F-16XL-1 Testbed Aircraft

The added flexibility of the DFCS increased the versatility of this aircraft as a testbed for aerodynamic research and investigation of other advanced technologies. The aircraft's instrumentation system monitored control system operations, and was capable of supporting additional measurements.

The digital flight control system was compatible with a Research Flight Control System (RFCS) which could be installed when necessary. RFCS capability provided a flexible, reliable and safe means to modify the aircraft control system. The RFCS computer significantly increased computational speed and computer memory.

The XL-1 aircraft was previously used in NASA's Cranked-Arrow Wing Aerodynamics Project, or CAWAP, which provided aerodynamic data for NASA's High Speed Civil Transport (HSCT) research program. The unique cranked-arrow wing shape provided better low-speed lift and handling characteristics than the modified "double-delta" wing used on the Concorde supersonic transport (SST).

The XL-1 participated in NASA's 1995 sonic boom study, in which the aircraft flew 200 feet behind a NASA SR-71 to probe the boundary of the SR-71's supersonic shock wave. These tests measured and recorded the shape and intensity of the shock waves. The studies helped HSCT engineers to better understand supersonic shock waves in order to reduce sonic boom intensity near populated areas.

NASA's XL-1 aircraft is in flyable storage at Dryden.