
UNITED STATES MARINE CORPS
THE BASIC SCHOOL
MARINE CORPS TRAINING COMMAND
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AIR ASSAULT AND AIR ASSAULT OPERATIONS W280015XQ-DM

Air Assault and Air Assault Operations

Introduction

The Marine Corps is an expeditionary force with the ability to utilize assault support and maneuver warfare to exploit the enemy in multiple MAGTF missions. This period of instruction concentrates on the conduct of assault support operations and the capabilities of Marine Corps assault support aviation.

Importance

The Marine Corps utilizes assault support aircraft in a combat multiplier role that can avoid enemy surfaces, exploit gaps, and maintain flexibility and mobility during a MAGTF mission. In order to lead Marines during such a mission, one must understand how to properly utilize Marine Corps assault support assets.

In This Lesson

This lesson will cover key personnel, the planning and execution phases of an assault support operation, and briefly cover the capabilities of Marine Corps aircraft.

This lesson covers the following topics:

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Air Assault and Air Assault Operations (Continued)

Learning Objectives

Terminal Learning Objectives

TBS-AVI-1001 Given a mission, scheme of maneuver, and commander's intent, identify Marine Corps heliborne planning considerations to support the ground scheme of maneuver and meet the commander's intent.

Enabling Learning Objectives

TBS-AVI-1000a Given an evaluation, identify capabilities/limitations of Air Support without omission.

TBS-AVI-1001a Given an evaluation, identify the five stages for planning an assault support operation in sequence without error.

TBS-AVI-1001b Given a scenario, employ assault support aircraft in support of the ground scheme of maneuver to accomplish the mission.

Assault Support Operations

The foundation of assault support operations or vertical assault operations lies in combat assault transport—one mission category of assault support. Assault support operations are defined as the tactical movements of Marines, weapons, and material by assault support aircraft to support the ground tactical plan.

Assault support operations are deliberate, precisely planned and vigorously executed combat operations designed to allow friendly forces to strike over extended distances and terrain barriers to attack when and where the enemy is most vulnerable. They are conducted with maximum speed, flexibility, and timeliness.

Planning Considerations

- **Capabilities.** Vertical assault operations allow Marines to:
 - Attack enemy positions from any direction
 - Overfly or bypass barriers and obstacles and strike objectives in otherwise inaccessible areas
 - Conduct deep attacks and raids beyond the forward line of our own troops
 - Rapidly concentrate, disperse, or redeploy to extend the area of influence
 - Provide responsive reserves allowing commanders to commit a larger portion of their forces to action
 - Conduct fast paced operations over extended distances
 - Rapidly reinforce committed units
 - Conduct night terrain flight with the use of night vision devices, which allows them to locate a landing zone and land without illumination
- **Limitations.** These factors may negatively affect vertical assault operations:
 - Severe weather, extreme heat and cold, and other environmental conditions such as blowing snow and sand that limit flight operations, aircraft lift capability, or flight visibility
 - Reliance on airborne communication
 - Reduced ground mobility once inserted
 - Limited accessibility to supporting arms, especially indirect fires
 - Increased logistical considerations (fuel, maintenance, spare parts, facilities, and aircraft availability)
- **Vulnerabilities.** Assault support forces use helicopters and tiltrotor aircraft to close with the enemy. Initial assault elements must be light and mobile. They are often separated from weapon systems, supporting arms, equipment, and material that provide protection and survivability on the battlefield. Thus, the vertical assault force is particularly vulnerable to:
 - Attack by enemy air defense weapons systems during the movement phase

Planning Considerations (Continued)

- Attack by NBC systems, because of limited NBC protection and decontamination
- Attacks (ground, air, artillery) during the loading and unloading phases
- Electronic warfare (jamming), due to the heavy reliance on radio communications for command and control

- **Assault Support Aircraft**
 - UH-1Y “Venom”
 - Pax: 8
 - Payload: 6,600lbs
 - Speed: 160kts
 - Range: 130nm

 - MV-22B “Osprey”
 - Pax: 24
 - Payload: 15,000lbs
 - Speed: 280kts
 - Range: 880nm

 - CH-53E “Super Stallion”
 - Pax: 37 (55 if centerlines are installed)
Use 30 for planning, more than 30 pax requires a waiver to be signed by the MAW Commander.
 - Payload: 20,000lbs
 - Speed: 150kts
 - Range: 540nm

Key Personnel

- **Mission Commander.** The overall commander of the operation, the mission commander’s presence and role ensures a unity of command throughout the operation. Elements of the ground combat element (GCE), ACE, and combat service support element (CSSE) that form the assault support task force will be placed under the mission commander’s direct command. The MAGTF commander may be the mission commander depending on the scope of the assault support operation.

 - **Air Mission Commander (AMC).** The AMC is the senior Marine aviator designated commander of the aviation unit tasked to support an assault support operation. Depending on the size and scope of the MAGTF, the AMC may also be the ACE commander. The AMC is subordinate to the mission commander and is co-equal to the AFC in planning. During execution, specific authority will be delegated from the mission commander to the AMC. The AMC is responsible for planning and executing all aviation functions relative to the assigned assault support mission and must establish liaison with the Assault Force Commander (AFC) to conduct concurrent and parallel planning.
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Key Personnel (Continued)

- **Assault Force Commander (AFC).** The commander of the aircraft landing force, the AFC is the ground officer who has been designated commander of the assault support force and is charged with execution and accomplishment of the ground tactical plan. Depending on the size and scope of the MAGTF, the AFC may also be the GCE commander. The AFC is subordinate to the mission commander and is equal to the AMC in planning. During execution specific authority will be delegated from the mission commander to the AFC. The AFC is responsible for execution of the ground tactical plan and must establish liaison with the Air Mission Commander (AMC) to conduct concurrent and parallel planning.
 - **Command Relationships**
 - Coordination between the ground commander (AFC) and the AMC should begin at the earliest opportunity in the planning phase of the operation. During the initial planning stages, the AMC will give the AFC and the staff planning data relative to the numbers and types of aircrafts available for the lift. Although the AFC and the AMC must plan together, the AFC's concept of operations on the ground must drive all planning for the assault support operation.
 - A central consideration for the AFC and AMC in planning an assault support operation is the enemy air defense situation. Sortie rates, aircraft types, availability, and capabilities are also central factors in planning.
- **Pickup Zone Control Officer (PZCO).** The AFC can be the PZCO but typically designates a PZCO (either a FAC or air officer) from the supported unit of each pickup zone (PZ). The PZCO organizes, controls, and coordinates operations in the PZ and pushes elements out of the PZ. The PZCO has overall control of the PZ and must have communication with the Marshalling Area Control Officer (MACO) and the aircraft. During extraction from a landing zone (LZ) the PZCO will fulfill the role of the MACO and shall be the last to leave the LZ.
- **Marshalling Area Control Officer (MACO).** The MACO is responsible for all movement on the PZ, maintains accountability of personnel and material within the PZ, and ensures the proper execution of the staging and loading plans. The MACO must have communication with the PZCO and the aircraft. The MACO will establish a 'gate' in order to account for all personnel embarking on each aircraft which will be checked against the units' manifest. All manifests will be maintained by the MACO as a record of embarked personnel.
- **Aircrew.** The pilot is responsible for the overall safe conduct of the flight and has the final say on all matters concerning the aircraft. Pilots work in concert with the Crew Chief(s) who are the experts of their platform and control the back of the aircraft. When in doubt look to the aircrew for direction. To ensure your safety, don't approach the aircraft until signaled to do so.

FOLLOW ALL INSTRUCTIONS COMING FROM THE AIRCREW

Five Stages of Planning

There are five stages of planning for the conduct of assault support operations. Typical of most operations, we plan in reverse from the ground tactical plan which involves actions on the objective to the staging plan that details the PZ layout. This topic will be covered in the order that you will plan.



- **Ground Tactical Plan.** The foundation for a successful assault support operation is the AFC's ground tactical plan. The ground tactical plan is developed first and is the basis from which other plans are derived. The ground tactical plan:
 - Specifies actions in the objective area, which accomplish the mission.
 - Is constructed and conducted with all the elements of a typical infantry attack except that it capitalizes on the speed and mobility of the vertical assault.
- The tactical planning process for assault support operations should appear very similar to a typical infantry attack though it should additionally include the planning considerations covered earlier. The AFC must plan for and task-organize all assets available. The plan should include contingency plans and go/no-go criteria.
- **Landing Plan.** The landing plan in assault support operations consists of the ground commander's guidance concerning the desired time, place, and sequence of arrival of units. The landing plan must support the ground tactical plan taking a number of principles into consideration:
 - LZ selection. The AFC selects LZs based on the advice of the AMC. LZs are selected using the following criteria:
 - The ground commander's concept of operations.
 - Location. As close to the objective area as possible considering the need for surprise and security.
 - Enemy disposition and capability. Enemy troop concentrations, air defenses, and their capability to react to an assault support force landing nearby are considered when selecting LZs.
 - Size and Capacity. Determines the ability to land at the LZ and how many aircraft can land simultaneously, increasing initial combat power. The table below gives rules of thumb for determining LZ size if obstacles are on the perimeter of the LZ. This is a guide; the pilot will make the final determination if the LZ is viable.

Five Stages of Planning (Continued)

Type of Aircraft	If obstacles around the perimeter of the LZ are....		
	5 to 40 feet	40 to 80 feet	80+ feet
	Then the recommended LZ diameters (in feet) per single aircraft are....		
UH-1	100	150	200
MV-22	175	250	350
CH-53	175	250	350

- Alternates. An alternate LZ should be planned for each primary LZ selected to ensure flexibility.
- LZ Characteristics. Surface material and composition, obstacles, cover/concealment, ability to easily ID from the air, etc.
- Landing plan preparation. The plan sequences elements into the area of operations so that units arrive at locations and times prepared to execute the ground tactical plan. The landing plan should plan for:
 - LZ prep fires, but they may not be used depending on the threat and the ground tactical plan.
 - L-Hour. The basis for planning the timing of the operation is L-Hour. L-Hour is the time when the first aircraft in the first lift is to touch down in the LZ.
 - Initial actions on the LZ.
 - Fire support assets such as CAS and indirect fires.
- The assault support force must land prepared to fight in any direction. The commander of the assault support force must be concerned about security immediately upon landing.
 - As a general rule, the smallest tactical unit to land in one wave in a landing zone should be a platoon. This provides a degree of combat power to secure the LZ for follow-on forces. Of course, in some cases, such as the insertion of combat patrols, the size will be smaller than a platoon and will not have to secure the zone for follow on forces.
 - The number of aircraft in each wave depends on the size of the assault force to be lifted including their equipment and supplies, the number of aircraft available, the number of aircraft the LZ can accommodate, the force requirements to accomplish initial objectives without delay, and the amount of deck space/time available.
 - Aircraft should not be landed within direct fire range of enemy weapons because of their relative vulnerability and high value to the MAGTF.
 - All members need to understand their mission immediately upon exiting the aircraft to include initial direction of movement and LZ security sectors. A *guide* should be used to help direct them into position.

Five Stages of Planning (Continued)

- **Air Movement Plan.** The air movement plan provides for the control and protection of the assault support force during the air movement. The air movement plan is *primarily the responsibility of the AMC, although the ground commander also contributes to its development*. The air movement plan is based on the ground tactical plan and the landing plan. It specifies when and how troops, equipment, and supplies will be transported from PZs to LZs. This plan also provides coordinating instructions pertaining to ingress/egress routes, air control points, aircraft speeds, altitudes, and formations which are decided by the AMC.
- **Loading Plan.** The loading plan is designed to establish, organize, and control activities in the PZ, plan for the movement of troops and equipment to the PZ, and establish the priority of loading units. Correct aircraft loading is essential in maintaining mobility. Aircrafts must be loaded in a manner and sequence that allows immediate assumption of the mission upon landing. The loading plans will either be administrative or tactical in nature depending on the situation.
 - Formulating the plan. In planning an assault support operation, the AFC must complete several tasks:
 - Review the total *number* (by type) of assault support aircraft available.

Note: Aircraft capacity.

UH-1Y can lift 8 combat loaded troops

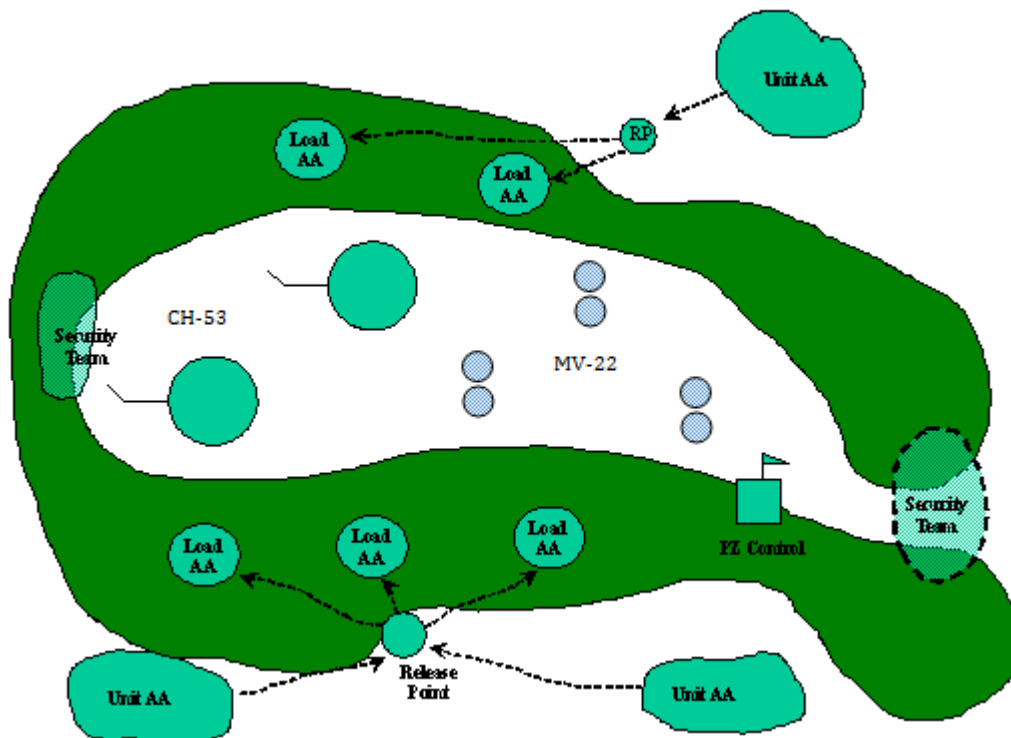
MV-22B can lift 24 combat loaded troops

CH-53E can lift 30 (planning) combat loaded troops

- Determine *stick* organization - a stick is the organizational unit used in assault support operations. *The intent is that a stick will not be broken down any further*. When forming sticks consider the following:
 - Unit integrity. Fire teams and squads are maintained and loaded on the same aircraft; likewise, platoons are in the same wave.
 - Tactical spread loading. An essential consideration, as loads should be planned so that all leaders or all similar weapon systems are *not* loaded on the same aircraft. Thus, if an aircraft is lost, the mission is not seriously hampered.
 - Employ the stick leader. The senior member of each stick has several responsibilities that exist in both the administrative and tactical environments. These responsibilities include: mustering, organizing, and inspecting the stick in the assigned assembly area; preparing the manifest containing the name, rank, service number, and blood type of each individual in the stick (to be left with the MACO); supervising the embarkation/debarkation of the stick which involves includes directing members of the stick to an assigned sector/portion of the LZ, ensuring all gear and supplies are taken from the aircraft, etc.
 - Size. Smaller numbers increase flexibility, larger numbers are easier to control. Size is largely dependent on the type of operation.

Five Stages of Planning (Continued)

- Plan the layout of the pickup zone.



Example of a tactical pickup zone

- Release Point - Contains a staging area and the MACO gate. This is where sticks will organize themselves prior to passing through the MACO gate and moving to their designated load assembly area. *Sticks should be staged 15 minutes prior to the scheduled wave liftoff.*
 - Load AA – Each aircraft will have its own load assembly area. The sticks loading each specific aircraft will stage in its load assembly area when directed by the MACO.
 - Securing the zone. The inherent vulnerability of aircraft *on the ground* requires providing necessary amount of security to preserve the force. For larger zones, securing the zone with a portion of the force (while the remainder stages in an assembly/staging area) may work. If the zone is small, securing the entire perimeter with the force may suffice.
- Determine the sequence of loading personnel and materials and establish their priority. The plan should:
- Account for the increased combat power required in the initial wave.
 - Sequence personnel and materials logically in support of the ground tactical plan.
 - Include a bump plan. Loading doesn't always go to plan. For example, certain variables can change the space available and weight limits on the aircraft. Have a plan to account for these unforeseen changes. Smaller stick sizes add flexibility to the bump plan.

Five Stages of Planning (Continued)

- **Staging Plan.** The staging plan is based on the loading plan and prescribes the arrival time of ground units (troops, equipment, and supplies) at the PZ in the proper order for movement.
 - Assign sticks to *serials*. A serial is group of one or more sticks used to manage a large numbers of sticks. One or multiple serials can get on each aircraft which is normally dictated by unit SOP as is serial number development (*Example: Serials 1001 and 1002 will embark on the 1st and 2nd aircraft of the first wave... serials 2001 and 2002 will embark on the 1st and 2nd aircraft of the second wave*)
 - Loads must be ready before aircraft arrive at the PZ; ground units are expected to be ready in the PZ 15 minutes before aircraft arrival.
 - Each stick needs to know their serial and the time they are expected to be staged in the staging area.

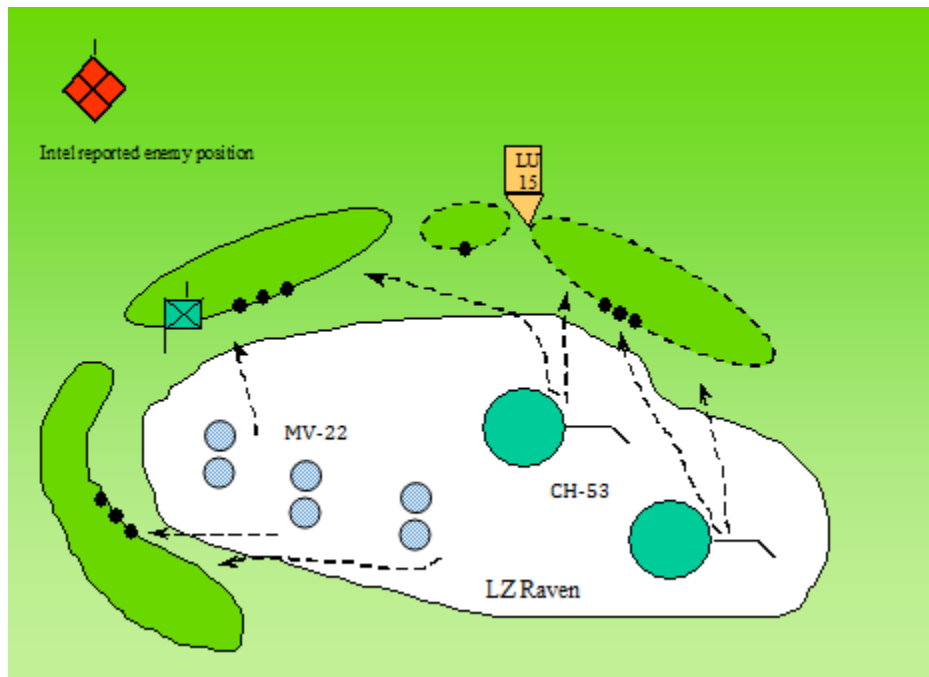
Execution of the Vertical Assault

- **Prior to Pickup**
 - Conduct final coordination with the AMC. Plans will change from the time you initially request aviation support. Confirm the following:
 - Number of aircraft available for lift (can change based on the weather, maintenance, assets available, and mission priority.)
 - Total number of personnel to be transported.
 - Total number pallets and weight of material to be transported.
 - Expected transport sequence and number of waves.
 - PZ/LZ locations.
 - Frequencies and callsigns.
 - Stage units and material in the PZ in accordance with the staging and loading plan.
- **Loading Procedures.** Loading is conducted with the maximum speed commensurate with safety. Specific procedures for loading, by type of aircraft and according to the situation, will be prescribed in unit SOPs. To assist in loading, the following procedures may be used as guides:
 - Units are to remain covered and concealed as long as possible. The only Marines that should be exposed in the LZ will be the LZ control team. Plan for scenarios involving *enemy contact* at any time during the operation.
 - When directed, the sticks are moved to the staging area and are positioned for loading. The assembly area may also serve as the release point. Stick manifests can be collected here.

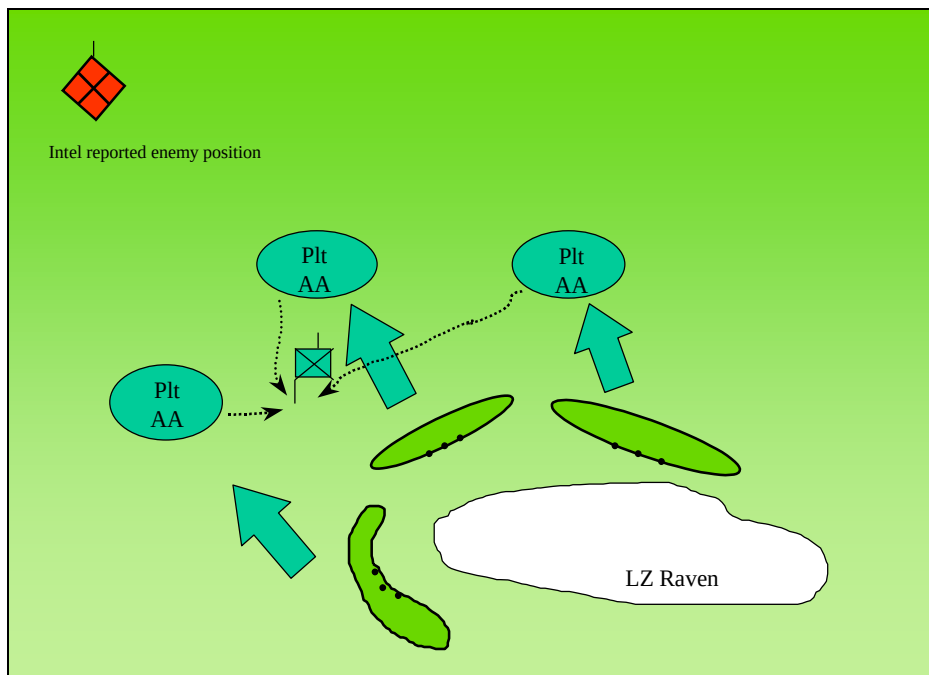
Execution of the Vertical Assault (Continued)

- From the release point, sticks are moved to a load AA within the pickup zone. In small unit lifts and when control means are adequate, load AAs may be dispensed with.
- Loading Sequence.
 - Stick leader initiates movement once the aircraft has landed and is signaled by the aircrew.
 - Stick moves to the aircraft in file with the stick leader leading the file and the assistant stick leader bringing up the rear.
 - Stick leader should:
 - Ensure all personnel know which aircraft and which position to load.
 - Ensure that all personnel unsling their weapons and the equipment is held properly before dispatching troops to their loading points in administrative lifts. Unit SOPs will dictate which way to carry gear onto the aircraft. As a general rule, point muzzles on all weapons down when embarking the aircraft. Usually packs will be carried on slung over one shoulder.
 - Notify the crew chief when all stick members are on board and ready for takeoff. A technique to signal you are ready is to give a thumbs-up to your stick leader and hold it until everyone is ready.
 - Report to the pilot and answer any questions the pilot may have, utilizing the aircraft ICS. The stick leader needs to pass all pertinent information for landing, including the name of the landing zone and its grid coordinate along with the desired direction of landing and the landing point. One technique is to have all the information prepared on a card and ready to give to the pilot prior to embarking the aircraft.
 - Ensure, upon landing, that all personnel exit the aircraft and quickly move to designated positions in the LZ and continue the ground tactical plan.
- **Conduct of the Landing: Tactical Insertions**
 - The landing is executed with maximum speed. Following the ceasing of prep fires, the initial wave lands and establishes security for follow-on waves. To ensure security, the initial wave will seize key terrain and cover likely avenues of approach. *As soon as the aircraft touches down you are cleared to debark.*
 - As subsequent waves arrive in zone, the LZ is enlarged. With guides provided by the initial wave, units arriving in the LZ link up with their respective squads/platoons, immediately occupying their respective sectors. While waiting for subsequent waves to arrive, units will:
 - Tie-in physically or by fire
 - Conduct hasty reorganization/consolidation
 - Prepare to move

Execution of the Vertical Assault (Continued)



- Follow-on waves will continue to enlarge the zone; once the last wave has arrived, movement out of the LZ should be quick and deliberate.



- Execute the ground tactical plan.

Execution of the Vertical Assault (Continued)

- **Tactical Extractions**

- Tactical extractions use the same principles as tactical insertions except in reverse. The PZ must first be secured, seizing key terrain and avenues of approach. Units then occupy the PZ tying in with each other. The PZCO initiates action to prepare the unit for extract, including preparing manifest and prepping internal and external loads.
- Prepare a mark. Anything that the pilot can identify can be used as a mark. Good examples are smoke, air panel, NATO Y, chem lights, IR strobe, and the IR buzzsaw. For smoke, do *not* pass smoke color; it can be used as an informal authentication method. If someone is monitoring the net, it prevents them from luring the aircraft into an ambush.
 - Smoke is preferred method of marking LZ in daylight because it also provides wind direction.
 - At night, IR strobe or chem lights (IR if available) are the preferred method for marking an LZ.
- Establish communication with the aircraft and transmit LZ Brief (p. 15).
- As the initial wave departs the PZ, remaining units begin to “shrink” the zone. As each wave departs, the zone becomes smaller. The security element will be the last to be extracted along with the PZCO. Upon departure, supporting fires should be planned and executed to cover the egress.
- For hot/tactical LZ/PZ contingencies:
 - Conduct immediate action and initiate your fire support plan.
 - Gain a foothold in the zone, consolidate, and reorganize.
 - Execute a contingency plan:
 - If the mission is still tenable, move to the objective via an alternate route.
 - Move to an alternate LZ/PZ (if only part of your unit was able to get into the zone and the remainder is landing in an alternate; initiate a link-up). Likewise, if the PZ becomes hot, movement to an alternate may have to be executed.
 - Conduct an emergency extract from a hot PZ. If this is the option, ensure that fire support assets are available to give adequate suppression and extract the wounded first.

Landing Zone Brief

Landing Zone (LZ) Brief. The information contained in the LZ brief is the basis for the information that should be passed to the transport aircraft prior to landing in the zone. The table below describes the content for each paragraph of the LZ brief. The LZ brief is the primary method of informing the pilot of conditions on the ground.

Multiple formats for the LZ Brief exist. The format below is currently used by MAWTS-1 and is the format you will be expected to know. It represents a simple and useful tool to inform aircraft about a particular zone. If more information is necessary to ensure aircraft has an appropriate level of situational awareness, it should be included. The below format should not preclude a conversation or plain language dialogue from occurring in order to ensure ground personnel and aircrew know exactly what needs to occur and why (i.e. threat).

Transmit as applicable:

- **Zone Location:** Geographical feature, checkpoint, road intersection, etc. This can include the name of the LZ if it is previously briefed.
- **Marked By:** Air panel, buzzsaw, chem lights, IR strobes, smoke, talk-on, etc.
- **Obstacles:** Power lines, trees, etc. Include height of obstacle. This includes obstacles within the LZ.
- **Winds are from _____:** Tell aircraft which sub-cardinal head are winds are blowing including estimated speed in knots or estimated speed such as strong or light. Winds under 5 knots may be called as calm or light and variable.

For reference, 1 knot = 1.2 mph

****Aircraft will always want to land into the wind****

- **Friendlies:** Direction and distance from LZ and orientation.
- **Enemy:** Direction and distance from LZ and orientation. Most recent activity and type.
- **Remarks:** Any other pertinent information. Can include LZ dimensions, slope, composition, landing point from the mark, features to aid in identification, etc.

Example LZ Brief:

“Dustoff 01, LZ location NU 123 456, marked by smoke, there are power lines 400m north running E-W, Winds are from the N a 5 knots, friendlies located 20m west of the smoke, LZ will be dusty with possibility of brown out.”

Reference Number/Author

Reference Title

Aviation Operations
Helicopterborne Operations
TACP TACSOP

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