

**Communication among the flight crew.** Two pilots are capable of controlling the UAV. The primary pilot operates the Piccolo manual controller, which communicates with the UAV via a 900MHz spread spectrum link. The secondary pilot operates a 2.4 GHz R/C transmitter capable of asserting manual control via an on-board control signal multiplexer. All flights are conducted within a 1500 foot radius of the pilots and observer, within their continuous, direct line-of-sight view. Manual control may be established at any time by one of the two control channels. The pilots are expected to stand within 15 feet of one another and within 15 feet of the Ground Control System (GCS) operator. An additional observer, also standing within 15 feet of the pilots, scans the airspace for other aircraft that may be approaching the UAV's operating area. If voice communication is lost with any member of the ground crew (the two pilots, the observer, or the GCS operator), the aircraft will be immediately recovered.

**Communication between the GCS and the UAV.** When the primary pilot relinquishes manual control to the autopilot, the operator interface running on the GCS laptop continues to communicate with the UAV via the Piccolo system's 900MHz link. At any time, one of the two pilots may assert manual control of the UAV using either the primary (900MHz) controller or the secondary (2.4GHz) controller, respectively.