

**1. Lost link between ground station computer and UAV.**

In the event that the UAV loses 900MHz communication with the ground control computer when the flight controller has control of the UAV, one of the pilots will regain control of the UAV with a 72MHz RC transmitter and the UAV will be brought in for a landing immediately. Either transmitter operated by either pilot can kill the throttle on the UAV. Since two pilots have control of the UAV at all times, and the UAV is always in the line-of-sight, it should be noted that the sampling missions do not rely on a link to the ground control computer.

**2. Lost link between UAV and one transmitter.**

If the primary pilot is unable to control the UAV on one channel with one transmitter, the secondary pilot will take control of the UAV with the other 72MHz RC transmitter operating on a different channel and the UAV will be brought in for a landing immediately. Either transmitter operated by either pilot can kill the throttle on the UAV. Back-up transmitters are always available on-site should one transmitter fail to operate. The back-up transmitter is kept near the main pilot. In the case of transmitter failure, the backup transmitter can be turned on and control of the UAV be reestablished within a period of seconds.

**3. Lost link between UAV and both transmitters.**

Should both transmitters fail to communicate with the UAV, the autopilot will maintain a steady orbital pattern with a 150 meter diameter path operating at ¼ throttle and a constant speed of 45 km/h. This will enable the ground-based-pilots sufficient time to regain control of the UAV with another transmitter. Should the ground-based-pilots be unable to regain control, the autopilot will continue to circle until it is out of fuel and will slowly pilot the aircraft toward the ground in a mild orbital pattern. This pattern is always in an uninhabited area near the airstrips at the Kentland Farm.