

**ARNG WARRIOR TRAINING CENTER  
PATHFINDER COURSE  
FORT BENNING, GEORGIA 31905**

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**AAP&PFE SUMMARY SHEET:**

**INSTRUCTIONAL INTENT:** To enable the Pathfinder student to plan for and operate day or night air assault operations and to actually employ a Pathfinder Team. The student will learn coordinate with the ground unit commander; and the duties and responsibilities of the different elements involved in the operation of a PZ.

**AIR ASSAULT PLANNING AND PATHFINDER EMPLOYMENT:**

I. **AN AIR ASSAULT TASK FORCE:** Provides commanders with truly unique capabilities. They can extend the battlefield, move and rapidly concentrate combat power like no other available forces. An air assault operation is designed to capitalize on the speed and mobility of the helicopters to achieve surprise.

II. **INTRODUCTION-** Pathfinders mainly provide navigational aid and advisory services to military aircraft in areas designated by supported unit commanders. The pathfinders' secondary missions include providing advice and limited aid to units planning air assault or airdrop operations.

A. **EMPLOYMENT -** The pathfinders provide navigational aid and air traffic advisories for aircraft assigned to the specific mission. This occurs at any phase of an air assault or ground operation that requires sustained support by military aircraft. The commander employs pathfinders on a short-term basis for some missions. He can redeploy the pathfinders after they complete a major troop lift or airdrop.

1. **PRIMARY EMPLOYMENT-** Ideally, the commander assigns a pathfinder team to each combat aviation battalion. This enhances the relationship between aviators and pathfinders, who have to work well together and understand each other in order to successfully complete a mission. Aviators and pathfinders must maintain a good working relationship, because of the ever increasing amount of pathfinder units and the assignment of pathfinder-coded positions to ground units.

- Even though the pathfinder- coded positions are rising, many units might have no trained pathfinder assets. In this case, higher headquarters must temporarily assign pathfinder assets from an external source to train supported unit personnel and oversee the conduct of pathfinder operations.
- Non-pathfinder-qualified soldiers receive training from the pathfinders and form into a company-level pathfinder team. Once trained, the team provides navigational aid, air traffic advisories, and any other relevant information. Around the clock, the pathfinder team supports any type of air movement or resupply operation conducted by or for the ground unit and supported by an aviation unit.

- Trained, equipped pathfinders select, mark, improve, and control landing sites. Engineers in direct support (DS) of lifted ground units may help pathfinders improve landing zones (LZs). In most situations, pathfinders perform two or more of these jobs at the same time. In each case, they start out by setting up ground-to-air radio communications. Also, combat lifesaver-qualified pathfinders supplement internal medical support.

2. **SECONDARY EMPLOYMENT** - When not performing duties for supported units, pathfinders remain with their equipment, near and in communication with the supported ground unit CP. While pathfinders await further missions, the parent or supported CP may task them to help control the aviation unit base airfield, to perform minor demolition work, or, in staff sections, to perform map and aerial photographic work. However, before the pathfinders perform secondary missions, they must first train and perform routine maintenance on their equipment.

**III. AIR ASSAULT PLANNING:** Successful air assault execution is based on a careful analysis of METT-TC and a detailed and precise Reverse Planning Sequence.

- A. THE GROUND TACTICAL PLAN
- B. THE LANDING PLAN
- C. THE AIR MOVEMENT PLAN
- D. THE LOADING PLAN
- E. THE STAGING PLAN

F. These plans should be developed concurrently by the Air Assault Task Force staff to make the best use of available time. The ground tactical plan is normally developed first and is the basis from which the other plans are derived.

G. Planning for air assault operations requires time; time to plan, time to prepare and time to brief (the 1/3; 2/3 rule). Planning for air assault operations is as detailed as time permits and should include completion of written orders and plans.

H. There are no existing units below division level that are capable of unilaterally conducting effective air assault operations. Pure units simply do not have adequate organic assets to ensure successful air assault missions accomplishment. Task organizing or mission-specific tailoring of forces is the norm for air assault operations, however; the battalion is the lowest level that has sufficient personnel to plan, coordinate and control an air assault operation. When company size operations are conducted, the bulk of the planning takes place at battalion or higher headquarters.

#### **IV. Ground Tactical Plan:**

A. The foundation of a successful air assault operation is the ground unit commander's tactical plan, around which subsequent planning is based. The ground tactical plan specifies actions in the objective area to ultimately accomplish the mission and address subsequent operations.

B. Elements of the Ground Tactical Plan: The ground tactical plan for an air assault operation contains essentially the same elements as any other infantry attack, but differs in that it is prepared to capitalize on speed and mobility in order to achieve surprise. Assault echelons are placed on or near the objective for rapid consolidation and for follow on operations. If adequate combat power cannot be introduced quickly into the objective area, then the air assault force must land away from the objective and build up combat power. The air assault force then assaults like any other infantry unit and the effectiveness of the air assault operation is diminished.

## V. **The Landing Plan:**

A. The landing plan must support the ground tactical plan. This plan sequences elements into the area of operations, ensuring that units arrive at designated locations and times prepared to execute the ground tactical plan.

B. Elements of the landing plan should include, but are not limited to the following:

The availability, location and size of the landing site.

Offers flexibility for changes to landing direction and/or formations.

Supporting fires (artillery, naval gunfire, CAS, attack helicopters) must be planned for around the landing site.

Should include MEDEVAC and re-supply contingencies.

### C. **Advantages of using a single LZ**

1. Allows concentration of combat power in one location.
2. Facilitates control of the operation
3. Concentrates supporting fires in and around the LZ
4. Provides better security for subsequent lifts.
5. Reduces the number of flight routes in the objective area.
6. Centralizes any required resupply operations.
7. Concentrates efforts of limited LZ control personnel and engineers on LZ.
8. Requires less planning and rehearsal time.

### D. **Advantages of using multiple LZs**

1. Avoids grouping assets in one location and creating a lucrative target.
2. Allows rapid dispersal of ground elements to accomplish tasks in separate areas.
3. Reduces the enemy's ability to detect and react to the initial lift.
4. Forces the enemy to fight in more than one direction.
5. Reduces the possibility of troop congestion in one LZ.
6. Eliminates aircraft congestion on one LZ.
7. Makes it difficult for the enemy to determine the size of the air assault force and the exact location of supporting weapons.

## VI. **Air Movement Plan:**

A. The air movement plan is based on the ground tactical plan and the landing plan. It specifies the schedule and provides instructions for air movement of troops, equipment and supplies from PZ's to LZ's. It also provides coordinating instructions regarding air routes, air control points, and aircraft speeds, altitudes and formations. The planned use of attack helicopters, to include security and link-up locations (if different from PZ), should be included in the air movement plan (when operations involve multiple lifts from the same PZ, a lift table is prepared to ensure lifts are properly organized).

B. The air movement plan is normally developed in coordination with the Air Movement Commander, or the aviation liaison officer, who provides technical assistance and recommendations.

C. **The air movement plan has two key elements:**

1. Flight routes, with flight route overlays.
2. Air movement table.

D. Development of Flight Routes:

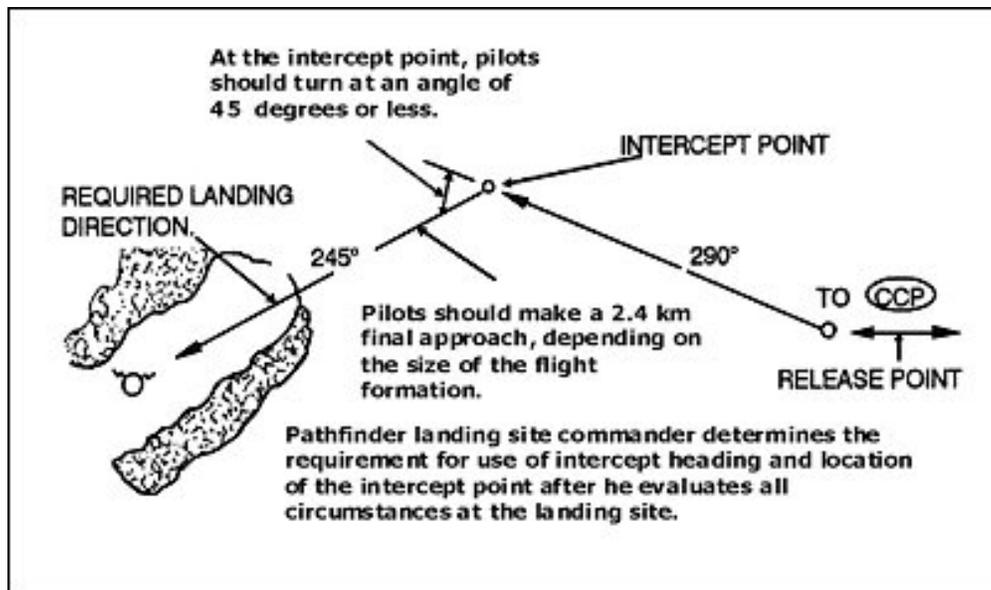
1. Tentative flight routes are developed to control, protect and sequence aircraft movement. Careful consideration is given to the terrain and enemy forces. The AATF S-2, S-3 and AMC assist the AATFC in developing flight routes. The basic methods of developing tentative routes is by map study or by photo review when time permits, considering the locations of friendly units, enemy dispositions and air defense systems, and PZ's and/or LZ's.
2. A flight route consists of a start point (SP), release point (RP), and a flight path between the two.
3. The fire support plan should include fire planning along the routes.

**Start Point (SP):** The SP is a topographic feature easily identifiable from the air that can be used as a navigational aid. It is normally located no closer than 3 to 5 kilometers from the PZ. The planning time for navigating this distance is 2 minutes.

**Release Point (RP):** The RP is a topographic feature easily identifiable from the air that can be used as a navigational aid. It is normally no closer than 3 to 5 kilometers from the LZ. The planning time for navigating this distance is 2 minutes. This will allow the flight leader time to reconfigure the flight formation and execute the tactical landing formation.

**Air Control Points (ACP):** The ACP is a topographic feature that is easily identifiable from the air that can be used as a navigational aid. It is normally located at each point where the flight route changes direction. However, a flight route can contain, as many ACP's as necessary to control the air movement.

**Intercept Headings:** The heading from the RP (or CCP if the pathfinders do not use an RP) to the landing site coincides as closely as possible with the landing direction to keep the helicopter from having to turn sharply. The larger the formation, the more important this becomes. If a pilot cannot approach the landing site straight on, pathfinders will set up an intercept heading. They choose an intercept point far enough from the touchdown to allow helicopters in formation a final approach of at least 1 to 2 KM.



(2). Flight routes are developed based on tactical and technical factors. It may be necessary for a route to pass through an adjacent unit's sector. When that is the case, approval from that unit is obtained and coordination's are made. Regardless of route direction or location, certain criteria are considered.

(3). Seldom are all characteristics present in any one situation; one or more may have to be omitted. Flight routes:

- Are as short as possible, consistent with other considerations.
- Avoid turns in excess of 45 degrees, when formation flying is required, to facilitate control of the aircraft formation.
- Provide terrain masking to deny exposure to enemy observation, direct fire weapons, and radar acquisition, if possible.
- Provide cover when terrain permits, placing terrain mass and/or vegetation between the enemy and the aircraft.
- Provide for ease of navigation (day or night).
- Avoid masking friendly fires, particularly supporting artillery.
- Avoid known enemy units and air defense positions.
- Avoid over-flight of built up areas.

E. **There are three types of flight routes:**

1. **Restricted flight route:** The aircraft is restricted as to their heading and altitude.
2. **Flight corridor:** The corridor reserves airspace around a flight route for AATF use, and prevents artillery, Tactical Air, and other elements from flying or firing through it when it is in use. The size of the corridor varies. Normally, they extend 200 - 300 meters on either side of the designated flight route, and 500 feet above or below the flight altitude. Authority to establish a flight corridor is obtained from the brigade and/or division commander(s).
3. **Flight axis:** The flight axis has a width (like a corridor) but does not have airspace reserved to a specified altitude (as does a corridor). The flight axis permits deviation laterally along the flight route. It gives the AMC a choice in selecting en-route formations, and freedom to alter direction without coordinating a new flight route.

F. **Maps or overlays:** Containing flight route information are prepared at AATF headquarters and disseminated to subordinate and support units (overlays are often used). A number, letter or a word designates flight routes and corridors.

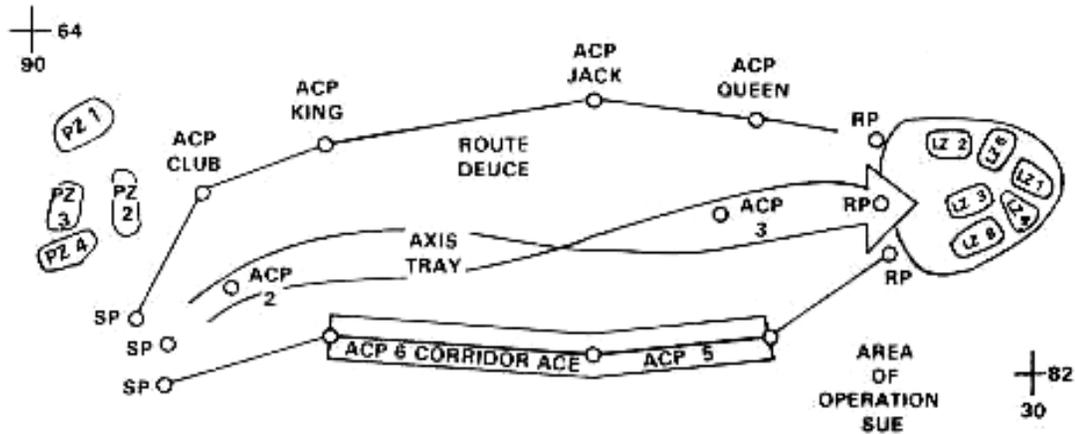
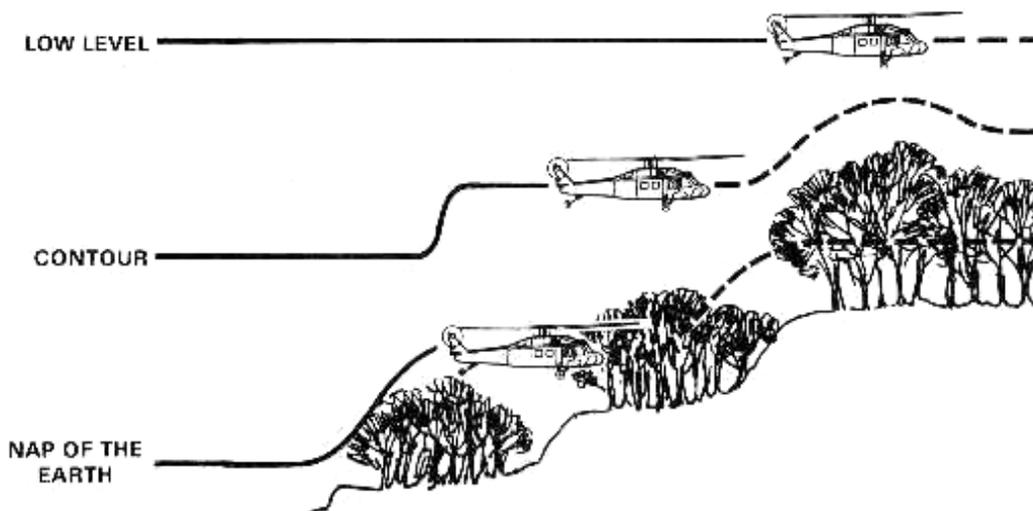


Figure Depicting Flight Routes

G. **Terrain Flight Modes:** If specific in-route altitude is not designated, pilots may use one of three terrain flight modes as dictated by the mission and the threat.

1. **Nap-of-the-earth flight:** This is flown at varying airspeeds and altitudes as close to the earth's surface as possible while following the contours of the earth. It is a weaving path that remains oriented along the general axis of movement and takes advantage of terrain masking.
2. **Contour flight:** This is flown at low altitude conforming generally to the contours of the terrain. The flight is characterized by varying altitudes and airspeed.
3. **Low level flight:** This is flown at low altitude with constant heading, airspeed and altitude to facilitate speed and ease of movement while minimizing detection. This mode of flight is normally used only in rear areas.



Terrain Flight Modes

## VII. Loading Plan:

A. **General:** The loading plan is based on the air movement plan and the ground tactical plan. It ensures that troops, equipment and supplies are loaded on the correct aircraft. Unit integrity is maintained when aircraft loads are planned. However, assault forces and equipment may be cross-loaded so that command and control assets, all types of combat power and a mix of weapons arrive at the LZ ready to fight. Aircraft loads are also placed in priority to establish a bump plan. A bump plan ensures that essential troops and equipment are loaded ahead of less critical loads in case of aircraft breakdown or other problems. Below brigade level, SOP's establishes loading plans. In any case, planning must cover the organization and operation of the PZ including load positions, day and night markings, and communications. The loading plan is most important when mixing internal and external loads and/or when mixing aircraft types (lift and medium sized helicopters)

### B. Items of consideration in the loading plan:

#### 1. Coordination with Air Mission Control:

- Loading plans are carefully coordinated with the Aviation Liaison. Copies of the loading plan should be distributed to the aviation LNO, command and control elements, the AMC and the PZ control officer.

The loading plan must ensure that every soldier knows his location on the aircraft. Static loading and off-loading must be the rule before every air assault.

#### 2. Pickup Zone Marking:

The PZCO directs the marking of PZ's.

Red is NEVER used to mark aircraft landing positions. Regardless of the type of markers, the PZ is marked to indicate where aircraft are to land and coincides with the selected PZ aircraft formation.

- An effective method is to have several individuals in each unit paint (and carry) an extra camouflage cover or a modified (cut to size) VS-17 panels. The colored covers, when displayed, indicate where the lead aircraft lands. There are also many other effective means to mark PZ's.

#### 3. Movement to the Pickup Zone:

- Ground and aviation unit movement to the PZ is scheduled so that only the troops to load and the helicopter to be loaded arrive at the PZ at the same time. This prevents congestion, preserves security and reduces vulnerability to enemy actions on the PZ.

- To coordinate the movement of units to the PZ, the PZCO:  
Selects troop assembly areas, holding areas and routes of movement. A holding area is located close to the PZ. It is used only when the assembly area is some distance away and does not allow timely movement to the PZ.

Determines movement time of ground units to PZ.

Specifies arrival time(s) and sees that movement of units remains on schedule.

#### 4. Air loading Table:

- At company and lower levels, the air-loading table assigns each man and major item of equipment or supplies to a specific aircraft (chalk).
- The air-loading table is an accountability tool, a loading manifest for each aircraft.
- When time is limited, the table can be put on a sheet of paper from a squad leader's notebook. It should list the soldiers (by name) and equipment to be loaded on each chalk. These lists are left with a specified representative in the area for consolidation or exchange between aircraft troop commanders (senior person in each aircraft load). This procedure ensures that if an aircraft is lost a list of personnel and equipment on board is available.

#### 6. Load Planning:

- During preparation of the load tables, unit leaders at all levels attempt to maintain the following:

**Tactical Integrity of Units:** When planning loads for air assault operations, fire teams and squads are loaded intact on the same aircraft, and platoons in the same serial. This ensures integrity as a fighting unit upon landing. The commander's goal is to load his unit so that unit integrity is maintained at every level.

**Self-sufficiency of Loads:** Each unit load should be functional by itself (whenever possible).

- Every towed item is accompanied by its prime mover.
- Crews are loaded with their vehicle or weapon.
- Component parts accompany the major item of equipment.
- Ammunition is carried with the weapon.
- Sufficient personnel are on board to unload cargo carried.
- Communication between chalks, if possible, without using the aircraft radios.

**Tactical Cross Loading:** Loads should be planned so that all leaders or crew-served weapons are not loaded on the same aircraft. Thus, if an aircraft is lost, the mission is not seriously hampered. For example, loading the platoon leader, platoon sergeant and all the squad leaders on the same helicopter; or loading more than one machine gun team on the same aircraft, are violations of cross loading principles. Another consideration is to determine whether internal or external loading is the best delivery method of equipment and supplies. Helicopters loaded internally can fly faster and are more maneuverable. Externally (sling) loaded helicopters fly slower and is less maneuverable; however, they can be loaded and unloaded more rapidly than internally loaded helicopters. The method used depends largely on availability of sling and rigging equipment.

NOTE: Supplies loaded externally (although loaded rapidly) can present problems if the supplies are destined for more than one location or unit.

### VIII. Staging Plan:

A. **General:** 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 of movement.

B. **Procedures:** Loads must be ready before aircraft arrive at the PZ; usually, ground units are expected to be in PZ posture 15 minutes before aircraft arrive. The staging plan also restates the PZ organization, defines flight routes to the PZ and provides instructions for linkup of all elements. Air-to-air linkup of aviation units should be avoided, especially at night when night vision goggles are being used.

IX. **Pathfinder Planning-** Ensures success of the ground mission, pathfinders plan their own missions in detail. The more time they have to plan, the more detailed a plan they can make.

A. **Warning Order-**As soon as he receives word of a pending operation, the senior pathfinder issues a mission alert. He immediately follows with a warning order. He includes just enough information to allow the other pathfinders to start preparing for the operation

B. **Initial Preparation-** On receiving the alert or warning order, pathfinders inspect and, as needed, augment personnel and equipment. Pathfinders prepare equipment in the following order, from the most to the least important:

1. Radios
  2. Navigation aids (electronic and visual).
  3. Weapons
  4. Essential individual equipment.
  5. Assembly aids.
  6. Other items as needed (mission specific)
- a. The pathfinder element leader (or his representative) and the air mission commander begin coordinating with the supported aviation unit(s), ground unit(s), or both.
  - b. As the pathfinders receive more information, they reorganize personnel and equipment to better accomplish the mission. If time permits, they rehearse. They use available briefing aids, and they rehearse on terrain that most nearly resembles the AO.
  - c. To succeed, an operation must have security. So, each person receives only the information he must have to complete each phase of the operation. For example, the commander isolates any soldiers who know the details of the operation. The situation dictates the extent of security requirements.

C. **Coordination-** Ground and aviation commanders work together to coordinate and plan the details of operations for which they **require** pathfinder assistance.

1. In any type of operation (combat assault, reinforcement, artillery displacement, resupply, or evacuation), the pathfinders might have to recommend
  - Exact locations for PZs or LZs.
  - A time schedule.
  - Landing formations
  - Employment techniques.
2. While preparing for an operation, air liaison officers (ALOs) and ground unit commanders (GUCs) coordinate with pathfinders to make an air movement table. The following table shows who coordinates what.

SEQUENCE	ALO	GUC	COORDINATE WITH PATHFINDERS
1.	X	X	Operational location (coordinates).
2.	X		Locations of the primary and alternate communications checkpoints (coordinates).
3.	X		Location of release point.
			Coordinates / whether manned or unmanned.
4.	X	X	Time the site can begin operating.
5.	X		Aircraft information.
			Formation / Time interval / Time of flight. Drop speed / Drop altitude.
6.	X		Pathfinder transportation and time available for briefing.
7.	X		Pathfinder transportation station time.
8.	X	X	Routes into the objective area.
9.	X	X	Call signs.
			Aircraft / Pathfinders / Supported units / Other friendly units.
10.	X	X	Primary and alternate frequencies.
			Aircraft / Pathfinders / Supported units Other friendly units / Homing beacon.
11.	X	X	Fire support.
			Artillery / Tactical air support.
12.	X		Weather forecast.
			Ceiling / Visibility / Temperatures (high and low).
13.	X	X	Logistical support, including locations of-
			Medical aid station / Prisoner collection point / Fuel. Ammunition / Rations.
14.	X	X	Alternate plans (ALO and GUC).
			Evacuation plan / Escape and evasion.
15.	X	X	Friendly unit locations.
16.	X	X	Authority to implement mission change.
17.		X	Support personnel required.
18.	X		No-land or no-drop signals (day and night).
19.			Markings for obstacles (only on request of flight commander).
20.	X		Marking of objective site for identification from the air.
21.	X	X	Time allowed for approval.

## X. Air Mission Briefing

- A. **General:** The Air mission briefing (AMB) is the last coordination meeting of key participants in an air assault mission and ensures that key aviation personnel are briefed and that the details of each plan are finalized.
- B. **Content:** The briefing covers the details of all planning and preparation. It covers the operation from beginning to end, which includes the five plans explained previously, and the completed air movement table.
- C. **Participants:** The AMB should include, as a minimum, the S2, S3 fire support officer, aviation liaison officer (LO), ADA liaisons, aviation unit operations officer, AMC, battle team captains from air recon and attack helicopter units, and the ground tactical commander of the unit being inserted. It may also include the S3 Air, communication-electronics officer, and the S4. (See Annex A.)

## XI. Terms - Lifts, Serials and Loads: To maximize operational control, aviation assets are designed to lifts, serials and loads.

A. **Loads:** Within each lift, there are also a specific number of loads. A load is personnel and/or equipment that are designated to be moved, by a specific aircraft. When planning the air movement, each aircraft within the lift is termed a load. For example, within a lift of 10 aircraft, there are aircraft one through ten. For each lift thereafter, there will also be loads one through ten. Each aircraft is accounted for within each lift.

1. An aircraft load may also be referred to as a "chalk," "chalk number," or "chalk load." Loads also must be designated within serials just as they are within lifts. Counting within the serials is continuous up to the total of aircraft within the lift. For example, in a lift a 16 aircraft, in lift one; serial one; there may be loads one through four. In lift one; serial four; there may be loads 13 through 16.

B. **Serials:** There may be times when a lift is too large to fly in one formation. In such cases the lift is organized into a number of serials. A serial is a tactical group of two or more aircraft under the control of a serial commander (aviator) and separated from other tactical groupings within the lift by time or space. The use of serials may be necessary to maintain effective control of aviation assets. For example, if a Nap-of-the-Earth flight were used, it would be difficult to control 16 aircraft as a single increment. However, a 16 aircraft lift made up of four serials of four aircraft each could be more easily controlled.

1. Serials may also be required when the capacity of available PZ's or LZ's is limited. If there is a lift of 16 aircraft and the available PZ's and/or LZ's will accommodate only four aircraft; it is best to organize into four serials of four aircraft each.
2. Serials are employed to take advantage of available flight routes. If there are several acceptable flight routes, the AATFC may choose to avoid concentrating his force along one flight route. If the commander wants all of his forces to land simultaneously on a single LZ, he does so by having all the serials converge at a common RP before landing. With a lift of 16 aircraft and four available flight routes, the AATFC could use four serials of four aircraft each. Each serial would use a different flight route. Each time there is a new lift; a new serial begins. For example, in lift one, there are serials one through four. In lift two, serials start again with one.

C. **Lifts:** A lift is one sortie of all utility and cargo aircraft assigned to a mission. That is, each time all assigned aircraft pick up troops and/or equipment and set them down on the LZ, one lift is completed. The second lift is completed when all aircraft place their second load on the LZ.

D. **Sequence of Departure:** The sequence of departure from PZ's is based upon the mission to be accomplished by each subordinate unit upon landing. Unit priorities are based on the sequence of arrival at their LZ's; Units are scheduled to depart (in order) based on flight route time to the LZ. For example, If Company A is to land first (at H-hour) and Company B second (at H+5), and Company B is 15 minutes farther (in flight time) from the LZ, it may depart the PZ before Company A.

XII. **Time / Distance planning factors:** When estimating the distance of a flight route or the time needed to fly a specific flight route, refer to the following factors:

Air Craft	Cruising Speed	Max Speed
UH-1N	110 KIAS	120 KIAS
UH-1Y	158 KIAS	164 KIAS
UH-60L/M	150 KIAS	159 KIAS
SH-60	146 KIAS	180 KIAS
CH-47D/F	130 KIAS	170 KIAS
CH-53E	150 KIAS	200 KIAS
CH-53K	160 KIAS	200 KIAS
V-22	220 KIAS	250 KIAS

- A. If the time required to flight a specific flight route is between one minute increments, round up to the next whole minute. (Example – 3.5 minutes would be rounded up to 4.)
- B. If the distance of a specific flight route is between one kilometer increments, round up to the next whole kilometer. (Example- 16.5 kilometers would be rounded up to 17 kilometers.)
- C. The distance for the PZ to SP is 3-5 K or 2 minutes of flight time, and the distance from RP to LZ is also 3-5 K or 2 minutes of flight time

Flight time is computed using this formula:

$$T = \frac{D \times 60}{S \times 1.84}$$

**T**= Time in minutes.

**D**= Distance in Kilometer (km)

**S**= Groundspeed in knots (AMC provides this by computing airspeed (KIAS) and converting it to ground speed (KPH))

**Note:** The figure 60 used in the formula converts hours to minutes. The figure 1.84 converts knots to kilometers per hour. A fraction of a minute is always rounded up.

**XIII. Air Movement Table:**

**A. The Air Movement Table:**

1. Contains aircraft allocations
2. Designates number and type of aircraft in each serial
3. Specifies departure point, route to and from the loading area and loading, lift-off and landing times

B. The table is prepared jointly by the AATF staff and aviation personnel, and is completed in detail since it derives as the primary movement document. The completed table will be disseminated to the PZCO, the pathfinder team sergeant, and the air mission commander.

C. **NOTE:** The table controls AATF movement from PZ to LZ as air assault forces fly to the LZ utilizing radio listening silence, if possible.

AIR MOVEMENT TABLE																					
LINE #	AVN UNIT	LIFTED UNIT	LIFT #	SERI AL	CHALK	PZ	PZ ARR/LOAD TIME	T/O TIME	SP TIME	RP TIME	LZ	LZ TIME	LZ HDG	LZ FORM	ROUTES		LOAD		REMARKS		
															INGRESS	EGRESS	PAX	SLING			

**XIV. Air Movement Timing:**

- A. A successful air assault operation is a sequence of actions carefully planned and precisely executed.
- B. The basis for timing is the time when the first aircraft in the first lift of the operation touches down on the LZ. It is referred to as H-hour. All times in air assault operations are referenced from the H-hour (landing column, air movement table). The H-hour in an air assault operation is equivalent to the attack time in an OPORD. If delays are encountered due to weather or aircraft delays, the commander announces a new H-hour.

**XV. Loading time:** Loading time is the time required, before lift-off, to load the aircraft. Time to load is normally dependent on prior training, equipment to be carried and light conditions. Night operations require more loading time. Once loading time is determined, it is added to the previously computed times. During day time operations allow 3 minutes for load time and for night operations allow 5 minutes for load time. For instructional purposes 1800 to 0600 will be considered Night time conditions.



BUMP PLAN													
LINE #	AVN UNIT	LIFTED UNIT	LIFT	SERIAL	CHALK	PZ	PZ ARR/LOAD TIME	T/O TIME	SP TIME	RP TIME	ROUTES		REMARKS
											PAX	SLING	

XVIII. **Aircraft Bump and Straggler Control:** Company or lower units specify PZ bump and straggler collection points. Personnel not moved as planned report to this point, are accounted for, re-grouped and rescheduled by the PZCO for later delivery to the appropriate PZ's.

XIX. **DUTIES AND RESPONSIBILITIES OF KEY POSITIONS DURING A COMPANY AIR ASSAULT.**

- A. **COMPANY COMMANDER:** Has overall responsibility for the Air Assault operation. He plans the operation, briefs subordinate leaders, issues the OPORD, and conducts rehearsals. He rides in the AMC's Aircraft to ensure better command and control.
- B. **PZ CONTROL OFFICER:** He may be the XO, 1SG, or a Platoon Leader.
- C. **PZ CONTROL NCOIC:** Is the 1SG, a PLT SGT, Section SGT, or a Squad Leader.
- D. **RTO:** With two radios: one on Combat Aviation Net and one on Company Command Net, sometimes called a PZ Control Net.
- E. **CHALK-LINKUP GUIDES:** One per chalk. Their primary duties are to assist in link-up and movement of chawks from the unit AA to the chalk AA.
- F. **#1 TDP SIGNALMAN:** Provides visual guidance for the A/C. He should have a seat on the lead A/C.
- G. **SLINGLOAD TEAM:** A signalman, a hook-up man, and a static probe man.
- H. **AIRCRAFT TROOP COMMANDER/ CHALK LEADER** - Each load has a designated troop commander. The aircraft troop commander is responsible for inspecting his load. He briefs his personnel on:

1. SEATING ARRANGEMENT
2. LOADING PROCEDURES
3. USE OF SAFETY BELTS
4. IN-FLIGHT PROCEDURES
5. OFFLOADING PROCEDURES

I. **Pickup Zone Control Officer:**

1. Pickup zone control officer organizes, controls and coordinates operations in PZ's selected by the AATFC (S-4 selects and controls logistical PZ's).

J. **The PZCO accomplishes the following:**

1. **Forms the control group:** To manage operations, the PZCO forms a control group to assist him. It may include air traffic control, subordinate units and support personnel (manpower to clear the PZ, security). The PZCO selects a central location to position the group. The PZCO is designated by the AATFC, usually the S-3 Air. For battalion air assault operations, each company commander appoints a PZCO who operates a company PZ for the battalion.
2. **Establishes communications:** The PZCO should communicate on two primary radio frequencies; one to control movement and loading units and one to control aviation elements (combat aviation net). Alternate frequencies are provided as necessary.
3. **Plans and initiates fire support:** He plans fires near PZ's to provide all around protection (from available support) without endangering the arrival and departure of troops or aircraft.
4. **Plans and initiates security:** The PZCO ensures that adequate security is provided. Security protects the main body as it assembles, moves to the PZ, and is lifted out. Other forces should provide security elements if the PZ is within a friendly area. Security comes from AATF resources if it is to be extracted from the objective area.
5. **Clears the PZ of obstacles.**

K. **Pathfinder Team Responsibilities**

1. GROUND TO AIR COMMUNICATIONS:
2. INSPECT LOADS / SLINGLOADS:
3. PREPARE / MARK SITE:
4. ASSIST PZCO:

L. **Site Team Leader-** The site team leader reconnoiters, establishes, and operates the landing site. He supervises it and, at any time, might supervise the GTA radio operator. Some of his responsibilities include the following.

1. ORGANIZING AT AN OBJECTIVE RALLY POINT
2. RECONNOITERING TO DETERMINE –
  - Long axis.
  - Usable area.
  - Ground slope (compute).
  - Land Heading.
  - Best landing formation.

3. DESIGNATING SLING-LOAD POINT(S)
4. EMLACING AND BRIEFING THE GTA RADIO OPERATOR.
5. CLEARING TOUCHDOWN AND SLINGLOAD POINTS.
6. ORGANIZING PERSONNEL AND LOADS FOR AIR MOVEMENT
7. CLEARING OR MARKING OBSTACLES.
8. PREPARING FOR DAY OR NIGHT OPERATIONS.
9. CONTINUING TO IMPROVE THE SITE.

M. **Extra Pathfinders-** These Soldiers operate the GTA radio and the pathfinder internal radio net (if established), position and operate navigation and assembly aids, and clear or mark obstacles. Four factors dictate the number of extra pathfinders employed.

- The size of landing site.
- The expected density of air traffic.
- The number and type of visual and electronic aids used.
- The tactical situation

## XXI. DEVELOPING UNIT SOPs

A. The CO may use helicopters when inserting or extracting patrol units, positioning weapons and crews, conducting resupply, and evacuating casualties. The company should have an SOP for working with helicopters. The SOP should cover the following:

- LZ and PZ selection, security, operation and activities.
- LZ and PZ marking procedures.
- Downed aircraft procedures.
- Load plan preparation.
- Loading procedures.
- Organization for an air assault operation.
  - a. Air assaults involve assault forces (combat, CS, and CSS) using the firepower, mobility, and total integration of helicopter assets and maneuver on the battlefield to engage and destroy enemy forces or to seize and retain key terrain.
  - b. Air movement operations involve the use of Army airlift assets for other than air assaults.

# Annex A

## Air Mission Brief

This appendix addresses the air mission brief. Included are samples of the air mission brief agenda and the air mission brief checklist. The air mission brief is the information required by subordinate units to complete their mission in accordance with the commander's intent. It details the scheme of maneuver and how supporting elements act to support it.

### AIR MISSION BRIEF AGENDA

See [table P-1](#) for a sample AMB agenda.

**Table P-1. AMB agenda**

<b><i>Air Mission Brief Agenda</i></b>	
Task organization and roll call	AATF S3
Time hack	AATF S6
Enemy forces	AATF S2
Friendly forces	AATF S3
TF mission	AATF S3
BCT/Bn commander's intent	AATFC
Ground scheme of maneuver	AATF S3
Concept of fires (SEAD and ground tactical)	AATF FSO
Aviation mission	ASLT AVN S3
Staging plan	TF XO
Loading plan	AATF S3 Air
Air movement plan	ASLT S3/ MSN Lead
Landing plan	ASLT S3/ MSN Lead
Laager plan	ASLT S3/ MSN Lead
Attack reconnaissance avn mission/concept	ATK S3/Cdr
Tasks to subordinate units	AATF S3
Coordinating instructions	AATF S3
Service support (FARP plan)	ASLT AVN S4
MEDEVAC/CASEVAC plan	HSSO/Med. Co. Cdr
Command	AATF S3
Signal	AATF S6
Operational risk assessment	AATFS3
AATFC comments	AATFC

**AMB checklist**

<b>Air Mission Brief Checklist</b>		
Roll Call Time Zone Time Hack Packet Check References Task Organization (Infantry Brigade TF)		
<b>1. SITUATION</b>		
a. Enemy forces (synopsis of overall enemy situation) (TF S2).		
		(1) Air IPB. (2) Enemy air capability. (3) Enemy ADA capability.
		(a) Type / location. (b) Night capability / range. (c) Weather / NOTAMS.
		Sunrise / Sunset. Moonrise / Moonset. Max Percent Illumination. Range: (during AASLT; i.e. 0% to 45%). NVG Window / Ceiling / Visibility. MAX Temp / MAX DA / PA. EENT / BMNT.
b. Friendly forces (TF S3).		
		(1) Mission higher headquarters (include CDR's intent). (2) BDE/BN Infantry scheme of maneuver (TF S3).
<b>2. MISSION (TF S3).</b>		
		a. Bde / Bn CDR's intent (AATFC). b. Conditions for AASLT. c. Mission risk assessment (TF S3). d. Aviation mission (AVN S3).
<b>3. EXECUTION.</b>		
		a. Aviation commander's intent (AMC). b. Concept of the aviation operation (AVN S3). c. AVN tasks to subordinate units (AVN S3). d. Fires (FSO).
		(1) FA. ANNEX I (FS graphics).
		(a) Purpose of supporting fires. (b) Unit / location. (c) Priority of fires. (d) SEAD information/targets. (e) LZ prep.
		(2) CAS (ALO).
		(a) Purpose / mission. (b) Coordinating altitude.
		Rotary wing. Fixed wing.
		(3) Attack reconnaissance aviation. (ARB S3/CDR).
		(a) Mission.

		(b) Concept. (c) BPs / ABFs / sectors / routes in/out.
e. Staging plan. ANNEX A (PZ DIAGRAM) (TF XO).		
		(1) Name / number. (2) Coordinates. (3) Load time. (4) Take off time. (5) Markings. (6) Control. (7) Callsigns / frequencies. (8) Landing formation. (9) Heading. (10) Hazards / go arounds. (11) Supported unit bump plan. (ANNEX A-1, Coordinating Instructions). (12) PZ arrival times.
f. Air movement plan. (ASSLT S3/MSN lead).		
		(1) Routes / corridors. ANNEX B (ROUTE CARD).
		(a) Ingress primary / alternate. (b) Egress primary / alternate. (c) Others.
		(2) En route hazards. (3) Abort criteria.
		(a) Weather. (b) Aircraft available. (c) Time. (d) Mission essential combat power. (e) Mission criticality. (f) Enemy.
		(4) Penetration points. (5) En route formation / rotor separation / angle / airspeeds (as per crew brief). (6) Deception measures / false insertions. (7) Air movement plan. ANNEX D. (8) Cargo doors. (9) External lighting (SOP). (10) Restricted operations area (ROA) locations.
		AASLT C2. ATK C2. QUICKFIX.
		(11) MEDEVAC / CASEVAC aircraft plan. (12) Aircraft decontamination plan.
g. Landing plan. ANNEX C (LZ DIAGRAM) (ASSLT S3 / MSN lead).		
		(1) Name / number. (2) Coordinates. (3) LDG times (as per AMT). (4) Markings. (5) Control. (6) Call signs / frequencies. (7) LDG formation / direction. (8) LZ abort criteria (based on GTCs guidance). (9) Go arounds (flight / single ship - as per crew brief). (10) Departure (as per crew brief).
h. LAAGER plan. (ASSLT S3/MSN Lead).		
		(1) Name / locations. (2) Times / REDCON status. (3) Security plan. (4) Scatter plan.

	(5) Call forward plan.
	i. Extraction plan. (ASSLT S3 / MSN lead).
	j. Coordinating instructions (Aviation) (ASSLT S3).
	(1) MOPP level / CBRN warning status. (2) M60D control status. (3) ADA status. (4) IFF procedures / times. (5) Chaff / ALQ 144 employment. (6) NVG specific procedures (SOP). (7) VHIRP / IIMC (as per crew brief). (8) Mission contingencies (SOP).
	(a) DAARP / SAR / EAE. (b) Downed aircraft / SERE / DART. (c) BDAR.
	(1) Spare aircraft procedures. (2) Special aircraft equipment / preparation. (3) PPC. (4) Mission brief sheet. (5) Risk assessment form (completed / signed). (6) Safety considerations / hazards. (7) OPSEC considerations (SOI, kneeboard sheets, maps). (8) Weather decision plan/times. (9) Debrief location / time.
	k. Coordinating instructions (TF) (TF S3).
<b>4. SERVICE SUPPORT.</b>	
	a. Class I (1 case MREs/5 gallons water/survival kits) (TF S4).
	b. Class III/V (III/V PLT LDR).
	(1) Minimum fuel (as per crew brief). (2) Basic load. (3) FARP / FARP.
	c. Class VIII (HSSO).
	(1) CCP. (2) Evacuation plan/hospital location.
	d. MEDEVAC / CASEVAC plan (HSSO).
<b>5. COMMAND AND SIGNAL (TF S3).</b>	
	a. Command.
	(1) A2C2. As per ACO, this AMB, and established tactical flight procedures. (2) AATFC / location. (3) AVN TF AMC / location. (4) ABC / location (5) Aviation chain of command (as per serial chain of command).
	b. Signal (TF S6).
	(1) Communication card day (ANNEX ____). (2) Execution matrix (ANNEX ____). (3) Code words.
MISSION BRIEFBACK:	
FINAL QUESTIONS:	
COMMANDERS COMMENTS:	

**NOTES:**