

## 4.2 Launch

Upon successful completion of the Pre-flight Checklist, the Air Vehicle is ready for launch. Always obtain airspace clearance IAW the procedures outlined in Section 5.2 before operating the Wasp Air Vehicle.

1. Record launch time in Flight Log.
2. Grasp Air Vehicle by payload pod (see Figure 4-4). Assume correct stance for launch, positioned to launch into wind.

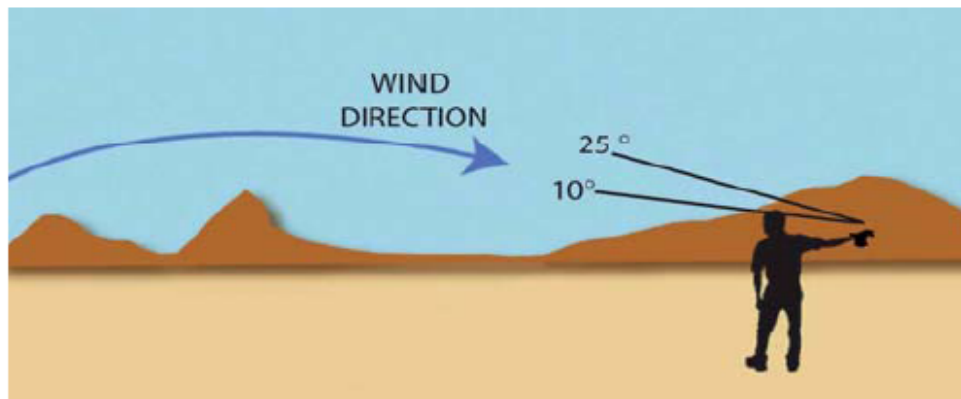


**Figure 4-4 Grasp Payload Pod**

### ***CAUTION***

Do not rotate Air Vehicle in any direction for 8 seconds immediately before launch. This allows elevons to properly center before launching. Failure to observe this procedure can result in a mislaunch.

3. Ensure prop is clear.
4. Press Throttle Switch forward and hold until 100% throttle achieved.
5. Wait for motor to reach full power (no longer), then throw Air Vehicle into wind. Throw upward at angle between 10 and 25 degrees (Figure 4-5). Maintain focus on correct stance and technique. Avoid twisting Air Vehicle in any direction at the moment of launch.



**Figure 4-5 BATMAV Launch**

6. Maintain full throttle. Apply left/right stick as needed. Fly straight ahead.
7. Do not make any turns until steady climb at neutral stick is well established.
8. Maintain climb out into wind until approx. 200-300 ft. AGL then select appropriate flight mode.
9. If wind speed indications are questionable during flight, conduct gentle 360-degree orbit to calibrate wind speed/direction algorithm.

## 4.4 Landing, Recovery, and Inspection

### **WARNING**

Personnel in the area of the landing site should be prepared to quickly move if it appears the Air Vehicle will land too close.

#### 4.4.1 Landing

The Wasp Air Vehicle is designed to be manually or autonomously landed. The Air Vehicle should always be landed into the wind. This helps slow forward motion and stabilize the Air Vehicle horizontally during descent.

Before landing the Air Vehicle, clear the approach and landing area for obstacles and personnel to prevent injury and Air Vehicle damage.

To perform a manual landing:

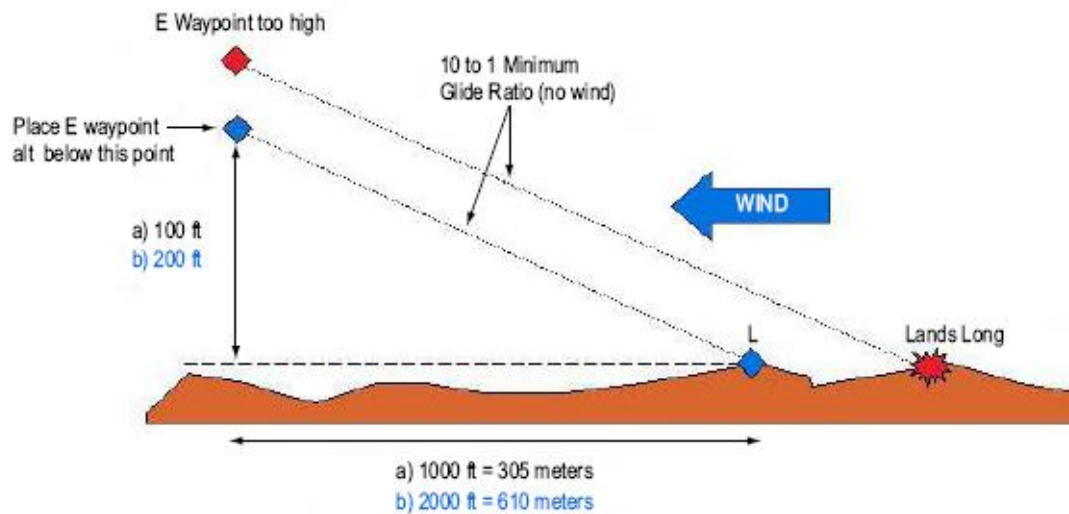
1. Make final approach in ALT mode. Recommended altitude for final approach is 50 ft. AGL.
2. Command Autoland.

To perform an autonomous landing:

1. Place Air Vehicle in NAV mode.
2. Air Vehicle will fly to Waypoint E. If necessary, Air Vehicle will then begin a left spiral to either climb or descend to programmed E altitude, then fly to Waypoint L where it will Autoland.

#### 4.4.2 Locating E and L Waypoints

The Wasp Air Vehicle glides at a 10 to 1 glide ratio (i.e., travels 1000 feet horizontally for every 100 feet of altitude AGL). When locating the E and L waypoints, verify that the difference in altitude between E and L and the distance between E and L correspond to a glide ratio that is not steeper than 10 to 1. See Figure 4-6.



**Figure 4-6 Wasp Air Vehicle Glide Ratio**