CHAPTER 9

HIGH ALTITUDE HIGH OPENING OFFSET PARACHUTING

High altitude high opening offset delivery techniques offer the commander a unique method for infiltrating HAHO-trained operational elements. The RAPS gives the commander tactical capability to infiltrate these elements by parachute without requiring the aircraft to overfly the intended DZ. These elements can be released at an offset release point and cover long distances under canopy. The RAPS' reserve parachute's flight characteristics are identical to the main parachute's, increasing the chance of a successful infiltration should a cutaway from the main parachute take place because of a malfunction.

NOTE: For parachute systems that have a smaller reserve canopy than the main canopy, the mission commander planning the operation must plan for contingencies that address the reduced glide capability should a cutaway from the main parachute take place.

Techniques and Requirements

The parachutist uses a combination of delayed free-fall and HAHO techniques if making exits at an altitude above 25,000 feet MSL. He can also deploy his parachute at intermediate altitudes to minimize the chance of parachute damage or injury to himself upon canopy deployment while using the glide advantage of the RAPS.

WARNING

The RAPS' maximum deployment altitude is 25,000 feet MSL.

The maximum altitude for routine training should be 17,500 feet MSL. Conducting training at this altitude eliminates the need for oxygen prebreathing and minimizes the chance of parachute damage and injury to the parachutist due to opening forces. The parachutist is also less likely to encounter physiological problems and cold weather injuries.

HAHO offset parachuting requires extensive airspace clearance. Additionally, this training must take place in areas having alternate DZs should the parachutist (or element) not be able to reach the primary DZ.

Accurate weather data is essential. Wind directions and speeds are critical for route planning, Air temperatures are important for preparing against exposure injuries.

WARNING

Icing conditions may occur at high altitude or during adverse weather conditions. Ice formation on the parachute canopy adversely affects its flight characteristics by increasing the rate of descent and decreasing its responsiveness.

Special Equipment

Special precautions must be taken to prevent exposure injuries to the parachutist at high altitude. The Extended Cold Weather Clothing System (ECWCS) provides the necessary thermal protection. It consists of Gore-Tex fabric outerwear and other insulated clothing items. Gloves are necessary to protect the hands. The gloves, however, must not interfere with the manual activation of the main parachute or the performance of emergency procedures.

The parachutist can use toggle extensions. They permit the parachutist to keep his hands at waist level during extended flights. They also allow for improved blood circulation to the hands and arms and lessen fatigue. Other techniques are to leave the brakes stowed and simply steer the parachute using risers to make needed corrections.

Each parachutist needs a compass to determine direction should he separate from the group or during limited visibility, such as when passing through cloud layers. A marine-type, oil-dampened compass that pressure changes or cold weather does not affect is recommended. The compass must show direction regardless of its mounted attitude on the parachutist. The parachutist takes care when mounting the compass to avoid erroneous readings that interference from radios or other electronic navigation aids might cause. He declinates his compasses while wearing all his accompanying equipment. This action will account for all magnetic variances that accompanying metal objects cause.

The parachutist mounts the electronic navigation or guidance devices so that they do not interfere with the manual activation of the main parachute or the performance of emergency procedures. The use of such devices may also increase the likelihood of detection during infiltration.

The parachutist can use radios for air-to-air or air-to-ground communications. He mounts the radio so that it also does not interfere with the manual activation of the main parachute or the performance of emergency procedures. The use of radios may increase the likelihood of detection during infiltration.

Free-Fall Delays

As an aircraft increases, altitude, the aircraft's true airspeed (TAS) must increase to maintain a constant indicated airspeed (IAS) due to decreased air density. True airspeed is the actual speed of the aircraft through the air mass. When TAS exceeds terminal velocity, the parachutist must allow for longer delays in order to decelerate to a safe speed for parachute deployment (Figure 9-1).

WARNING

Failure to take the minimum recommended delay can result in serious injury to the parachutist and parachute damage.

EXIT ALTITUDE (IN FEET)	DELAY (IN SECONDS)
10,000 to 12,500	5 to 7
12,500 to 20,000	7 to 9
20,000 to 25,000	6 to 10
Above 25,000	Free-fall below 25,000 feet

Figure 9-1. Recommended free-fall delays.

Parachute Jump Phases

The HAHO offset parachute jump has four phases. These phases include exit, delay, and deployment assembly under canopy, flight in formation, and final approach and landing.

Exit, Delay, and Deployment

On the command "go," the group leader exits the aircraft. The remainder of the element exits the aircraft at 1-second intervals using the same exit technique as the group leader. Each parachutist free-falls for the required delay.

A parachutist experiencing a malfunction must immediately start emergency procedures to minimize loss of altitude.

Upon deployment, the group leader checks with the element for malfunctions, then assumes the initial flight heading.

In the event a member of the element is beneath the group, the element must execute the rehearsed tactical plan (lose altitude to reform the group or follow the low parachutist).

Assembly Under Canopy

The opening altitude should be a minimum of 1,000 feet above any cloud layer to allow enough altitude for the element to assemble under canopy. Each parachutist flies his canopy to his rehearsed position within the formation. Each parachutist assumes the group leader's heading.

Flight In Formation

The "wedge" and the "trail" formations are the easiest to control and to maintain in flight (Figure 9-2). The group leader has the primary responsibility for navigation. He jumps with the navigation aids.

Element members in the formation maintain relative airspeed and position with the group leader. They do this maneuver by trimming their canopies using the trim tabs on the front risers and by braking.

Under limited visibility conditions, such as when passing through a cloud layer, each parachutist goes to half brakes and maintains the compass heading until he regains visual contact with the formation. Each parachutist must maintain altitude awareness.

Final Approach and Landing

The group leader initiates the landing pattern at about 1,000 feet AGL in the landing area.

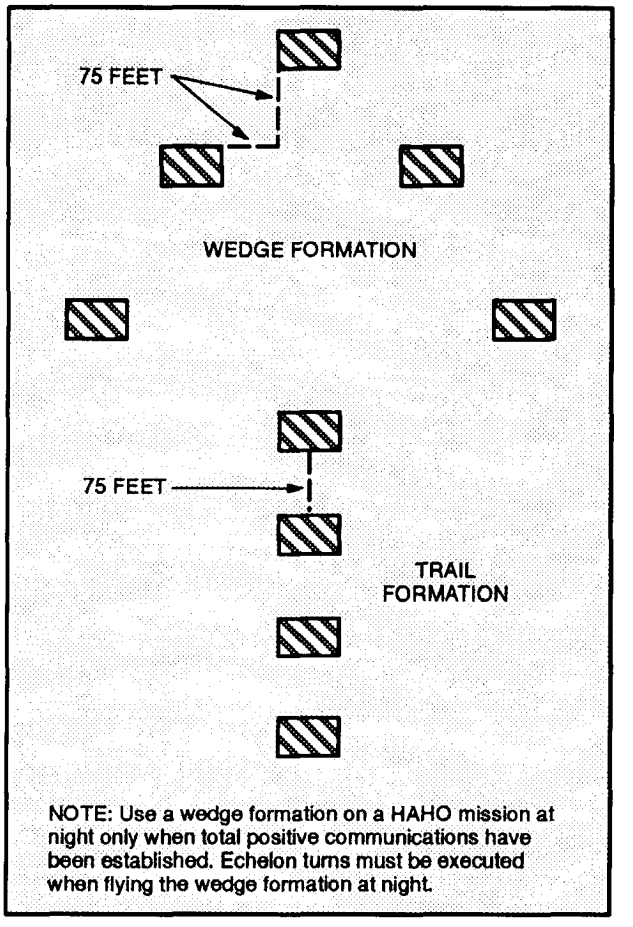

Figure 9-2. Assembly flight formations.

Each parachutist removes any trim tab settings to prevent injury on landing from the increased forward speed.

The landings are staggered to avoid the turbulence directly above and to the rear of the other ram-air canopies. Each parachutist prepares to do a PLF should visibility prevent him from seeing the ground.