

Connector Products Division

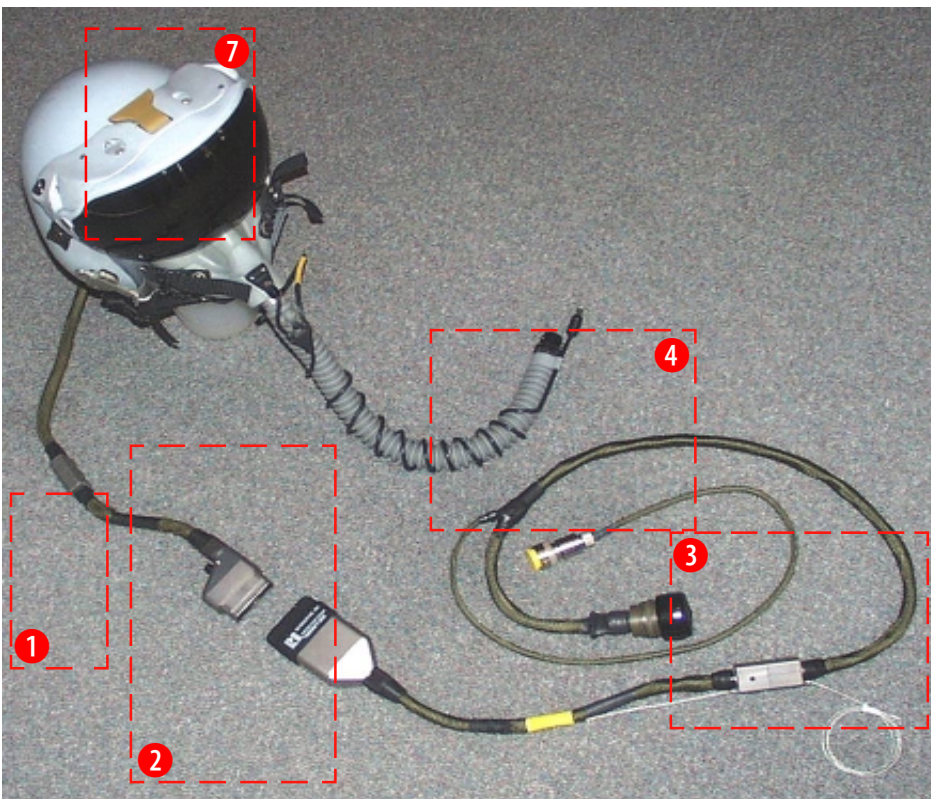
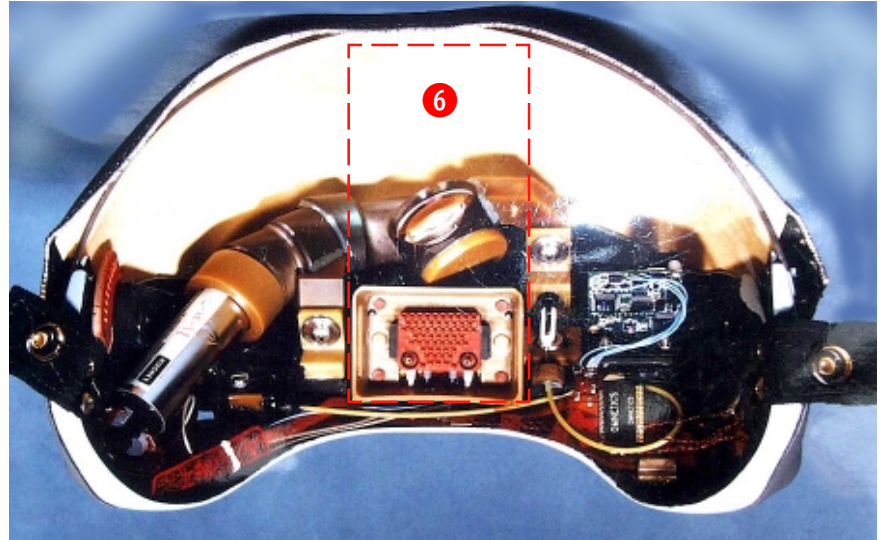
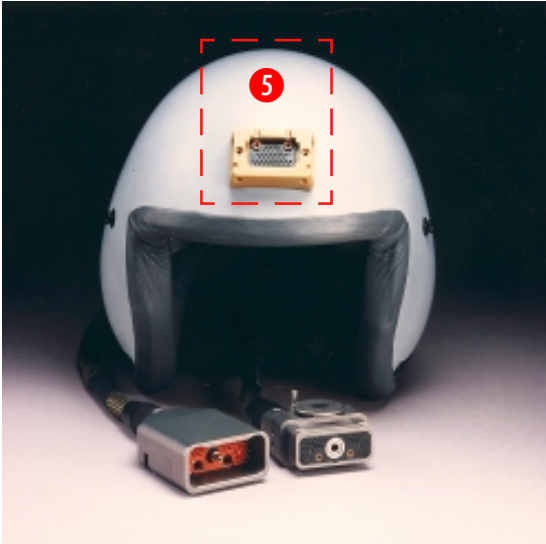
Los Angeles, California

Helmet Mounted Display Components

Pilot Helmet Mounted Display Components manufactured by Reynolds are integrated into a helmet mounted display system. These components, which include highly flexible wiring harnesses, connectors and Flex Circuits, provide high voltage, low voltage and signal lines to the display unit. The Flex Circuits provide the interfaces to the camera, display and tracker components. The connector to the helmet is very

flexible to minimize pilot irritation and fatigue.

8,500 VDC is required by the display unit to provide a clear image to the pilot even in bright sunlight. The system must function at altitudes up to 70,000 feet and at temperatures of -40°C to $+55^{\circ}\text{C}$. If the pilot is ejected, the connectors, which are explosion proof, disconnect quickly and automatically with a low unmating force.



1 The Helmet Release Connector (HRC) permits the helmet to be shed in the event of inadvertent helmet loss during ejection.

2 Reynolds Quick Disconnect Connector (QDC) is the point of separation for normal aircraft entry/exit as well as the primary separation point for emergency egress. QDC is a low force, manual or automatic, explosion proof quick disconnect.

3 In-line Release Connector (IRC) which provides a backup separation in the event of system failure during emergency egress. It is a one time breakaway device. The lanyard is attached to the IRC and to the airframe.

4 Two MIL-C-38999 connectors interface with the aircraft for all electrical input to the helmet including the high voltage requirements.

5 The pre-wired helmet without the display unit in place.

6 Shown is the Universal Connector and internal wiring of components contained in the display unit module. Reynolds Flex Circuits provide the interfaces to the camera, display and tracker components.

7 A helmet assembly with the display unit

mated to the helmet (5) using the Universal Connector and side snaps for rigidity. The display unit can be easily replaced by unplugging the connector and side snaps.