

AUTOPILOT PROCEDURES TO REESTABLISH LINK

Time/Condition	Process
LOS Datalink: 0 to 2 seconds lost link. DLOS Datalink: 0 to 5 seconds lost link. Ku-band Datalink, Launch & Recovery Mode: 0 to 2 seconds lost link. Ku-band Datalink, Cruise Mode: 0 to 10 seconds lost link.	Arming Time. The PCM waits to see if it is a temporary dropout. The autopilot flies the aircraft based on its last input commands. NOTE More arming time is allowed for Ku-band datalink in Cruise Mode because the aircraft is expected to be above 2000 ft AGL altitude.
2 to 51 Seconds If the aircraft is within 200 feet below or above lost link altitude when it goes lost link, the aircraft will fly to the entry waypoint and fly the airspeeds and altitudes assigned in the emergency mission. S-42 24 Aug 09	Sets AN/AAS-52 laser and munitions to safe. Sets Heading Hold to the Initial Lost Link Heading. Sets Air Handler to Off. If airspeed is less than 75 KIAS and altitude is less than 10,000 feet, sets pitch to 2 degrees. When airspeed reaches 75 KIAS, engages airspeed hold. If no emergency mission is loaded, and aircraft is within 200 feet of lost link altitude, aircraft begins loiter at current location. If the aircraft is outside 200 feet of lost link altitude, aircraft climbs for 51 seconds on lost link heading and begins loitering approximately 2.5 miles from point of lost link. If the aircraft is at or above initial lost link altitude when it goes lost link, the aircraft will fly to the entry waypoint and fly the airspeeds and altitudes assigned in the emergency mission. If the aircraft is 200 feet or less below initial lost link altitude it will orbit present position and climb to initial lost link altitude prior to turning to the entry waypoint. If the aircraft is more than 200 feet below the initial lost link altitude, it will perform the 51 second climb in the direction of the lost link heading and may climb through initial lost link altitude. Sets Airspeed Hold 75 KIAS. Sets Power Mode On and throttle to maximum allowable based on altitude. Sets Roll/Pitch/Yaw SAS to On. Continues to use the airspeed, alpha, and altitude sensors that were selected before entering lost link. Continues Stall Protect in previous state (On or Off). Sets Auto Fuel Transfer to On. Sets anti-ice system (if installed) to Auto. Sets Pitot & Blanket Heat On or Off, as previously set by pilot if Outside Air Temperature (OAT) is above 10°C. Sets Pitot & Blanket Heat, and nose lens heat to On (30%) any time the OAT is below 10°C (if airspeed is above 40 KIAS). Sets flaps to 0°. Starts the aircraft VCR recording. Sets Tx 1 and Tx 2 Digital Downlink to Off (turns off ROVER operation).
52 Seconds to 30 Minutes or Initial Lost Link Altitude reached	The aircraft flies a circular loiter pattern (3-mile diameter) centered on a point 2.5 miles from current location in direction of lost link heading. Sets Altitude Hold to the Initial Lost Link Altitude. Continues Airspeed Hold at 75 KIAS. Sets SAR power Off. If below Initial Lost Link Altitude, raises landing gear. NOTE If the aircraft has not reached the loiter pattern after the first 51 seconds, the aircraft will climb/descend to Initial Lost Link Altitude (ILLA) while en route to the loiter. If the aircraft is above the ILLA upon reaching the loiter pattern, it will immediately turn to the entry waypoint of the emergency mission. If the aircraft is below the ILLA upon reaching the loiter pattern, it will execute the loiter pattern.
30 Minutes or Lost Link Altitude Reached	The autopilot proceeds to fly the aircraft to the entry waypoint in the emergency mission. Transitions to entry waypoint airspeed. NOTE At this point, if no lost link mission has been preprogrammed, the PCM will initiate the "No Emergency Mission Loaded" flight termination process (see procedures below).
Entry Waypoint Reached	When the aircraft turns toward the entry waypoint in the emergency mission, it begins to execute the mission. Airspeed, altitude, etc. will be as programmed for the mission.
Next-to-Last Waypoint Reached	When the aircraft passes the next-to-last waypoint in the emergency mission, a 96-hour timer is set. LOS transmitters are forced On.
Last Waypoint Reached	When the aircraft reaches the last waypoint, it heads for the fifth-from-last waypoint and repeats the last six waypoints of the mission.
If No Emergency Mission is Loaded: Flight Termination Procedures	The aircraft will stay in the loiter pattern and fly at lost link altitude until mission time is over (96 hours or when out of fuel).
When Out of Fuel.(or when 96-hr timer complete)	The PCM kills the engine and lowers the landing gear. The autopilot attempts to fly the aircraft as though it was executing the emergency mission while the aircraft descends.

Figure 1-67