

LOST LINK PROCEDURES

The Warrior Unmanned Aircraft System is operated with pre-established procedures in the event of link loss. If lost link occurs, the Warrior UA will execute the preprogrammed Emergency Mission Plan {Return Home Data} coordinates/waypoints, airspeed and altitudes that are programmed/loaded into the unmanned aircraft's flight control computer and can be modified in flight, if required. In the event of link loss for the requisite period (nominally 2 seconds of continuous lost uplink), the UA climbs/descends to a designated/programmed altitude, at the programmed airspeed and returns to the programmed recovery point [RETURN HOME POINT]. Normally, the UA operator recovers the UA upon receiving a LINK LOSS warning displayed on the UAS operator's ground control station console within the programmed time sequence. RETURN HOME parameters are: Cruise altitude up to 25,000 feet MSL, the RETURN HOME POINT(s) will be in the designated the Fort Huachuca Special Use Airspace R-2303 and outside the Libby AAF exclusion airspace.

Procedures:

NOTE: Preflight Actions

Unless the update AWR supersedes this, as per the Warning Note within the MQ-1 directs the following will be included in the flight planning stages for Emergency Missions until it is superseded through a fix;

a. The Emergency Missions altitude match the enroute portion of the operational mission as close as possible, and the Emergency Operation airspeed be set to 75 knots or as close to it as the mission will allow, and bring the AV home safely in the event of lost link preventing large changes in airspeed requiring pitch attitude changes.

b. Operational mission airspeeds shall be set as close to 75 kts (Lost Link Default airspeed) as possible, mission dependent. (This will limit the difference in airspeed changes required in the crucial 2-51 seconds at the beginning of lost link.)

1. When a LOSS LINK condition occurs, the Warrior (ER/MP) Block 1 UA operator shall immediately notify Libby ATC and provide the following information:

- (1) Call Sign. In accordance with DOD FLIP
- (2) LOST LINK EMERGENCY
- (3) Altitude
- (4) Endurance Remaining. Expressed in hours and minutes of useable fuel remaining to burn-out, e.g. 9 hours and 22 minutes to burn-out.

2. The Warrior (ER/MP) Block 1 UA Mission Commander will determine if the mission can be continued or return to Libby AAF, in the event of a LINK LOSS condition and the UA operator re-gains LINK CONTROL with the Warrior (ER/MP) Block 1 UA. The Warrior (ER/MP) Block 1 operator will notify Libby ATC of intentions.

3. RETURN HOME ORBIT

(1) In the event of LINK LOSS, the Warrior (ER/MP) Block 1 UA will remain within the Fort Huachuca R-2303 and fly to the RETURN HOME ORBIT as defined in the EMERGE CNY MISSION PROFILE and continuously fly the six (6) waypoint RETURN HOME ORBIT until LINK CONTROL is regained or fuel exhaustion. The RETURN HOME ORBIT [HILL FOURR] is defined by the following waypoints as grid coordinates commencing with Initial Point #1

- (a) Initial Point / WP #1: 12R WA6792701341 / N31 38 43 W110 17 01
- (b) WP #2: 12R WV6994698830 / N31 37 21 W110 15 45
- (c) WP #3: 12R WV7318698852 / N31 37 21 W110 13 42
- (d) WP #4: 12R WA7493301328 / N31 38 41 W110 12 35
- (e) WP #5: 12R WA7309903717 / N31 39 59 W110 13 44
- (f) WP #6: 12R WA6991303695 / N31 39 59 W110 15 45

(2) ALTITUDE: In the event of LINK LOSS, the Warrior (ER/MP) Block 1 UA will climb or descend to the preprogrammed EMERGENCY MISSION PROFILE altitude. The Warrior (ER/MP) Block 1 UA operator shall preprogram an altitude commensurate with the required vertical separation to remain clear of R2312, should the planned flight be flown in the vicinity of the Aerostat site.

4. FLIGHT TERMINATION POINTS

(1) The below Lost Link Points are within R-2303 and are designated as the Flight Termination Points (FTP).

- (a) Initial Point / WP #1: 12R WA6792701341 / N31 38 43 W110 17 01
- (b) WP #2: 12R WV6994698830 / N31 37 21 W110 15 45
- (c) WP #3: 12R WV7318698852 / N31 37 21 W110 13 42
- (d) WP #4: 12R WA7493301328 / N31 38 41 W110 12 35
- (e) WP #5: 12R WA7309903717 / N31 39 59 W110 13 44
- (f) WP #6: 12R WA6991303695 / N31 39 59 W110 15 45