engine, thus preventing the engine from achieving full thrust. Due to the resulting thrust imbalance, the vehicle tumbled out of control. Destruct was sent some 80 seconds after Centaur ignition.

506. 5051 AC-71 (Galaxy 1R), 22 Aug 92, Response Mode 4T, Flight Phase 3: A Centaur engine check valve stuck open allowing air into the turbopumps. Air entering through the stuck-open check valve liquefied and froze in the LH2 pump and gear box of the C-1 engine, which prevented the engine from achieving full thrust. Destruct was sent by the RSO about 193 seconds after Centaur ignition. This is the same failure experienced by AC-70 launched on 18 Apr 91.

507. 5054 AC-74 (UHF Follow On-1), 25 Mar 93, Response Mode NA, Flight Phase 2 and 5: The flight was considered successful although below normal Atlas performance resulted in a low spacecraft apogee (5000 nm vice planned 9225 nm). The perigee altitude was near nominal at 120 nm. A loose screw that allowed the oxygen regulator to go out of adjustment caused booster-engine thrust to drop to 65% of nominal at 103 seconds. The booster engines remained attached to the sustainer, which flew to propellant depletion. These events led to depletion shutdown of the Centaur stage 22 seconds early.