the requirement for voice transmissions, lift section will:

a. Obtain approximate start time and enroute formation from section commander by direct liaison.

b. Start engines on the section commander.

c. Section commander will turn on anti-collision light 10 seconds prior to takeoff. All helicopters of the section will lift when the section commander turns his anti-collision light OFF.

d. After shutdown, report to section leader's aircraft for new instructions.

5. Weapons platoon, at two sections of four mission-ready helicopters each, are normally maintained on call for use as the enemy situation is developed by the scout or rifle platoon. Standard armament for the helicopters of all weapons platoons is the M-16 (See "Weapons Data").

The element of surprise inherent in the Nap-of-the-Earth environment, in conjunction with a trained crew and appropriate weapon system, make possible the destruction of enemy targets at ranges of 300-600 meters. The following will be used a as guide in the development of low level attack techniques:

a. Maintain constant boresight of weapon systems.

b. Make maximum utilization of cover and concealment afforded by surrounding foliage and terrain.

c. Lead in with machine gun tracer fire where possible.

d. Fire two-three pair rocket bursts, adjusting between pairs.

e. Break low level observing strike/target effect during break.

f. Engage from new angle of attack if second pass required.

g. Engage armored vehicles from the rear on the first pass, the side on the second pass, (NEVER FROM FRONT).

CAVALRY PLATOON MISSIONS

CAVALRY OR SCOUT PLATOON

1. Provide security in LZs, PZs, FRPs, and air cavalry troop laager areas.
2. Provide security for rear area installations.
3. Perform detailed ground reconnaissance missions.
4. Establish roadblocks and ambushes.
5. Perform detailed ground radiological surveys.

RIFLE PLATOON

1. Continue reconnaissance mission dismounted.
2. Reinforce squadron rifle force.
3. Provide a division airmobile reserve.
4. Conduct ground attacks.
5. Secure laager and hideout areas.
6. Conduct night patrols and raids.

RAID/AT PLATOON

1. Reinforce squadron or division elements against an armor threat.
2. Provide a ground mobile or airmobile antitank force.
3. Perform deep penetration raid missions.
4. Establish anti-armor roadblocks.

MORTAR PLATOON

1. Provide fire support for cavalry/scout or rifle platoons.

HEADQUARTERS PLATOON MISSIONS

SUPPORT PLATOON

Platoon Headquarters

1. Provide for the general operation and internal arrangement of the squadron trains.
2. Provide local security.
3. Maintain communication on the administrative/logistical net (FM) as the net control station and operate in the AM net of the next higher support unit.
4. Coordinate with support command for all classes of supply for the Squadron.
5. Provide timely and adequate resupply by supervising the activities of the supply section.

Mess Teams (5)

1. Receive Class I supplies.
2. Prepare and deliver meals or rations to all troops of the Squadron.
3. Accomplish ration transfer upon notification from troop commanders of a squadron scramble.

Supply Section

1. Receive supply requests.
2. Prepare and forward requisitions to the appropriate logistical support agency.
3. Store and distribute supplies within organic capability. (Includes POL and ammunition.)

4. Re-distribute POL and ammunition upon notification from troop commanders of a squadron scramble.

Medical Section

1. Operate squadron aid station.
2. Provide emergency medical treatment.
3. Attach an aid team to each committed troop.
4. Provide casualty evacuation within organic capability.

AVIATION PLATOON

Platoon Headquarters

1. Provide command and supervision of the platoon.
2. Control air traffic at the Squadron heliport.
3. Supervise refueling procedures for the Squadron.
4. Establish troop heliports when requested by troop commanders.

Aviation Support Section

1. Operate the squadron heliport by providing:
   a. Terminal control for arriving and departing helicopters.
   b. Refueling facilities.
2. Provide terminal control and limited refueling personnel for troop heliports.
3. Provide refueling for squadron vehicles.

Command Aviation Section

1. Provide air vehicles and crews for the Squadron Commander and staff.
2. Standardize flying techniques in the Squadron.

COMMUNICATION PLATOON

Platoon Headquarters

1. Supervise all Squadron radio nets.
2. Advise the commander on all matters pertaining to communications, to include status of equipment.
3. Enforce radio discipline.
4. Receive equipment for repair.

Repair Section

1. Provide second echelon radio maintenance for the Squadron; process and forward equipment to third echelon.
2. Provide second echelon avionics repair for the Squadron; process and forward equipment to third echelon.

Radio Section

1. Provide commander and staff with adequate communication.
2. Provide all SSB communication for Squadron headquarters.
3. Provide NCS for Squadron maintenance/ logistics nets.

Message Center and Wire Section

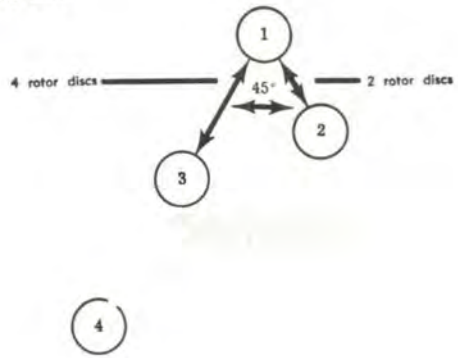
1. Operate Squadron switchboard.
2. Operate Squadron message center:
   a. Receive and route distribution.
   b. Prepare and maintain SOI.
3. Provide wire nets for internal command post installation.

MAINTENANCE PLATOON

1. Provide aircraft and vehicle maintenance supervision for the troops within the Squadron.
2. Receive and forward parts and requisitions from the troops.
3. Distribute parts.
4. Provide for the evacuation of aircraft and vehicles to higher echelon within organic capability.
5. Perform technical inspections.
6. Provide assistance in records keeping.
7. Provide Squadron Commander with status of both vehicles and aircraft.
8. Assist troops in maintaining minimum operational standards.
9. Coordinate with other units on parts availability to reduce number of EDPs.

FORMATIONS

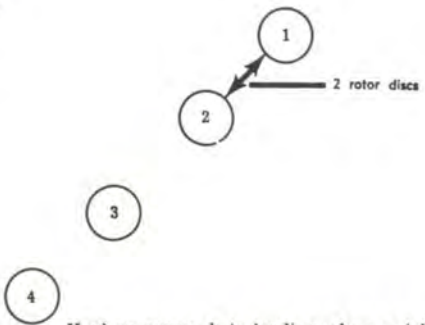
Section
Heavy Left



Note 4 rotor discs between #1 and #3 allows#2 to displace laterally

Figure 11

Left
Echelon

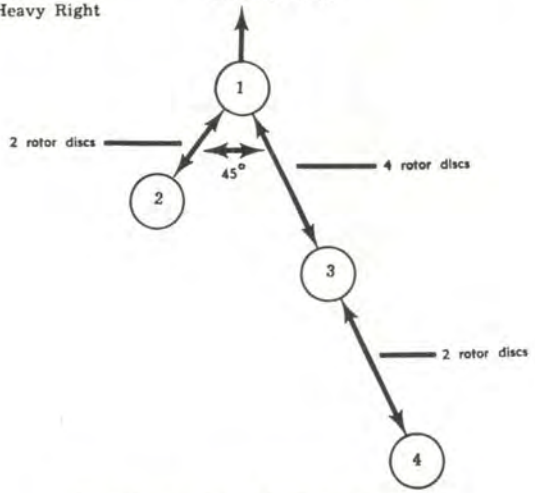


Used on approach to landing when a right break is required. See Figure

Figure 12

Section
Heavy Right

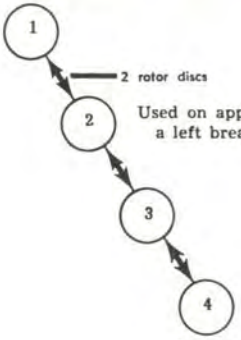
FORMATIONS



Note: 4 rotor discs between #1 and #3;
allows #2 to displace laterally ⟷

Figure 13

Section
Right Echelon



Used on approach to landing when a left break is required.

Figure 14

Section Column

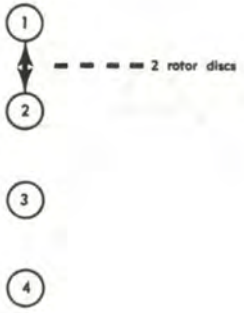


Figure 15

Normally used:

1. On final approach to landing.
2. When terrain or tactical situation necessitates. (Example: passage through valleys or along river beds.)
3. For target engagement where only one pass is desired. Break right or left is accomplished prior to reaching target. (See target engagement, figs. 17,18)

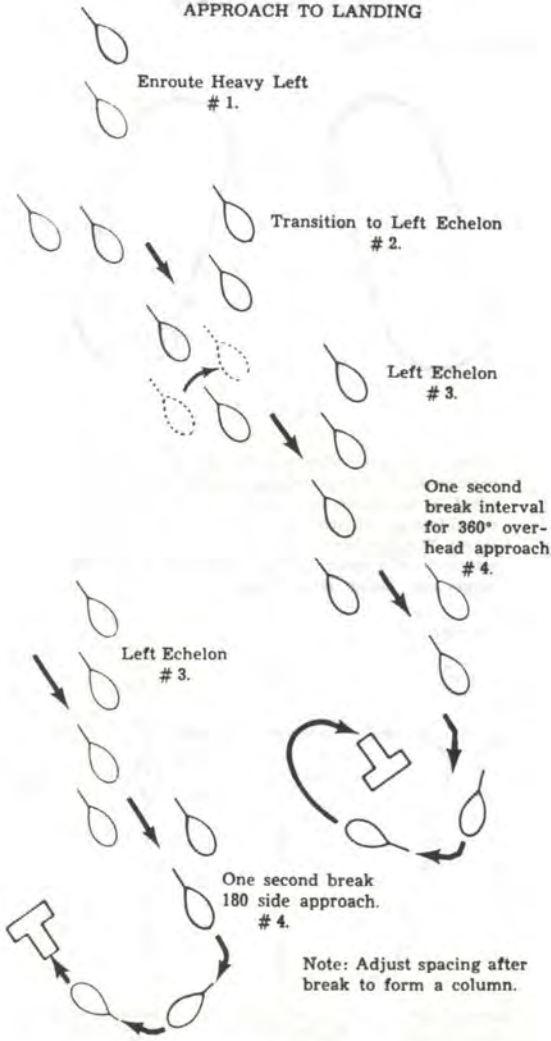

APPROACH TO LANDING
Enroute Heavy Left
1.
Transition to Left Echelon
2.
Left Echelon
3.
One second
break interval
for 360° over-
head approach.
4.
Left Echelon
3.
One second break
180 side approach.
4.
Note: Adjust spacing after
break to form a column.

Figure 16

Continuous Fire Pattern

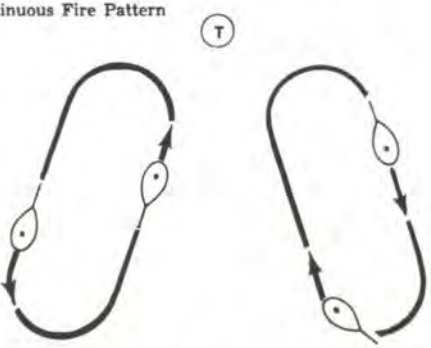


Figure 17

The continuous fire pattern will serve as the basic method of target engagement. Properly executed, a continuous base of fire can be placed on the objective, whether it be an area or point type target. The number of aircraft may vary from the minimum of a section on up, depending on type of target and combat environment.

Variations:

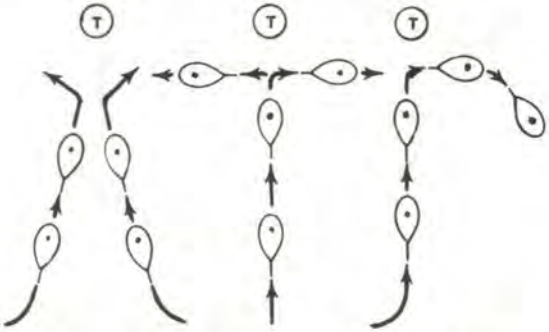


Figure 18

SOP CHECKLISTS

SOP CHECKLIST

WARNING ORDER

Includes the following:

- Ready (cocked) time
- Combat formation
- Mission
- Operational planning instructions
  - Duration
  - Location
- Logistical planning instructions
  - Rations and water
  - POL
  - Ammunition

OPERATIONS ORDER

Reference: Map

Task Organization:

Situation:

Enemy.

Friendly.

Attachments and detachments.

Mission.

Execution:

Concept of operation.

Maneuver.

Fire support.

Administration and logistics.

Command and signal.

Time check.

MARCHES

Warning Order.

Ready time.

Movement time.

Formation or sequence.

Destination.

Map Reconnaissance.

Route recon—time/distance to SP.

Inspect—personnel, vehicles, radios, weapons.

Route—all vehicle commanders know; issue strip map.

Scheduled halts—when, where, purpose, local security.

Instructions to advance or quartering parties.

RP—where, when, procedure from RP to assembly/base area.

Maintenance and medical aid.

STAND-TO

All personal gear rolled and stowed.

Muster.

Perform pre-check on all air and ground vehicles.

- Loading list complete.
- Radios operational.
- Weapons mounted w/basic load ammo.
- Complete pre-flight or daily inspection.
- Start and warm up vehicles.

Communications.

- Frequencies.
- Call signs.
- SOI extract.
- Operational check as required.

Personal hygiene.

- Body.
- Clothing.

SQUADRON SCRAMBLE

1. All combat platoons:

   a. Etablish communications with appropriate Troop CO on his command FM frequency.

   b. Report platoon status:

      (1) Location (in code).

      (2) Ready time at present location, consider the following:

Fuel	Maps
Ammo	SOI
Maintenance	Brevity codes
Personnel	Mandatory equipment

      (3) Shortage from prescribed "minimum-standard".

      (4) Immediate requirements to achieve "mision-ready" status.

   e. Proceed to appropriate Troop laager, FRA, or hideout, as directed.

   d. Establish perimeter security on arrival.

   e. Report to Troop CO.

   f. Prepare night departure cards if applicable.

   g. Monitor the appropriate command FM at all times.

   h. Platoon UHF used for air to air communication.

   i. FRP terminal control on appropriate troop command UHF frequency.

   j. Spot reports are sent to appropriate troop commander and the commander of the unit having the most immediate interest.

2. All Troop Hqs.

a. Coordinate with the squadron trains commander on the following:

(1) Arrange for ration transfer based on initial reports from platoon leaders.

(2) Submit requests for appropriate ammunition.

(3) New fuel requirements, if any.

3. Scout Troop:

a. Missions:

(1) Continue reconnaissance mission.

(2) Locate targets for rifle and weapons troops.

(3) Select LZs, PZs, laagers, and hideout areas.

(4) Lead rifle force from PZs and LZs to laager or hideout areas.

(5) Secure ground operations from surprise attack.

b. Employment:

(1) Teams of two aircraft each.

(2) Force ideally committed when:

(a) One-third of teams are on station.

(b) One-third on standby (cocked).

(c) Remaining third becoming mission-ready.

NOTE: Mission may require employment of the entire scout force of 12 teams for short periods, such as "first light" reconnaissance.

4. Rifle Troop:

a. Missions:

(1) Provide area security.

(2) Conduct ground attacks.

(3) Conduct ambushes and raids.

(4) Conduct night patrols.

(5) Act as division air mobile reserve.

b. Employment:

(1) Normal employment will stress platoon integrity.

(2) Unless otherwise specified, the standard enroute formation is heavy left. (See formations.)

c. Coordinating instructions:

(1) When the tactical situation permits, the LZ and OBJ should be reconnoitered by the rifle troop commander, lead rifle platoon leader, and lead lift section leader.

(2) A minimum of 20 minutes planning time is desirable.

(3) Scouts normally lead rifles into LZ, laager, and hideout areas, using smoke on LZ, if necessary.

(4) The lead lift section commander assumes command of flight after troops dismount.

(5) When securing an LZ, PZ, laager area, or FRP, the clock system is used. North is 12 o'clock.

(6) Before aircraft are shut down or parked, they are tactically dispersed.

(7) Night departure cards are prepared prior to nightfall.

(8) Night formations are flown with taped navigation lights set on "dim/steady"; on landing, navigation lights are turned to "bright/steady" 50-100 feet from termination.

5. Weapons Troop:

a. Mission:

(1) Provide fire support for rifle and scout troops, both prearranged and on-call.

(2) Provide a division antiarmor force.

(3) Conduct raids and diversionary attacks.

b. Employment:

(1) Normal employment will stress platoon integrity.

(2) Missions are not normally assigned to elements smaller than a section.

(3) The weapons troop is ideally committed when:

(a) Two sections are on station.
(b) Two sections are on standby (Cocked).
(c) Remaining two sections are becoming mission-ready.

(4) Depending on mission, one or all of the sections may be required simultaneously.

(5) On-station elements normally orbit at low level while awaiting commitment.

(a) Orbit area is designated by unit leader (normally an area with prominent terrain features and proximity to the target).
(b) Single or multiple orbit points may be used.
(c) Orbit clockwise, 50 feet absolute or below.
(d) Enroute altitude 200 feet or below.

(6) Unless otherwise specified, the normal formation is section or sections heavy left, platoons in column.

6. Cavalry Troop:

a. General:

(1) In a scramble situation, the cavalry troop may assume one of four structures, depending on the mission re-

quirement and discretion of the Squadron Commander.

(a) TO&E.
(b) Four specialized platoons.
(c) Rifle Force.
(d) Raid/AT Force.

(NOTE: (a) and (b) are not normally airmobile.)

(2) Elements within the troop normally remain under control of the troop commander and are not normally cross-attached to other troops to form specific forces as in the case of the air troops.

(NOTE: One exception is a "type variation" of a squadron scramble. (See Figure 3, Combat Orgn.)

(3) Upon notification to scramble, individual platoon leaders make contact with troop commander and follow general procedures outlined in "all combat platoons" under Squadron Scramble.

(4) Troop commander reports status of his particular scramble to Squadron.

(5) Troop commander coordinates with:
(a) S-3 on air lift or ground movement of his particular scramble organization.
(b) Trains commander — for mission-ready requirements.
(c) Other support elements according to requirements.

(6) Depending on type scramble, those

elements of the troop not utilized will remain at the troop base with the XO.

b. Mission: Will depend on the type of combat structure requested. (See Platoon Operations.)

c. Employment: Will depend on type of combat structure; however, platoon integrity is stressed. (See FM 17-36 for further employment of the cavalry platoon.)

SQUADRON COMMAND GROUP

The squadron command group normally satellites on one of the combat troops and includes:

CO
XO
Sgt Maj
S-2
S-3
Avn Platoon Ldr
Flight Surgeon
Artillery LNO
Commo Officer
Air Force Forward Air Controller
Other mission-essential LNOs
CO's driver and 1/4Ton
CO's acft and crew
S-3's TOC acft
S-3's driver and 1/4Ton
MRC-95 1/4Ton and operator

Remaining squadron officers maintain a floating liaison status between this location and the squadron trains.

Normally, the CO's or S-3's TOC aircraft is utilized as the Squadron airborne CP.

SQUADRON TRAINS SOP

1. GENERAL. The squadron support platoon commander is also the squadron trains commander. Trains are located within communication range of the combat elements of the Squadron and the trains of the next higher command. (See Figure 19 for normal organization of trains.)

The trains area must be of ample size to accomodate aircraft from both squadron logistical elements and supporting units. It must be geographically secure from enemy ground attack.

Supply distribution forward from the trains is accomplished primarily by organic aircraft. The Squadron has a limited capability for delivering supplies by ground means.

Supply requests are forwarded from the troops directly to the support platoon commander by telephone, radio, written message, or voice.

Upon notification of squadron scramble, trains commander coordinates with troop commanders on rations, ammunition, and POL requirements.

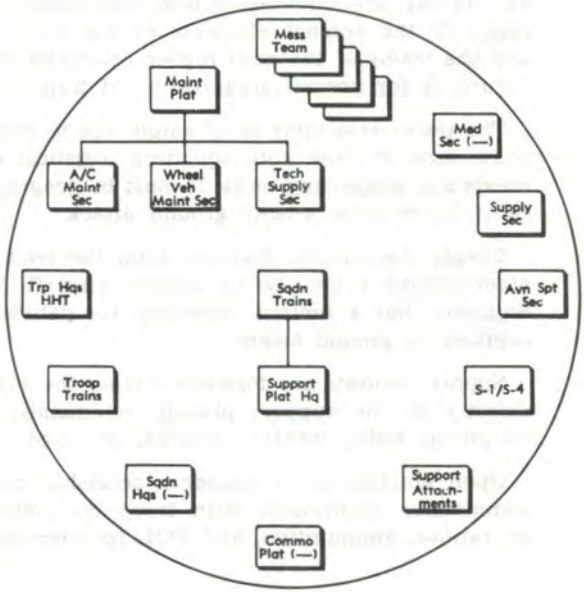

Mess Team
Maint Plat
Med Sec (—)
A/C Maint Sec
Wheel Veh Maint Sec
Tech Supply Sec
Supply Sec
Trp Hqs HHT
Sqdn Trains
Avn Spt Sec
Troop Trains
Support Plat Hq
S-1/S-4
Sqdn Hqs (—)
Support Attach-ments
Commo Plat (—)

Figure 19

LIAISON OFFICER

Three liaison officers are assigned to squadron headquarters. They represent the Air Cavalry Squadron or one of its troops, according to degree of Squadron commitment.

Squadron liaison officers are normally attached to the committed brigades of the Division. Each acts as a special staff officer to the commander of the unit to which attached. He advises on employment of the Air Cavalry Squadron or troop. He monitors both Squadron or troop and brigade operations/intelligence nets.

LNO CHECKLIST

Prior to departure to higher heaquarters CP:

Obtain briefing from S-3.
- Communications.
- Current enemy situation and trend.
- Mission readiness of your unit.
- Specific problem areas.

Check out with CO.

Obtain necessary items and equipment:

- 1/4T w/VRC-47 for Squadron Liaison Officer.
- 1/4T w/VRC-46 for Troop Liaison Officer.
- Antenna set, RC 292.
- SOI Extract.
- Maps—overlays.
- Individual weapons.
- Mandatory vehicle equipment.
- Appropriate field gear.

Upon arrival at higher headquarters CP:

Establish communications with your unit.

Contact S-3:

Obtain latest enemy situation and trend.
Advise of your unit's situation and capabilities.

While at higher headquarters CP:

Maintain close coordination with S-3.

Obtain information on all proposed operations and relay to unit.

Keep current on development of situation.

Advise on employment of your unit.

Relay spot reports and post information on operations map.

Prior to return to your unit CP:

Final coordination with S-2/S-3:

Obtain copies of current operations orders, plans, overlays and situation reports.
Times and locations of pertinent conferences.
Current disposition of friendly forces.
Visit commander for any special instructions.

Upon return to your unit CP:

Brief operations officer.

Check in with CO.

PERIMETER SECURITY

Security for the Squadron is "mobility". It is imperative that all mission non-essentials be left at base. If movement is not possible, and it becomes necessary to defend, the following check list will be utilized as a guide to defense.

Aircraft will be dispersed within the troop's capability to defend them (consideration given to type terrain, cover, and concealment).

Aircraft will be positioned toward likely avenues of approach so that aircraft weapon systems may be utilized.

Flexible UH-1 searchlights in conjunction with preplanned signals may be utilized for illumination and target acquisition at night.

Cavalry troop personnel, if available, will be integrated into the defense plan by close coordination between the commanders.

OPs and LPs will be tied in by radio or wire for early warning.

Strict light and noise discipline will be maintained.

Assure that at least one man in each section is awake and alert.

Assure that all personnel are aware of password and alternate.

Night departure cards will be made for all aircraft.

TERMINAL AREA CONTROL SYSTEM

1. See current SOI for air traffic control frequency.

2. Warnings and flight restrictions transmitted on command nets.

3. Pilots responsible for maintaining aircraft separation.

4. Brevity code.

a. (Code word)	Request for landing
b. (Code word)	Request for takeoff
c. HOLD (followed by time)	Temporary denial of clearance
d. DIVERT	Clearance denial

e. Clearance indicates direction of wind, takeoff, and landing.

f. ONE	NE-000°-089°
g. TWO	SE-090°-179°
h. THREE	SW-180°-269°
i. FOUR	NW-270°-359°

4. Brevity code (Continued).

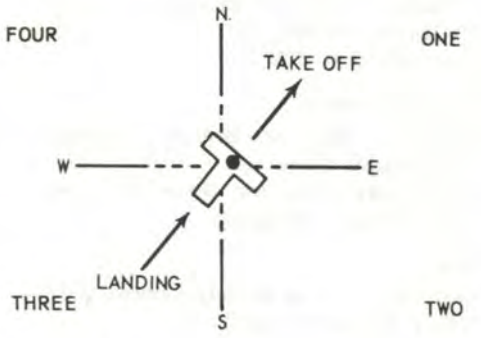


Figure 20

5. Eamples: (Ccde word for landing-**PIGEON**; code word for takeoff—ROCKET.)

a. Takeoff:
Request: "Brandy Control, this is Cider 3, ROCKET, over."
Clearance: "This is Brandy Control, ROCKET ONE, out."
Action: Takeoff to NE.

b. Landing:

(1) Normal.

Request: "Brandy Control, this is Cider 3, PIGEON, over."

Clearance: "This is Brandy Control, PIGEON THREE, out."

Action: Land to SW.

(2) Temporary denial.

Clearance: "This is Brandy Control, HOLD zero three, out."

Action: Stay clear for three minutes, then initiate call again.

(3) Denial.

Clearance: "This is Brandy Control, DIVERT to Cobra, out."

Action: Proceed to Cobra terminal and request landing.

c. Night Control. Night clearance will include exact landing or tafeoff azimuth.

Request: "Brandy Control, this is Cider 3, PIGEON over."

Clearance: "This is Brandy Control, PIGEON zero two five, out."

Action: Land on a magnetic heading of 025°.

TEE IDENTIFICATION MARKING

Day

Panels of PSP
Hdq trp panel solid yellow
A, B, C, D trps panels yellow with black symbols
Reverse side of panels OD — displayed when heliport is not in use

Figure 21

Night

Color of base light ⊛ identifies trp
Hq trp all lights yellow
A trp all lights white
B trp white lights, base light blue
C trp white lights, base light green
D trp white lights, base light orange

Figure 22

STANDARD TEE FOR FORMATION

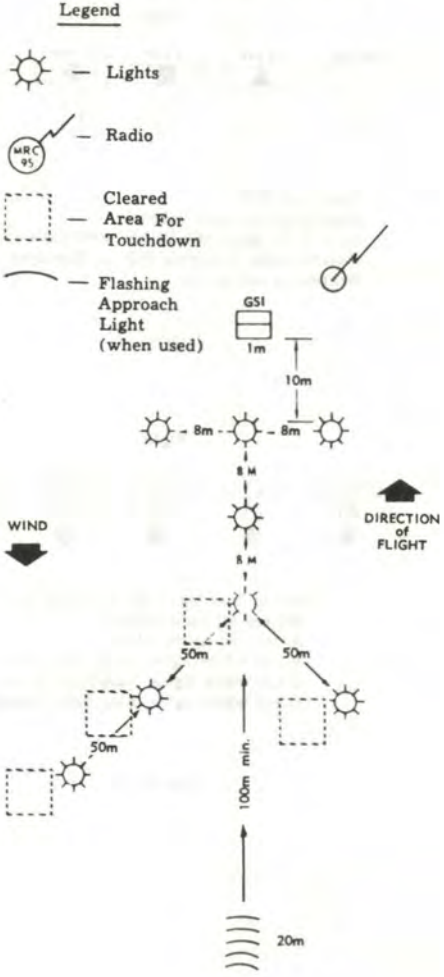


Figure 23

Landing zone establishment

Night LZ without glide slope indicator
Best Tee-to-obstacle ratio is 10:1
Max ratio is 6:1

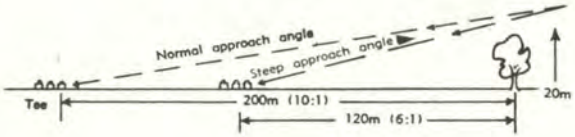


Figure 24

Night LZ with glide slope indicator
Set GSI according to instructions on instrument
Do not exceed 8 ° angle — optimum 6°

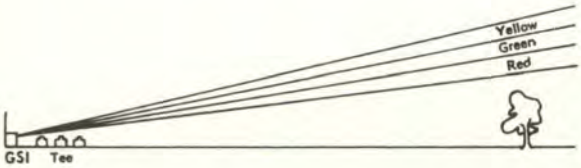


Figure 25

AIRCRAFT NIGHT DEPARTURE CARD

Example only

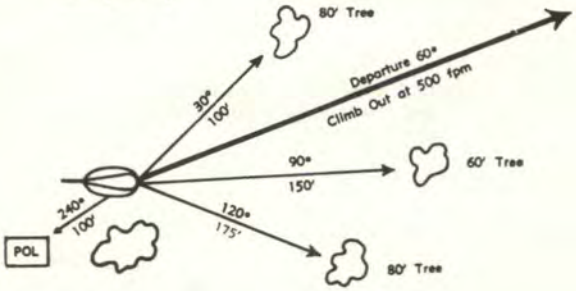


Figure 26

NOTE: To be prepared for each aircraft, each night in combat operations.
Two copies must be prepared; one for aircraft, one for operations.

FIRE SUPPORT

Available on call:

Direct Support Artillery.

Tube artillery.

Aerial rocket artillery.

TAC Air

Request:

Normally made through Liaison Officers attached to Squadron. FOs may also be assigned at troop level and located where readily available to forward fire requests, adjust fire, or obtain additional fire through their FDC. In the event the FO or Liaison Officer cannot be contacted, fire support requests are made through the troop commander. Troop commander will contact Squadron or Brigade fire support coordinator as appropriate.

Fire request must include:

Identification of observer or person requesting fire.

Location of target.

Description of target.

Control measures.

Time Rcvd_____ Control No_____

	SPOT	SITE	PIREP
ALPHA:	Observer	Observer	Observer
BRAVO:	Coordinates (clear)	Coordinates (encode)	Coordinates (encode)
CHARLIE:	What (enemy)	What (LZ, PZ)	What (visibility, WX)
DELTA:	Activity (Convoy, Troops Moving)	Size (Plat, Co)	Activity (Stationery, T)
ECHO:	Your Action (contact)	Best no wind landing factor	Wind direction
REMARKS			

TACTICAL REFUELING

1. RESPONSIBILITIES:

a. Troop.

(1) Establish and maintain FRP or troop point in Squadron FRA.

(2) Request fuel through Squadron S-4.

(3) Intercept and guide delivery aircraft to FRP.

(4) Provide local security and camouflage.

(5) Select alternate FRP.

(6) Maintain air traffic control at FRP.

b. Squadron S-4.

(1) Process requests for fuel from troops to Support Command.

(2) Include in request to Support Command:

(a) Delivery location.

(b) Frequencies and call signs of intercepting aircraft.

(c) Time and location for rendezvous with intercepting aircraft.

(d) Quantity of fuel required.

(e) Type of fuel required.

(3) Insure delivery of fuel to FRP/FRA.

c. Aviators.

(1) Use ground guides when hovering.

(2) Maintain separation between aircraft.

(3) Check fuel for correct type and contamination.

(4) Remain with aircraft until refueling is completed.

(5) Disperse and conceal aircraft as instructed.

d. POL Handlers.

(1) Insure filters and pumps are functional.
(2) Clear area of debris.
(3) Camouflage fuel bags and pumps.
(4) Guide aircraft to pumping sites.
(5) Be prepared to move on short notice.
(6) No soft caps or helmet liners will be worn; handlers will be bareheaded or wear a steel helmet.
(7) Goggles will be worn.

e. Crew Chiefs.

(1) Secure rotor blades.
(2) Refuel own aircraft.

f. General.

(1) FRP will normally be established when flight time between troop base and mission area exceeds 25 statute miles.
(2) FRP's will be located in areas not readily accessible by road.
(3) Alternate FRP's will be selected concurrently with primary sites.
(4) Personnel concerned will be informed of alternate FRP's.
(5) FRP's will be relocated at least every 6 hours.

POL ESTIMATE

Fuel Consumption:

UH-1 and AH-1G	80 gal per hour
OH-6	20 gal per hour

Flight Time.

Average 5 hours per day per aircraft.

Example:

Daily requirement for an air cavalry troop.

8 OH-6 X 5 hrs/day = 40 hrs/day.

20 gal/hr X 40 = 800 gals.

800 gals req = 2-500 gal bags or 4-250 gal bags.

14 UH-1's and AH-1G's X 5 hrs/day = 70 hrs/day.

80 gal/hr X 70 = 5,600 gals.

5,600 gals req = 11-500 gal bags or 22-250 gal bags.

AMMO ESTIMATE

Ammunition per troop per day expressed in rounds.

HQ TROOP

7.62mm	20,000 rounds
45 calibers	10 rounds
40mm (grenades M-79)	30 rounds
2.75-inch rockets	28 rounds
5.56mm	500 rounds

CAV TROOP

7.62mm	15,000 rounds
5.56mm	3,000 rounds
45 calibers	10 rounds
81mm	120 rounds
106mm	20 rounds
40mm	200 rounds

AIR CAV TROOP (Multiply by three for squadron totals.)

7.62mm	75,000 rounds
5.56mm	1,000 rounds
2.75-inch rockets	350 rounds
40mm (M-79)	50 rounds
40mm (linked)	3,000 rounds
45 calibers	10 rounds
20mm	5,000 rounds

RAPPELLING

1. Responsibilities.
   a. Safety NCO.
      (1) Correct aircraft rigging.
      (2) Rappeller.
         (a) Swiss-seat (use only square knots tied off with half hitches).
         (b) Snaplink hooked to swiss seat with gate down toward the rappeller.
         (c) If using single rope, three turns of rope through steel ring. If using double rope, one turn.
         (d) Two hookup snaplinks on rappel rope tied on correctly and working properly.
         (e) Steel helmet with jump chin strap and work gloves with liners.
         (f) Check rappeller's knowledge of aircraft exit techniques.
      (3) Doughnut ring hookup.
         (a) One snaplink to floating ring - gate up.
         (b) One snaplink to cable - gate up.
      (4) Inform pilot when ready for takeoff.
      (5) Check all equipment before takeoff and before rappellers assume position.
      (6) Commands.
         (a) Assume ready position.
         (b) Drop ropes.

(c) Assume position (use hand and arm signals to put rappellers in L position).

(d) Go.

(7) Observe ropes touching ground before men take up L position.

(8) Observe men off ropes, unhook, and drop all ropes.

(9) Inform pilot over itercom when all ropes are clear of aircraft.

(10) NCO must wear a safety line, head set, and have a sharp knife attached.

b. Pilot.

(1) Check rappelling rig in aircraft.

(2) Check that doors are off and that tape covers all sharp edges of floor and skids.

(3) Check to see that there is no loose equipment in aircraft.

(4) Take all commands from Safety NCO only.

c. Crew Chief.

(1) Observe rappellers are on ground and ropes are clear of aircraft.

(2) Tap pilot on shoulder AFTER Safety NCO has reported all rappellers identified on ground and all ropes are known to be clear by visual inspection.

2. Training (General).

a. Use double rope during tower and aircraft phases.

b. Use a ground safety man for each rope until rappellers are trained and proficient.

c. Ground safety man will wear goggles and steel helmet during aircraft phase.

d. Trained safety NCO will be the instructor.

e. No rappeller will be allowed to rappel from an aircraft until he is proficient from the tower.

f. No rappelling will be conducted from a squadron helicopter unless a safety NCO is on board who has been certified as such by the Squadron Rappelling Officer.

DOWNED AIRCRAFT PROCEDURES

TRAINING. Any helicopter dropping out of the flight will be accompanied by another from the formation as designated by the flight leader, normally the wing man.

The chase helicopter will:

Assist as required.

Notify unit CO.

If necessary, notify med evac on appropriate frequency (see SOI).

TACTICAL OPERATIONS. The flight leader will note time and location of downed aircraft and will attempt to relay information to base area or Search and Rescue Team if available. No aircraft from formation will accompany aircraft going down for any reason. Necessary assistance will be rendered upon completion of mission.

Downed aircraft alone will:

Attempt radio contact.

Display white T-shirt on top of aircraft if no medical aid is required.

Use purple smoke grenade (red flare at night) if medical aid is required.

If in enemy territory, prepare escape and evasion plan.

Organize perimeter defense if rescue is inbound.

Prepare and execute destruction plan for aircraft if situation necessitates abandoning the aircraft.

AFTER-ACTION REQUIREMENTS

Squadron Staff

The following squadron staff officers will visit each troop within four hours after the troop returns from any operation to assist as required:

Adjutant.

Chaplain.

Surgeon.

S-4.

Communications Officer.

Maintenance Officer.

Troops

Establish perimeter security.

Forward status report to squadron CO.

Send LNO or CO to squadron CP.

Prepare night departure cards.

Arrange to replace combat losses.

Perform necessary maintenance.

Replenish ammunition and POL.

MISSION DEBRIEFING

Estimate of mission results.

Location and activity of enemy.

Location of enemy weapons.

Location of potential obstacles to enemy surface movement.

LZs — FRAs — Laagers — Hideouts.

Weather.

Communications:

- Frequencies
- Procedures
- Security

Aircraft and personnel damage.

Refueling and maintenance problems.

Supporting units.

Recommendations.

MAINTENANCE

1. GENERAL. Maintenance is a command responsibility and is emphasized at all levels of command to insure the combat readiness of the squadron.

   a. Use "Continuous Inspection" method for correction of all organizational deficiencies.

   b. Perform scheduled maintenance in accordance with technical maintenance publications for the particular item.

   c. Keep "equipment serviceability criteria profile" current. (In compliance with AR 750-10.)

   d. Continue to monitor and correct all shortcomings and deficiencies.

2. AIRCRAFT.

   a. Maintain an 80 percent flyable rate, based on assigned aircraft.

   b. Perform only that maintenance repair in the squadron area which can be completed within 4 hours, unless deviation is authorized by higher headquarters.

   c. Keep S-3 informed of aircraft status.

3. WHEEL VEHICLES.

   a. Maintain a 90% operational rate.

   b. Evacuate from forward areas those vehicles which cannot be repaired within four hours.

   c. Keep S-3 informed of wheel vehicle status.

4. PARTS SUPPLY.

   a. Reduce EDPs and downtime by close coordination among all the troops in the Squadron.

   b. Maintain continuous communication with support units.

   c. Request aircraft parts through Mobile Data Receiver.

   d. Submit requisition (DA-2765) for vehicle parts to support units.

   e. Provide delivery of parts as they become available.

5. BATTLE DAMAGE (unscheduled maintenance).

   a. Recover items in accordance with unit capabilities.

   b. Repair on spot if within four-hour time frame.

   c. Submit combat loss report through S-4, if appropriate.

SAFETY

1. VEHICLES.

(a) Drivers will wear goggles when driving with windshields lowered.

(b) Ground guides will be used when moving with blackout lights in bivouac areas, and when backing vehicles.

(c) Jeep-mounted 106 RR's are top heavy; use caution.

(d) With the exception of the fuel tanker, no vehicle should be driven closer than 50 feet from any helicopter.

2. AIRCRAFT.

(a) Ground guides will be used for all night movements in heliports.

(b) All weapons will be cleared prior to entering aircraft.

(c) Unsheathed knives or bayonets will not be carried in aircraft.

(d) Flight crews will wear gloves and protective helmets with chin straps fastened on all flights.

(e) Nap of the earth flying will be performed, as required for a particular mission or proficiency training.

(f) Blasting caps will not be carried in the same aircraft with demolitions.

3. GENERAL.

(a) All duds will be marked and reported.

(b) Sleeping in or adjacent to roads or trails is prohibited.

(c) Double check tie down security of all parachute canopies used as camouflage covers.

(d) Heliport areas will be cleared of all loose debris. Trees and brush will be cut and removed from heliports as required.

(f) During thunderstorms, insure that all electrical equipment is grounded or turned off.

GO NO GO PROCEDURES

The following card will be placed on the console of all UH-1 aircraft. Percent data will be figured for each aircraft and entered on card.

In the event placard not available, the following will be utilized:

Check Max N1 Tach availability (Computed for each ACFT)

Pick up to 2 foot hover

Check N1 Tach reading for:
2.1% reserve—normal take off
3.0 & reserve—confined area take off

If reserve insufficient for takeoff:
Set aircraft down
Reduce load 100 lbs for each .25% GP required.

Continue and recheck until desired power difference is obtained.

ANTICOMPRESSOR STALL TECHNIQUE

Do not reduce lower than 74 percent N1 speed when decreasing power.

AIR CAVALRY QUALIFICATION SOP

To remain air cavalry qualified, a squadron aviator must perform the following semiannually:

1. UH-1 and AH-1 series (with an IP).

    a. Make a minimum of three successful night landings to a minimum lighted area without the use of a glide slope indicator, and a minimum of three successful landings with the glide slope indicator.

    b. Fly a minimum of 3 hours hooded instrument.

    c. Fly a minimum of 1 hour night formation (at least one IP in the flight).

    d. Perform minimum of three satisfactory low-level autorotations.

e. Operate at, or simulate, maximum gross load.

2. OH-6 (with an IP). Perform same items as above with the exception of hooded flight.

AIRCRAFT COMMANDER TIME

Only officers appointed on squadron orders may log aircraft commander time and then only when they are in actual command of a formation or section in the performance of a mission. When two or more sections are flying together as a part of a larger element or formation, the commander of the larger element or formation and the individual section commanders within the element may log aircraft commander time.

AIRCRAFT AND VEHICLE IDENTIFICATION MARKING

1. Aircraft: Aircraft will be marked in accordance with current DA regulations and local SOP.

2. Vehicles:

   a. Vehicles will be marked in accordance with current DA regulations.

   b. Vehicle Bumper Markings: To facilitate identification, wheel vehicles are assigned bumper numbers as follows:

NUMBER	ASSIGNMENT
1	S-1
2	S-2
3	S-3, Troop Opns
4	S-4, Troop Supply
5	Sqdn/Trp XO
6	Sqdn/Trp CO
7	Sgt Maj/1st Sgt
8	Maint Officer
9	Air Opns/Safety Officer
10	Commo Officer
11-19	Scout Platoon Vehicles
21-29	Weapons Platoon Vehicles
31-39	Rifle Platoon Vehicles
41-up	Supl Svc Vehicles

BLANK

BLANK

MANDATORY EQUIPMENT

Aircraft	Vehicle Equip.
5-gallon can of water	1 day's ration per man
C-Rations (two cases per UH-1H) (One case per UH-1B/C AH-1G, and OH-6.)	Basic load of ammo
Basic load of ammo	Smoke grenade (one each purple, red, and yellow)
Smoke grenades (two each purple, red, and yellow)	Pencil flare w/flares (three each red, green, and white)
Pencil flare w/flares - carried by pilot (three each red, green, white)	One SOI extract
One SOI extract	One first aid kit
Maps of operation area	One fire extinguisher (OEM)
One first aid kit per four people (OEM)	5-gallon can of gasoline
One fire extinguisher (two in UH-1) (OEM)	Acetate covered load list
Survival kit (one per crewmember)	5-gallon can of water
One pair baton flashlights	M-79/ammo
Sleeping bag (one per crewmember)	
One radio, PRC-25 per autonomous unit (sect, plat, team)	
POL pump, with hose and coupling (for independent missions)	

TABLE OF WEIGHTS, COMMON ITEMS

NOMENCLATURE	QUANTITY	WEIGHT
C-Rations	Case (12 meals)	25 lbs.
Water	5 gal	31 lbs.
Water	250 gal drum	2550 lbs.
JP-4	500 gal	3500 lbs.
Mogas	500 gal drum	3250 lbs.
Diesel	500 gal drum	3800 lbs.
1100 Avoil	5 gal can	40 lbs.
1100 Avoil	55 gal drum	450 lbs.
OE-30	5 gal can	40 lbs.
Diesel	55 gal drum	400 lbs.
Mogas	5 gal can	35 lbs.
JP-4	250 gal drum	2000 lbs.
Sandbags	2000	660 lbs.
Barbed wire	400 yds	1035 lbs.
Concertina	50 ft	50 lbs.
Ctg 7.62mm Blk, MLB	800 rds	59 lbs.
Ctg 7.62mm Blk, Ctns	920 rds	50 lbs.
Ctg 5.56mm Ctns	1440 rds	57 lbs.
Ctg 45 Cal Ball, Crate	2000 rds	111 lbs.
Shell, 106mm RR, Heat	each	60 lbs.
Shell, 81mm Mortar HE, M43A1	each	17.8 lbs.
Hand grenades, frg, MK II	25 each	50 lbs.
Mine, AT M15	each	49 lbs.
Mine, AP M16	each	11 lbs.
Missile AGM-22B (SS-11) Heat	each	64 lbs.

TABLE OF WEIGHTS, COMMON ITEMS - Cont.

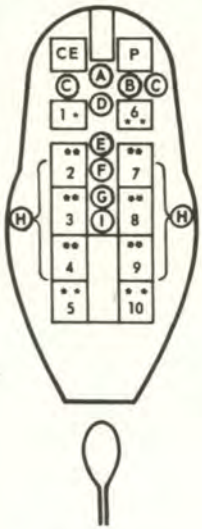
NOMENCLATURE	QUANTITY	WEIGHT
Missile AGM-22B (SS-11) Heat	In crate	101 lbs.
40mm grenade, linked	50 rds	53 lbs.
40mm grenade	each	.75 lbs.
40mm grenade	6 rds Bandolear	3 lbs.
2.75-inch rocket, 10-lb head	each	20.56 lbs.
2.75-inch rocket, 10-lb head	4-rd box	141 lbs.
2.75-inch rocket, 17-lb head	each	27.85 lbs.
2.75-inch rocket, 17-lb head	4-rd box	175 lbs.
Rifle, M-14	each	9.5 lbs.
Rifle, M-16	each	7.6 lbs.
M.G. M-60w/tripod	each	43 lbs.
Barrel, 81mm mortar	each	28 lbs.
Bipod, 81mm mortar	each	40 lbs.
Base plate 81mm mortar	each	25.5 lbs.
Rifle, 106mm recoilless with mount	each	457 lbs.
Truck 1/4T M151	each	2425 lbs.
Trailer 1/4T M416	each	570 lbs.
Mule (empty) M274A1	each	927 lbs.
Sputnik fire extinguisher	each	1250 lbs.
Fire extinguisher	each	195 lbs.
Fuel pump with hoses (35 GPM Kenco)	each	45 lbs.

TABLE OF WEIGHTS, COMMON ITEMS - Cont.

NOMENCLATURE	QUANTITY	WEIGHT
Generator, 1.5 KW 120/A.C.	each	120 lbs.
Radio, PRC 25 w/battery	each	24.7 lbs.
Radio, VRC 46	each	105 lbs.
Radio, VRC 47	each	135 lbs.
Radio, VRC 48	each	165 lbs.
Radio, VRC 49	each	220 lbs.

LOADING

Example
UH-1H Loading Plan



A - Smoke grenades.
B - PRC-25.
C - Crew bedrolls and survival kit.
D - Water can (5 gallons).
E - Toolbox.
F - Fuel pump and OEM
G - C-rations (two boxes.
H - Individual packs, bedroll survival, kits of riflemen (under each seat).
I - M-79 (on bulkhead).

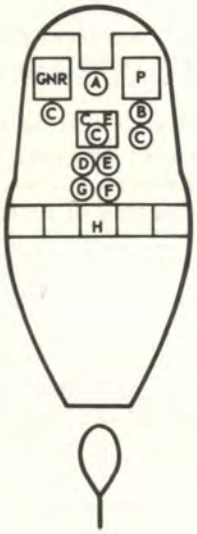
(See mandatory equipment checklist.)

Fire Team "A"	Fire Team "B"
1 - Squad ldr	6 -
2 -	7 -
3 -	8 -
4 -	9 -
5 -	10 -

*Seats face forward
**Seats face outboard

Figure 28

(UH-1B/C)
Loading Plan



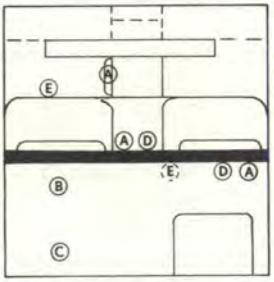
A - Smoke grenades.
B - PRC-25.
C - Crew bedrolls and survival kits.
D - Water can (5 gallons.
E - Toolbox.
F - Fuel pump and oil equipment.
G - C-rations, one box.
H - M-79/ammo on bulkhead.

All equipment securely fastened.

(See mandatory equipment.)

Figure 29

Loading Plan
OH-6A



A. Smoke grenades.
B. Rations.
C. Bedrolls.
D. Survival kits.
E. M-79/ammo.

(Items will be secured by tape, rope, webbing, or a combination of all three.)

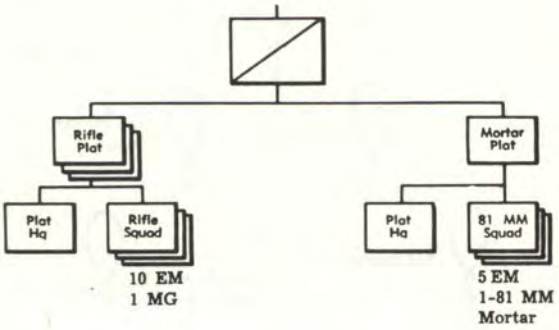
NOTE: Individual weapons, SOI, pencil flare, canteen with water will be carried by individual.

Maps and related items will be stowed at crew discretion.

Scout platoon leader will coordinate with maintenance/supply aircraft (or other available aircraft) for delivery of additional items as the mission necessitates.

LOADING CAVALRY TROOP
(For Movement in Army Aircraft)

Scramble 3



Primary Lift. (CH-47)

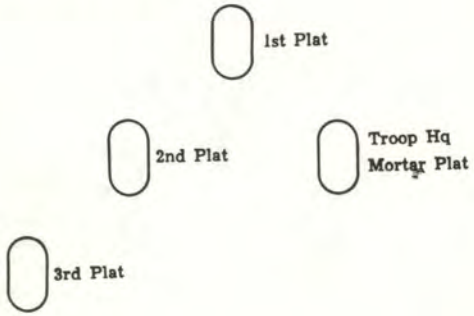
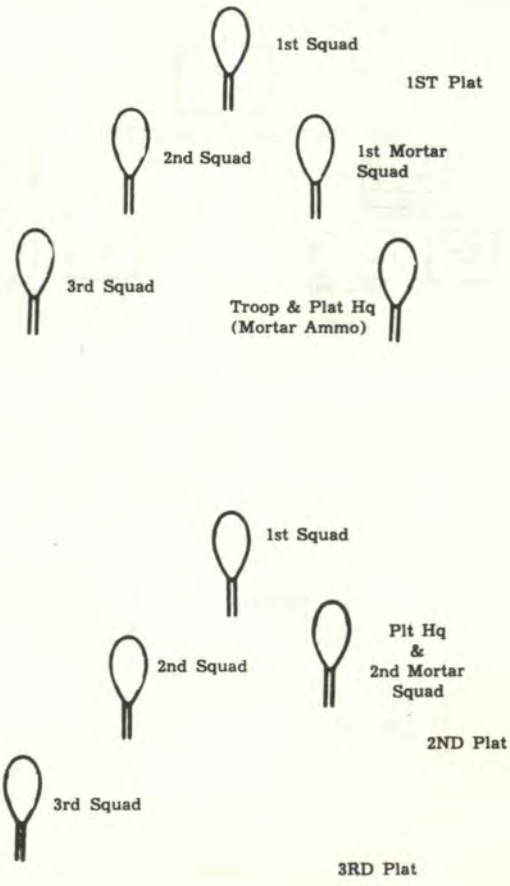


Figure 31

Scramble 3 Cont'd
Secondary Lift Method (UH-1D)



(Same as for 2nd Plat.)

Figure 32

Scramble 4

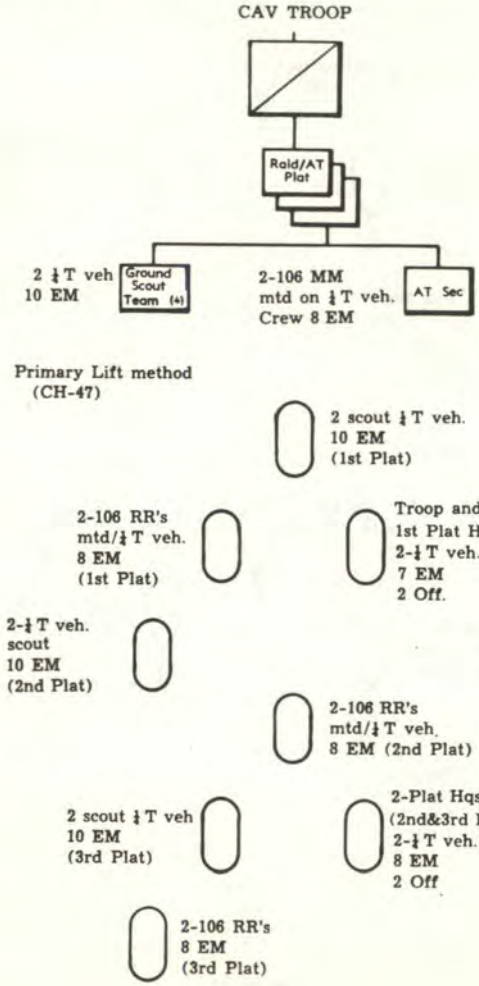


Figure 33

Scramble 4 cont'd

Secondary Lift method (UH-1D w/48' rotor)

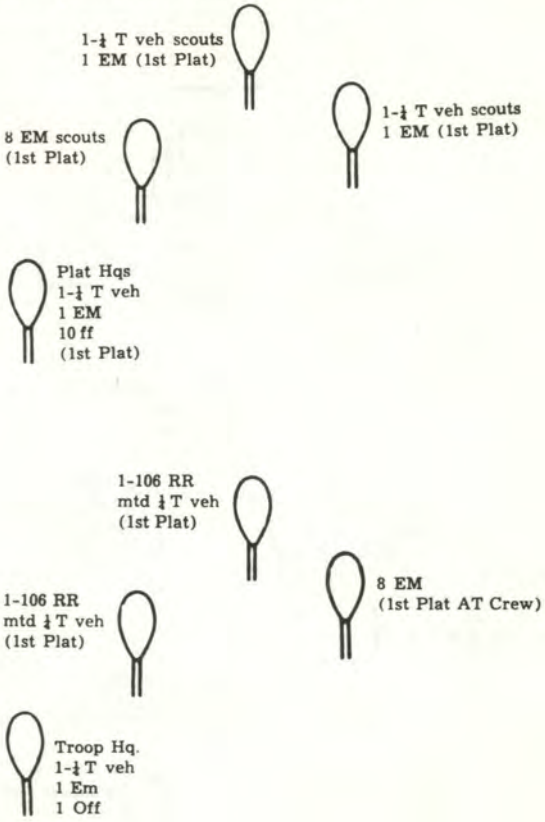


Figure 34

Scramble 4 cont'd

Secondary Lift method cont'd.

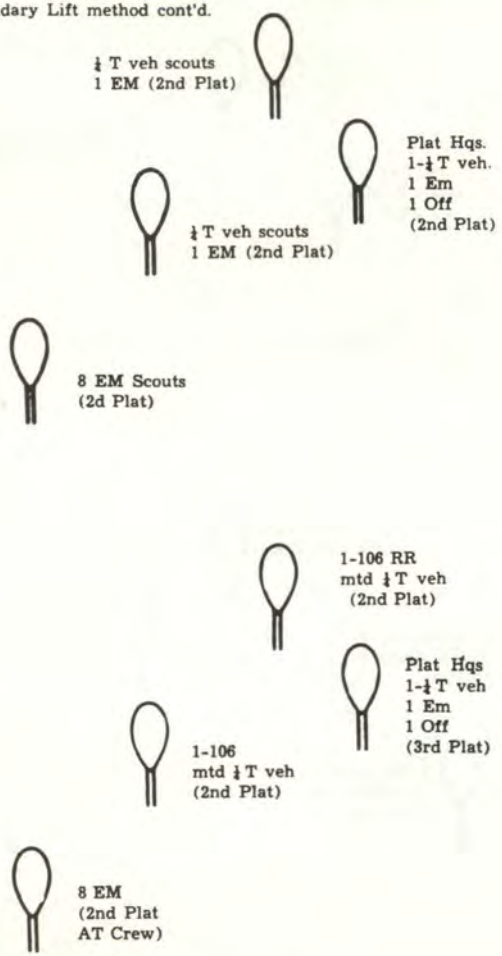


Figure 35

Scramble 4 cont'd
Secondary Lift method

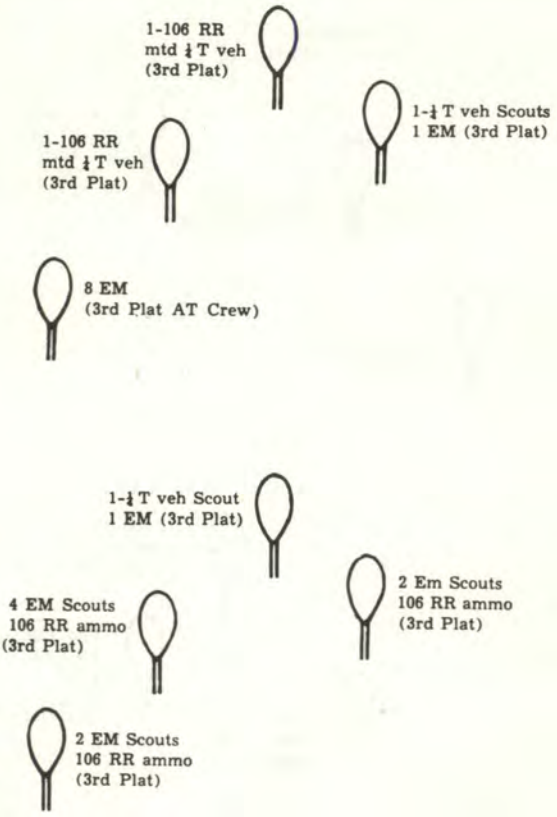


Figure 36

COMMUNICATIONS

RADIO MONITORING RESPONSIBILITIES

Elements	Nets	Type Radio
Sqdn CO	Div Cmd	FM
	Sqdn Cmd	FM
	Sqdn Cmd	UHF
	As required	FM
Sqdn XO	Div Cmd	FM
	Sqdn Cmd	FM
	Sqdn Admin Log	FM
Sqdn Opns	Div Cmd	FM
S-2/S-3	Div Cmd	SSB
Air Opns O	Div Opns/Intel	FM
Commo O	Div Opns/Intel	SSB
	Sqdn Cmd	FM
	Sqdn Opns/Intel	FM
	Sqdn Opns/Intel	SSB
Sqdn Base	Div Admin Log	SSB
Adj	Sqdn Cmd	FM
S-4	Sqdn Admin Log	FM
Maint O		
Chap		
Flt Sgn		
Hq Trp CO		
Air Trp CO	Sqdn Cmd	FM
	Trp Cmd	FM
	Trp Cmd	UHF
	As required	FM
Grd Trp CO	Sqdn Cmd	FM
	Trp Cmd	FM
Trp Opns	Sqdn Cmd	FM
	Sqdn Opns/Intel	FM
	Sqdn Opns/Intel	SSB
	Trp Cmd	FM
	Trp Opns/Intel	FM
	Sqdn Admin/Log	FM

SQUADRON RADIO EQUIPMENT

Radio	Type	Location	Freq Mc	Avg Range Miles	Sqdn	Troop A	Troop B	Troop C	Troop D
*ARC-54	FM	All acft	30-69.95	20-30	7	27	27	27	0
*ARC-73A	VHF	All acft	108-151.9	20-25	7	27	27	27	0
*ARC-55/51BX	UHF	All acft	225-399.9	20-25	7	27	27	27	0
VRC-46	FM	1/4-3/4	30-76	16-20	3	2	2	2	14
VRC-47	FM	1/4-3/4	30-76	16-20	3	2	2	2	2
VRC-48	FM	1/4-3/4	30-76	16-20	9	2	2	2	5
VRC-49	FM	UH-1B(D) 1/4-3/4	30-76	16-20	1	1	1	1	1
@GRC-106	SSB	1/4-3/4	2-30	250	4	1	1	1	1
PRC-25	FM	Pack	30-76	3-5	3	18	18	18	6
GRC-125	FM	1/4-3/4	30-76	12-15	0	1	1	1	15
VRC-10	UHF	Pack	121.5-243	5	6	27	27	27	0
*VRC-24	UHF	1/4-3/4	225-399.9	15-20	1	1	1	1	0
PRC-47	SSB	Pack	2-12	250	2	2	2	2	4

*Aircraft radios. (Range varies with altitude.)

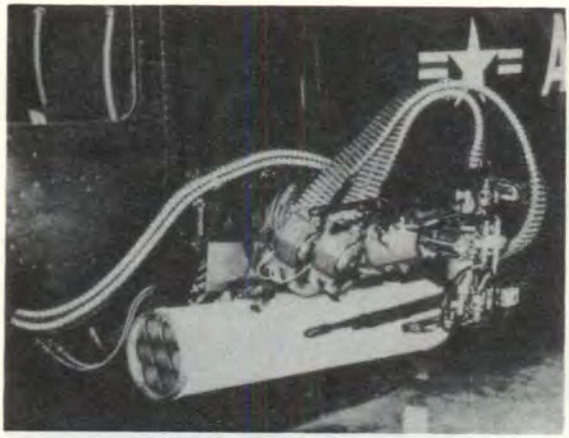
@8 MRC 95 ILO GRC-106 and VSC 2, MRC 95 has same characteristics as VSC 2/ GRC-106.

WEAPONS DATA

DATA

Weight wo/ammo	96 pounds
Weight w/ammo	276 pounds
Ammo capacity	2000 rounds
Maximum effective range	1000 meters
Vertical limits	+10°, -24°
Azimuth	Fixed
Rate of fire	2000/4000 spm

M-16



DATA

Weight wo/ammo	604 pounds
Weight w/ammo	1294 pounds*
Ammo capacity, 7.62mm	6700 rounds
Ammo capacity, 2.75mm	14 rounds
Vertical limits, MG only	+15°, -60°
Azimuth outboard, MG only	70°
Azimuth inboard, MG only	12°
Rate of fire, each MG	550 spm
Rate of fire, rockets	6 pairs/sec
Max. effective range, MG	750 meters
Max. effective range, rockets	2500 meters

*Weight with 10-pound warhead.

DATA

Weight wo/ammo	674 pounds
Weight w/ammo	1346 pounds
Ammo capacity, 7.62mm	6400 rounds
Ammo capacity, 2.75mm	14 rounds
Vertical limits, MG only	+10°, -85°
Azimuth outboard, MG only	70°
Azimuth inboard, MG only	12°
Rate of fire, MG	4000/4800 spm
Rate of fire, rocket	6 pairs/sec
Max. effective range, MG	1000 meters
Max. effective range, rocket	2500 meters

M-22

DATA

Weight wo/ammo	249 pounds
Weight w/ammo	682 pounds
Missile capacity	6
Missile weight	64.5 pounds
Maximum missile speed	425 mph
Maximum effective range	3500 meters
Minimum effective range	500 meters
Armor penetration	23 inches

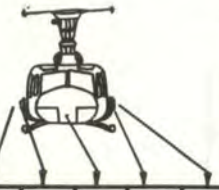
Wire guided

M-23

DATA

Weight wo/ammo	54.5 pounds
Weight w/ammo	96.5 pounds
Ammo capacity, each gun	600 rounds
Rate of fire	550 spm
Maximum effective range	750 meters

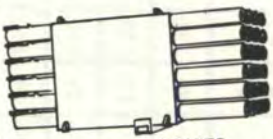
UH-1B/C Armament System Data



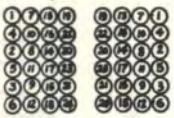
					Take-off Gross Weight	Fuel - Lbs.	Expendable Ordnance - Lbs. #	7.62 mm Rounds *	40 mm Rounds	2.75" FFAR	AGM-22B Guided Missiles	Smoke Grenades	Time-on-Station	Max. Range (N.Mi.)	V_{max} (Knots)
XM134	M158	----	M158	XM134	9500	1400	847	8400	----	14	---	24	2:00	284	132
---	XM159	M5	XM159	---	9500	1200	1186	2000	300	38	----	24	1:30	279	131
----	XM3	----	XM3	----	9500	1200	1167	2000	----	48	----	24	1:30	279	131
----	M22	----	M22	----	9116	1537	514	2000	----	----	6	24	2:30	298	131

Includes ## Computed 2000 Using Rounds 7.62 For Door Gunner. XM181 Warhead.

XM 3

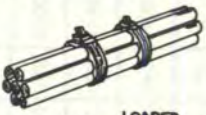


FIRING ORDER (AFT END)



EMPTY		w/ M151 LOADED		w/XM 229	
WT.	C.G.	WT.	C.G.	WT.	C.G.
148.4	31.22	645.8	23.94	816.1	19.07

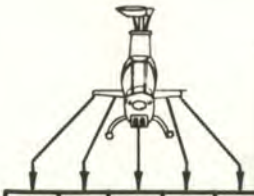
XM158



FIRING ORDER (AFT END)

EMPTY		w/ M151 LOADED		w/XM 229	
WT.	C.G.	WT.	C.G.	WT.	C.G.
41.60	28.88	187.0	23.70	236.5	18.34

AH-1G Armament System Data



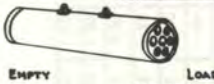
					TAKE-OFF GROSS WEIGHT*	LBS FUEL	EXPENDABLE ORDNANCE-LBS.*	7.62 MM RDS.	20 MM RDS.	40 MM RDS.	2.75" FFAR	SMOKE GRENADES	TIME-ON-STATION	MAX. RANGE (S.L./5000') NMI	VMAX. (KNOTS)
XM157		XM28		XM157	8593	1600	815	4000		300	14	12	2:25	349/394	
XM157	XM18	XM28	XM18	XM157	9323	1600	975	7000		300	14	12	2:20	332/363	
XM157		XM28	XM35	XM157	9500	1228	1495	4000	1060	300	14	12	1:30		
XM159		XM28		XM159	9194	1600	1330	4000		300	38	12	2:20	334/366	
XM159	XM18	XM28	XM18	XM159	9500	1176	1490	7000		300	38	12	1:20	229/252	
XM159		XM28	XM35	XM159	9500	627	2010	4000	1060	300	38	12	0:30		
XM157	XM159	XM28	XM159	XM157	9500	1416	1634	4000		300	52	12	1:50	268/282	
XM159	XM159	XM28	XM159	XM159	9500	914	2052	6000			76	12	1:00	124	

*WTS COMPUTED USING XM151 WARHEADS

AH-1G Wing Stores Data

WING STORES

XM157 B



EMPTY

WT.	C.G.	LENGTH	DIA.
51.80	34.44	49.88	9.81

LOADED

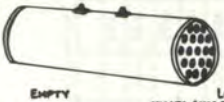
w/ XM151/XM425

WEIGHT	C.G.
197	19.38

XM229/XM425

WEIGHT	C.G.
244.5	13.97

XM159 C



EMPTY

WT.	C.G.	LENGTH	DIA.
113.6	24.9	49.78	15.66

LOADED

XM151/XM425

WT.	C.G.
508	19.88

XM229/XM425

WT.	C.G.
642.8	13.48

XM18/XM35

XM18 .762MM.

AMMO CAPACITY	MUZZLE VEL.	W.T. LOADED	W.T. EMPTY
1500RDS	2850FPS	320 LB	240 LB

XM35 20MM.

AMMO CAPACITY	MUZZLE VEL.	W.T. LOADED	W.T. EMPTY
1060RDS	3350FPS	279 LB.	599 LB.

RATES OF FIRE

XM157 B
6 ROCKETS PER POD PER SEC. (RIPPLE)

XM159
6 ROCKETS PER POD PER SEC. (RIPPLE)

XM18
SLOW.....2000 SPM
HIGH.....4000 SPM

XM35 *
SLOW.....700 SPM
HIGH.....1500 SPM

* MAY GO WITH SHORT BARREL VERSION WITH 500 SPM RATE OF FIRE ONLY.

XM-28 TURRET

AMMO CAP.	RATE OF FIRE	WEIGHT LOADED	WEIGHT EMPTY
1-M134		1-XM129	
4000 7.62 300 40MM	7.62: 1300(MAX) 40MM: 400	884.5	401.5
2-XM129			
600 40MM	800 (BOTH)	867.4	417.4
2-M134			
8000 7.62MM	MIN.(NOM.) 1300 MAX.(2 GUNS) 8000	898.4	378.4

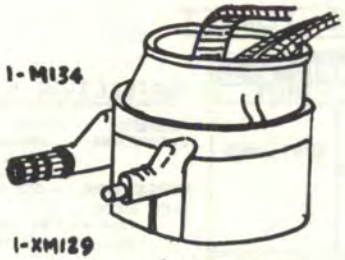
DEFLECTION LIMITS

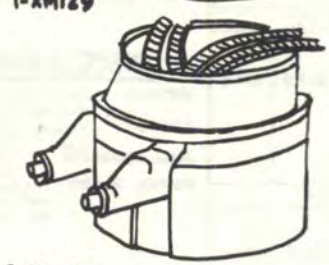
AZIMUTH 107.5° L&R &
ELEVATION VARIABLE
MAX. — 17.5°
MIN. — 10°
DEPRESSION — 50° ALL POSITIONS
SLEW RATE
AZIMUTH — 80° PER SEC.
ELE.-DEP. — 60° PER SEC.

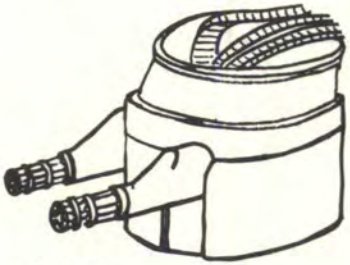
MISCELLANEOUS

WEIGHT: EMPTY-5510 LB (APPROX)
MAX. OP.-9500 LB.
SPEED: V_{CRUISE} - 165 K (CLEAN)
V_{DIVE} - 190 K
FUEL CAPACITY 246 GALS.
(1600 LB.)
POWER PLANT LYCOMING T53-L-13
1400 HP FLAT-RATED
TO 1100 SHP

AH-1G, XM-28 Turret Configurations







AH-56A Armament System Data

XM159	XM159	XM153	XM152	XM159	XM159		460	3:15	---	76	---	2010	11570	4078	2847	23432
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XM159	XM159	XM153	XM152	XM159	XM159		435	3:05	---	152	---	2010	11570	5638	2847	25464
XM26	XM159	XM151	XM152	XM159	XM26		490	3:30	6	38	780	2010	---	3719	2847	23016
						V_{max} KNOTS	MAX. RANGE N MI	TIME ON STATION	TOW MISSILES	2.75" FFAR	40mm RNDS	30 m.m. RNDS	7.62 mm RNDS	LBS. EXPENDABLE ORDNANCE*	LBS. FUEL	TAKE-OFF GROSS WEIGHT*

*WTS COMPUTED USING XM151 WARHEAD

LESSONS LEARNED

LESSONS LEARNED

I. General Norton's Five Points:

A. Scouts Out:

Proper security for advancing or static units is a paramount feature of successful operations in order to provide early warning of enemy positioning to the main force. This is true from the smallest unit to the largest unit. We have to protect our front, flanks, and rear.

We have seen company size elements approach a dug in enemy and not be aware of the fact that they were on top of the enemy until the whole company was within five meters of the enemy and came under murderous fire. As a result many unnecessary casualties were inflicted upon us and we were not able to mass our superior firepower to defeat the enemy without the loss of many lives.

On the contrary we have seen point men and flank security guards by being far enough out front or to the flank able to warn the main force of enemy positioning so that we could properly employ all means available to us to defeat the enemy without the loss of unnecessary casualties.

By the same token by using scout helicopters screening to the front, flanks, and rear of advancing friendly elements we have been able to detect enemy positioning and movements. Then by employing fire and maneuver we have been able to defeat the enemy in detail by sealing him off.

The most important point here is to insure that scouts are used in any and every size operation. You can never consider yourself secure or your unit properly protected unless you use scouts. By using scouts, you can insure that you

have taken every means available to you to surprise the enemy rather than being surprised yourself.

B. Dig In:

Much has been written in previous wars about this subject and it is still true today that a hole along with a rifle is the infantrymen's best friend. We cannot afford to miss any opportunity to use all cover and concealment that is available. While in static positions we must continue to prepare and improve our positions. Our enemy are masters at executing surprise mortar attacks against friendly positions. If we do not use all means available to us then we can expect to lose casualties.

If we stay in a position for more than one night then we must dig new positions and not occupy the same positions night after night. We cannot afford to be lax in internal security as the enemy is quick to capitalize on our errors when we establish discernible patterns of defense.

C. Fire Support:

We have a very definite superiority of fire support available to us. We have light and heavy artillery, quick response Aerial Rocket Artillery, our own organic weapons ships, and Tactical Air on a preplanned or immediate basis. However, we have been remiss at times in using all the means available to us to gain an immediate advantage over the enemy.

We cannot afford to get so closely engaged with the enemy who is in defensive positions that we are unable to bring our superiority of fire power to bear to defeat him. He likes nothing better than to get us engaged on a close-in man to man basis so that we are at a disadvantage.

The use of artillery has and will definitely decrease the loss of US personnel and will always be an asset to any infantry operation. The tactic is not a new one, but rather has been tailored to fit the AIRMOBILE role in this instance. Whenever possible, all artillery supporting fires should be fired into and around points of air assault insertions. These concentrations should be catalogued and the information should be immediately available to the forces on the ground and to aircraft assisting in the movement of forces. For ease in identification, concentrations should be placed on an easily defined terrain feature. Where time and the situation permits, the ground forces should adjust from these locations to firmly identify the concentration location. What may appear as an easily defined feature from the air is often obscured from view by ground forces.

The point of walking artillery fire to the front and flanks of advancing infantry should not be overlooked. The Viet Cong and NVA are extremely fearful of artillery. Walking fire to the front and flanks of our infantry not only offers them some degree of protection but it often causes us to be able to more quickly identify enemy positions by uncovering bunkers and hiding places and by causing him to break and run.

We have often found booby traps of all sorts in LZ's that we have previously used. The enemy expects us to use them again and he loses no opportunity to inflict casualties. As a result each LZ should have some preparation fires placed on it just prior to the infantry landing in order to destroy booby traps. By proper planning, surprise can still be gained.

Preplanned Tactical Air Strikes should be planned for each air assault operation so that this arm will be immediately available once the

troops are on the ground. Strikes can be planned based on current intelligence, exfiltration routes, or key terrain features expected to be occupied by the enemy. These preplanned strikes can be shifted to elements in contact to bring our firepower to bear upon the enemy. Immediate air strikes are available and should be used to the best advantage.

After the enemy positions have been thoroughly pounded by Artillery and Tac Air, ARA is available to use for close-in area fire just prior to and during the initial assault of the ground forces.

Organic weapons ships are available with the M5 and XM21 systems to give close-in support within 25 to 50 meters and to screen the area to kill anyone trying to escape.

The major point here is to use all fire support means available to you unhesitatingly and to insure that all personnel in positions of responsibility know how to solicit and employ all these means that are available.

D. Clean and Test Fire Weapons Daily:

Each individual and crew served weapon within a unit must be cleaned and test fired daily whether the unit is in combat, reserve, or on a standdown basis. There is no excuse for an individual or unit to have a weapon that is not functioning properly and not to know about it so that it can be replaced. The only way that we can insure that our weapons will function properly when required is to clean and test fire them daily. This is a point that requires supervision by each member in the chain of command. There is nothing more worthless than a weapon that will not fire in combat.

E. Keep the Troops Clean:

We have to insure that our troops are kept clean, fed properly, and take the proper preventive measures against malaria and other diseases in order to prevent as many non-battle casualties as possible. By insuring that we keep the troops clean and well fed we can cut down on such items as immersion foot, heat rash, diarrhea, and dysentery. We have to insist that they bathe and change socks as often as possible, and we have to insure that shots are kept up to date.

Malaria casualties in most cases are inexcusable. Preventive measures that must be taken by each individual are:

1. Take one Chloroquine Primaquine Phosphate Tablet once a week.

2. Take one Dapsone Tablet daily.

3. Spray living areas daily and generously with insecticide.

4. Sleep under mosquito nets.

5. Use mosquito head nets at night when in the field.

6. Keep sleves rolled down and collars buttoned at night.

7. Each man should have a bottle of insecticide in his possession at all times and use it freely when necessary.

The items mentioned above are by no means all inclusive; however, by observing proper field sanitation measures we can take care of our personnel properly and insure that we minimize non-battle casualties in order to have a more effective fighting force.

II. Reconnaissance By Fire:

Reconnaissance by fire has proven to be most effective in Vietnam. This includes both small arms and artillery reconnaissance by fire. By employing reconnaissance by fire we have seen the enemy spring ambushes prematurely and we have seen him give away his positions in the belief that he has been detected. This is not to say that reconnaissance by fire should be employed in every situation. This, of course, depends upon the unit's mission; however, it has proven to be very effective in search and clear and search and destroy operations.

III. Reaction Force:

When the Air Cavalry Troop employs its rifle platoon it is normally employed well forward, or isolated from the Division's infantry units and sometimes out of the range of tube artillery support. Should the Air Cavalry Troop's rifle platoon become heavily engaged an immediate reaction force is needed. The Division reserve battalion's immediate reaction company may be requested. Experience indicates that the immediate reaction company must be standing by the lift helicopters in a secure area in order to react fast enough to reinforce the platoon in contact. It has proved profitable to keep the reserve battalion headquarters informed of the times the rifle platoon takes off from the laager site, lands in the LZ, makes initial contact, and is extracted. This notification results in concurrent planning toward commitment of the reaction company and the entire reaction battalion if the situation proves worthwhile.

When an air cavalry troop is operating in support of a Brigade, it has proven profitable for the Brigade to have a reaction company available to assist in the development of the situation by the

air cavalry troop. If necessary the lift section of the air cavalry can standby with the immediate reaction platoon of this company and be ready for instantaneous employment.

When the Squadron operates with two or more troops under brigade or division control it maintains a reaction platoon within the squadron. This is accomplished by phasing the ground reconnaissance missions so that at least one platoon within the squadron is in reserve while the others are committed. The lift sections within the squadron are controlled so that one section is always available to transport the reaction platoon.

The important point as far as a reaction force is concerned is that the response of the reaction force has to be immediate. The reaction force should be able to pull pitch within a maximum time limit of five minutes in order to be effective.

Experience has proven that the Air Cavalry Squadron starts the majority of the major battles within the Division. As a result of a reaction force with an immediate response time is necessary in order to capitalize on the contact made by this unit.

IV. The Liaison Officer:

The squadron or troop liaison officer who represents the unit in dealing with staff officers and commanders is a key in an air cavalry unit. This is one of the most important jobs in an air cavalry unit and great care must be exercised in selecting an individual to perform these duties. The officer selected for this assignment must have sufficient knowledge of squadron and troop operations to enable him to advise on the capabilities and limitations of his unit. A working knowledge of armored cavalry tactics, upon which air cavalry has added a vertical dimension, provides a common

point of reference for discussion. An officer who has experience in an air cavalry unit including scout, weapons, lift or rifle platoons is in a better position to represent his troop or the squadron. A concise reference manual like this one is invaluable in presenting the organization, equipment, and techniques of air cavalry.

V. Immediate Exploitation of POW's:

Since intelligence gathering is one of the primary missions of the Air Cavalry Squadron then we have to get immediate information from POW's. The majority of intelligence that is gathered within the division comes from this unit. As a result we have to use all means available to us to evacuate POW's and documents immediately to Division IPW. We also have to insure that we make aggressive follow up to obtain information back from IPW in order to exploit any information that they have obtained from POW's or documents.

Delayed or late intelligence is of no benefit to a unit whatsoever. If possible, it is advisable to attach an IPW team to Squadron Headquarters for intelligence gathering purposes. This insures that information received will be immediately available to the air cavalry troops and to the cavalry troop.

VI. Employment of the Squadron in a General Support Role:

In the non-conventional type warfare against a guerilla force, the brigades of the division are normally given an area, rather than a zone, in which to conduct a search and destroy operation. This type operation was conducted in Thayer I and subsequently.

During these operations, the Cavalry Squadron, while being retained under the control of the division, was assigned the mission of providing

support to the brigades. Sometimes priorities of support were assigned. To accomplish this task, the squadron normally assigned one troop to support each brigade in their respective zones. At times one troop was assigned to support two brigades or two troops were assigned to support one brigade depending upon priorities. This also allowed the squadron commander to keep under his control one or more troops in order to perform division missions.

This type of employment proved to be a very effective method of providing the desired support. The troops maintained close liaison with the supported brigades and responded to the missions requests of the brigades.

Spot reports are submitted by each troop to both the supported brigade and the squadron. This enables both units to formulate their schemes of maneuver based on the reports of enemy action.

Prisoners which are captured by the supporting troop in a brigade sector are transported to the brigade interrogation team to develop the intelligence situation in that brigade area of operations. Prisoners which are captured outside of the brigade area of operations are transported to the Division IPW team.

This technique of employment is much more flexible than placing the troops under the operational control of the brigade. In the support role the squadron retains the flexibility to shift effort from one troop to another as the enemy situation dictates such a requirement.

The squadron in such employment not only provides better support to the committed brigades but is better able to react to division targets of opportunity developed as a result of current combat intelligence.

VII. Prestock of Fuel and Ammunition:

Quite often in airmobile operations we find ourselves operating well forward of base areas where fuel and ammunition are immediately available. As a result it is a necessity that we prestock fuel and ammunition at selected sites throughout the area of operations in order that our aircraft have a quicker response time and so that there is not a waste of flying time merely in moving from one point to another. Any method that we can use to eliminate unnecessary flying time and give us a quicker response is money saved.

VIII. Duplication of Effort.

On several occasions when a unit has been in contact or when a suspect CP has been identified weapons and/or scout teams have been called for on an immediate basis for weapons support and/or for screening or reconnaissance. When the teams arrived at the location, artillery was being fired into the area and they have had to orbit for an hour or more prior to being able to get into the area to perform the requested mission. As a result, time was wasted as well as fuel.

The solution to this problem is not an easy one. There are many coordination problems involved. We have to insure that we make every effort to educate personnel wih whom we are working as to our capabilities and limitations and to the need for proper coordination.

The liaison officers and the commanders can insure that problems of this nature are kept to a minimum by direct and personal coordination on a daily basis and by bringing problems of this nature to the attention of the supported unit.

COMMANDER'S COMMENTS

COMMANDER'S COMMENTS

I. Exchange of Information:

In the counterinsurgency environment in which we find ourselves operating there are many Allied units throughout our area of operations. There are CIDG camps spread throughout, ARVN units and outposts, ROK units, and the local civil government. We must make a determined effort to establish a close working relationship with all Allies. It certainly benefits us in our combat operations in that all of these elements are able to give us intelligence information that would take us many weeks and possibly months to acquire without their assistance. The leaders of the local civil government can be of utmost benefit to us in identifying enemy personnel and undesirables. Exchange of information, keeping in mind proper security measures, is of utmost benefit to us in accomplishing our primary mission of defeating the enemy.

II. Direct Coordination Between Commanders:

A point that cannot be overemphasized is the need for direct and personal coordination between the troop commander and the brigade and battalion commanders within whose area of operations the troop commander is working. In order to be more effective the troop commander must get to know the brigade and battalion commanders whom he is supporting. Detailed information can and must be exchanged between the liaison officer and staff; however, the overall concept of operations must be discussed on a continuing basis between commanders. The commanders must get together on the support available, the support required, and the major areas of interest within the area of operations. We have found that our operations against the enemy are much more effective when the above is accomplished.

III. Continuous Maintenance:

Volumes have been written on the need to properly maintain equipment, both personal and crew served equipment. We do not have any revelations within this field; however, we do feel that the following points should be emphasized:

a. Each person within the chain of command must take a personal interest in the maintenance of equipment.

b. Make daily spot checks of maintenance.

c. Make on the spot corrections.

d. Have unannounced Technical Inspections of selected items of equipment. This can be accomplished at troop level.

e. Set up an around the clock maintenance program for aircraft.

f. Insure direct coordination between troops and the direct support maintenance activity.

g. Set up classes at troop level to train new personnel.

h. If possible, have new crew chief personnel spend a couple of months in the troop headquarters maintenance section prior to being assigned to crew their own aircraft. This way you can insure that they are trained under the supervision of the maintenance officer, the maintenance sergeant, and qualified technical inspectors.

i. The majority of the malfunctions that occur on the aircraft weapons systems are a direct result of improper cleaning of the weapons system and/or ammunition. As a result you have to insure that the weapons systems are cleaned and inspected as often as possible and not less than daily. In most cases, aircraft armorers are not trained prior to arriving in country and they must be properly trained at unit level.

The only way that a unit can effectively perform its assigned mission is to insure that its equipment is operating properly. In combat we cannot afford to have equipment that malfunctions; therefore, each person within the unit must be maintenance oriented, maintenance trained, and maintenance proficient.

IV. Employment of Aero-Rifle Platoon:

The aero-rifle platoon is an extension of the reconnaissance means available to the air cavalry troop commander. The insertion of this platoon, in most cases, should occur upon discretion of the air cavalry troop commander into a limited area of search for a restricted period of time. As an integral part of a reconnaissance oriented unit, the platoon should be utilized to develop a situation.

Instances have occurred and more than likely will continue to occur where the supported commander envisions use of the aero-rifle platoon in a role similar to that of a rifle company, e.g., ground search over a vast piece of terrain for an extended period of time.

The aero-rifle platoon is a quick-reacting, flexible force with its own organic lift. It is most effectively employed throughout the area of operations reacting to current intelligence and reaching to targets developed by scout and weapons aircraft. Operating in this manner the platoon can cover a lot of territory in one day by being inserted numerous times in a reconnaissance and intelligence gathering role. The employment of the platoon in this manner has proven to be most effective as these platoons have started the majority of the major battles of this division.

This platoon should be sparingly employed at night in ambush and/or combat patrols. Day-

light reconnaissance is the primary role of this platoon and if they are continually used as a whole in night operations then the primary mission suffers and they are less effective.

V. Use All Means Available:

The air cavalry troop commander has at his fingertips the greatest abundance of fire power that this world has ever known. He has his own organic weapons platoon consisting of UH-1B and UH-1C helicopters mounted with M5 and XM-21 systems, light and heavy artillery support, aerial rocket artillery, naval gunfire (in some cases) and tactical airpower. By properly utilizing all of these means of fire support and the infantry elements immediately available to him he can fix the enemy and annihilate him, and at the same time assure the minimum of friendly casualties.

An example of a typical operation could be as follows:

a. Aero-rifle platoon makes contact.

b. Scout and weapons aircraft used to fix the enemy and prevent exfiltration. This continues throughout the operation.

c. Artillery concurrently being fired into enemy positions by being adjusted from a previously fired-in defensive concentration.

d. Infantry company concurrently inserted in best position to support aero-rifle platoon; and aero-rifle platoon now comes under the operational control of the infantry company commander, while the air cavalry troop commander retains control of all forces.

e. Artillery ceases fire while tactical airpower, either from an immediate request or a diverted preplanned strike, is used to destroy specific targets.

f. While artillery continues to be fired on the enemy positions, other infantry companies are inserted to completely encircle the enemy and cut off all exfiltration routes. At the insertion of the second infantry company control of the operation is passed from the air cavalry troop commander to the infantry battalion commander. The aero-rifle platoon can be extracted at this time in order to perform another mission or remain under the operational control of the infantry company commander depending upon the situation.

g. As the artillery fire is lifted or shifted and the infantry company/companies assault, aerial rocket artillery and weapons ships can be utilized to take close-in targets under fire as the infantry advances.

h. Scout and weapons ships continue to screen specific areas until the operation is complete.

VI. Artillery Raids:

The artillery raid, whereby an artillery battery is placed under operational control of the squadron, has proven to be an effective method to disorganize the enemy, to inflict casualties, and as an economy of force measure. Based upon current intelligence of enemy dispositions the squadron selects one or more landing zones to use as a fire base. At the appropriate time, one or more infantry platoons are landed on the LZ to secure it, and they are immediately followed by the artillery battery. By firing both observed and unobserved fires into an area within a matter of a few hours a devastating effect can be employed against the enemy.

With a beefed up fire direction center a firing battery is capable of firing three simultanous missions. Thus a large area can be covered and continuous fire can be maintained. The raid can be

accompanied by ground reconnaissance of selected areas or of targets of opportunity.

It is a most effective means to deny certain areas to the enemy, to gain surprise and keep him off balance, and to confuse him as to your intentions.

VII. Raids in a Counterinsurgency Environment:

The air cavalry squadron has a unique capability for conducting raids in a counterinsurgency environment. The lack of effective enemy air defense permits the squadron almost complete freedom of movement to any point in the area of operations. The squadron can penetrate deep into the enemy base areas and perform a raid type mission to capture prisoners, destroy key installations, or make a show of force, and depart with relative immunity from enemy counteraction.

Raids may be accomplished by the entire squadron or by one air cavalry troop. The depth of the penetration is usually limited only by the radius of action of the unit's helicopter. A typical raid might be to seize all military age males from a village deep within the enemy base area for intelligence and psychological exploitation. The air cavalry troop assigned the mission may be reinforced with one or more cavalry platoons in an airmobile role.

The air cavalry troop plans an air route to the objective which will permit surprise. A plan of search is formulated which includes designation of landing zones, boundaries, objectives, pick up zones, and time phasing. The fire support plan will include plans for support by organic aero-weapons teams, aerial rocket artillery, tube artillery (if in range) and tactical air. The aero-scout and aero-weapons platoons will furnish teams to screen the search area to prevent the escape of enemy forces.

The plan provides for evacuation of prisoners by the lift aircraft of the aero-rifle platoon by shuttling back to the IPW team at the division or brigade CP. A reaction force is maintained by squadron or higher headquarters to assist in the extraction of the committed platoons if they become heavily engaged or to exploit the situation if division resources permit.

VIII. Training of Aviator and Observer Personnel:

We have found it necessary to establish at squadron level a training program for newly arrived aviator personnel. This is to insure a level of standardization in the squadron of basic flying techniques and safe operating procedures. The newly assigned aviator normally requires ten hours total flight time to complete this program.

The tactical training is performed at troop level and this is accomplished on the job under actual combat conditions. The best method in the lift section and weapons platoon has been to assign a newly assigned aviator to fly with a seasoned veteran, and this normally takes anywhere from one to three months until the individual is able to assume command of his own aircraft and train a new crew. It normally takes this amount of time for a person to be thoroughly trained in scouting techniques, in area orientation, and in enemy orientation.

An aviator and crew have to be trained to remain alert for inconsistencies in an area and to identify areas of enemy movement or occupation. They must learn rapidly to seek indications of the enemy such as footprints on trails or in streams, fresh earth works, signs of increased travel along trails, roads, or cross-country, smoke or ashes from cooking fires, structures in areas where people would not normally live (based upon prior knowl-

edge of the customs of people of the host country), or increase or decrease of usual activities in an area. This is by no means all inclusive; however, this training must be accomplished while engaged in actual combat with no loss in operational effectiveness. This can be accomplished in minimum time with no loss in effectiveness by insuring that at least one of the aviators in the weapons and lift ships is experienced.

The same is true of the scout platoon as has been mentioned above for the weapons platoon and lift section. The only difference is that the scout crew consists of two men, an aviator and an observer. The observers, when they arrive in country, are by and large not trained as aerial observers. As a result the observer has to be placed with an experienced aviator for a period of time until he is acclimatized. The same is true of a new scout aviator. He must be placed with an experienced observer for a similar period.

IX. Continuity in Key Slots:

It is absolutely imperative that within the squadron that we cross train personnel in order that we always have a person ready to move into a key slot within the squadron and within the troops. There is a rapid turnover of personnel within the squadron due to rotation and to casualties. At troop level we have to insure that the executive officer is capable of taking over as troop commander and that within each platoon there is at least one officer capable of taking over as platoon leader or platoon sergeant at any moment. In order to insure no loss in combat effectiveness of the squadron for any period of time we must continue to identify and train outstanding individuals in order to maintain continuity within the chain of command. These personnel must be as well informed and as knowl-

edgeable about the daily tactical situation as the man that they would replace.

If the above is accomplished there will always be a smooth transition from one commander to the next and there will be no loss in combat effectiveness.

GLOSSARY

GLOSSARY

ABBREVIATIONS

ACFT	Aircraft
AR	Automatic rifleman
AT	Anti-tank
CC	Car cammander
CE	Crew chief
CMD	Command
CMDR	Commander
D	Driver
FPFP	Final protective fire plan
FRA	Forward refueling area (Sqdn)
FRP	Forward refueling point (troop)
G	Grenadier
GR	Gunner
GRND	Ground
HV	Heavy
LP	Listening Post
LT	Light
LZ	Landing Zone
M	M274 1/2T Carrier (Mule)
MG	Machine gun
MRTR	Mortar 4.2" or 81 mm
OP	Observation post
OPNS	Operations
PZ	Pickup zone
R	Rifleman
RKT	Rocket
RP	Release point
RR	Recoilless rifle
SCT	Scout
SE	Start engine
OEM	On equipment material (formerly OVM)
SL	Squad leader
SP	Start Point (formerly IP)
SPT	Support

SQD	Squad
SQDN	Squadron
SSB	Single-side band radio
SUP	Supply
SVC	Service
TL	Team leader
TOC	Tactical operations center in helicopter
WPNS	Weapons
M-16	Combination, quad 7.62mm machine gun and rockets (UH-1 series)
M-21	Combination, flexible 7.62 minigun and 2.75 rocket system (UH-1 series)
M-22	Antitank guided missile weapons system (UH-1B)
M-23	Door mounted M-60 for use on lift aircraft (UH-1D)
M-27	One 7.62 minigun (OH-6)
XM-18	7.62 minigun wing store pod (AH-1G)
XM-28	Chin turret (AH-1G)
XM157B	7-round rocket pod wing store (AH-1G)
XM159C	19-round rocket pod wing store (AH-1G)
XM158	7-round rocket pod, M-16/21 system (UH-1B/C)

GLOSSARY

DEFINITIONS

ARA — Aerial Rocket Artillery. The ARA Battalion consists of three batteries each composed of 12 assigned helicopters armed with the M-3 weapons system.

Cross Loading — Separting key personnel and equipment to prevent the loss of an entire element or function in case of an aircraft accident or destruction by enemy action.

Deliberate Ambush — Encompasses all the elements of a hasty ambush but is preplanned for conduct at a specific location along a known or suspected avenue of enemy advance.

Hasty Ambush — An ambush which uses a combination of scout, weapons, rifle and cavalry elements to locate, fix and destroy a moving enemy force with minimum advance notice or prior planning.

TOC — Tactical Operations Center. Location of the S-2/S-3, liaison officers and related personnel and equipment necessary to maintain the situation map and operate radios.

Hideout — A relatively secure location near the area of operation where aircraft can land to conserve fuel and prevent observation by the enemy while awaiting commitment.

Laager Area — An area with a perimeter type defense for local security of aircraft on the ground. Established by aircraft crews in conjunction with any troops in the area. Armed aircraft are positioned so that the weapons can be used in the defense of the perimeter. Area should be inaccessible to enemy forces.

Mission Ready — Used to describe a helicopter and crew which is completely capable of performing its combat mission. Requirements are: flyable condition, operational radios, full fuel tanks, functional weapons with adequate ammunition and a complete, trained and briefed crew in physical condition to perform the mission.

Minimum Standard — Squadron requirement of 82% aircraft availability within each troop.

Orbit Point — Location in relation to the target where aircraft orbit at low level while awaiting commitment.

BASIC SYMBOLS

CH47

UH-1D

UH-1B

OH-13S

Radio

Night Light

Flashing Approach Light

106 RR

Mortar

Landing Approach Light

Glide Slope Indicator

Obstacle Light

Scout Element

Landing Panel (Tee)

Rifle Element

Weapons Element

Examples

Rifle Plat Ldr

Maint

Wpns Plat Ldr

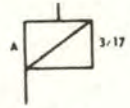
Trp XO

Trp CO

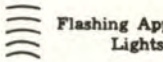
Sct Plat Ldr

MRC 95 Radio

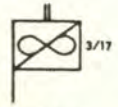
Sqdn Tac Opns Center



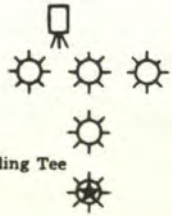
Trp A CP



Flashing Approach Lights



Sqdn CP



Night Landing Tee