MQ-1 Predator System

The Predator system consists of the aircraft (RPA), the ground control station (GCS), the ground data terminal (GDT) and the Predator Primary Satellite Link (PPSL) as described below.



GCS description

The GCS consists of 2 identical workstations where the RPA itself is controlled by the pilot and the Sensor Package attached to the RPA is controlled by the sensor operator. Typically, the pilot sits and operates the workstation on the left (PSO1) while the sensor operator mans PSO2 (the workstations are designed in a fashion that either crewmember can work from either station for safety purposes).



Each workstation is equipped with a control stick, power lever, flap lever and prop lever located within the control console. These same levers are used by the sensor operator to focus and zoom the sensor package cameras. Additionally, each workstation is equipped with four video monitors: two are used to display video from one of the many cameras onboard the RPA (known as the HUD) as well as a moving map to identify geographical location of the RPA (known as the tracker display); the other two provide aircraft performance data (such as EGT, Prop position, oil level, etc.) and are located on the control console.



Also contained in the GCS are a UHF/VHF radio, and ARC-210 radio (capable of UHF/VHF/FM secure/non-secure) and a phone.

Datalink Description

The datalink system consists of a GDT which contains three antenna and a PPSL. These GDT antenna transmit aircraft commands to the RPA via a C Band frequency. In turn, the RPA return status information back to the GCS. The aircraft has two TX/RX so there are two uplinks and downlinks being transmitted while in Line-of-Sight (LOS) operation.



Additionally, the RPA is equipped with Beyond-the-Horizon (BTH) flight capabilities through use of a satellite. The PPSL is utilized much like the GDT in that is it transmits the command link to the satellite (which transmits to the aircraft) and receives return link from the aircraft via the satellite.

