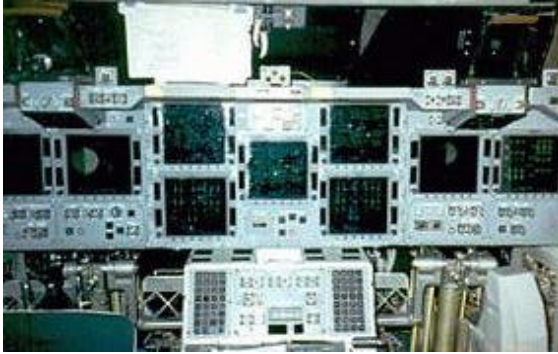


The Shuttle "Glass Cockpit": Multifunction Electronic Display Subsystem



New "glass cockpit"



Original Shuttle cockpit

The Space Shuttle "Glass Cockpit," technically called the Multifunction Electronic Display Subsystem, has increased capabilities, decreased weight and power consumption, and replaced obsolete equipment on the flight deck of the Shuttle.

MEDS replaced four cathode ray tube displays and 32 gauges and electromechanical displays with a total of 11 active matrix liquid crystal flat-panel, full-color displays in the Shuttle cockpit. Nine flat-panel screens are located in the forward cockpit and two in the aft cockpit.

By allowing cockpit displays to be positioned on any screen of the pilot's choosing, MEDS provides additional backup capabilities in the event of failures than were available with mechanical cockpit displays. MEDS screens also can be changed out in-flight if necessary. MEDS uses 90 watts less power and is 75 pounds lighter than the original displays. Color added to the original Shuttle display functions provides easier crew recognition.

Objectives in the design of the MEDS included:

- Minimize and avoid impacts to other Shuttle subsystems and use original interface with other Shuttle subsystems.
- Minimize impacts to crew training.
- Increase reliability (reduce failure rates and increase redundancy).
- Reduce power and weight.
- Replace multiple unique electronic equipment units with fewer common electronics equipment.

MEDS incorporates or replicates the functions of cockpit displays that include:

- General Purpose Computer display screens.
- Electromechanical flight instruments and tapes – Attitude Directional Indicator; Horizontal Situation Indicator; Airspeed Mach Indicator; Altimeter Vertical Velocity Indicator; Surface Position Indicator.
- Electromechanical subsystem status tapes and meters for – Orbital Maneuvering System, Main Propulsion System, Auxiliary Power Units, Hydraulic Systems.