

These cameras are expensive (about \$300,000) and may provide more precision than would be required for BTWC-related overflights. A smaller tactical reconnaissance camera system such as the Vinten Type 360 70-mm camera (as seen in Figure 8) can provide low altitude photography for preparation of site maps at a fraction of the cost; a Vinten Type 360 camera costs about \$33,000.

Thermal Infrared Systems

For night operations, thermal infrared sensors will be required. Forward-looking infrared (FLIR) systems can be used to acquire oblique thermal infrared imagery as shown in Figure 9. FLIR imagery can be used to monitor and record events in a similar manner to that in which oblique photography can be used during the day. In Figure 10, two Honeywell FLIRs have been mounted on an Ayres S2/R aircraft for nocturnal monitoring and reconnaissance missions. A gimballed FLIR allows an operator to image terrain anywhere ahead and all angles below, to the sides and to the rear of the aircraft. Most FLIR systems are used together with high resolution television displays to provide real-time data to the pilot and systems operator for navigation as well as surveillance.

An infrared linescanner can be used to acquire a strip of vertical thermal infrared imagery. Linescanners use a rotating mirror with optics to direct thermal radiation from a small ground surface area to a detector or detector array. The mirror rotates perpendicular to the line of flight so that with each cycle, a strip of ground normal to the flight direction is covered. The forward motion of the aircraft causes successive scan lines to cover adjacent strips on the ground, building a two-dimensional image. Figure 11 shows an infrared linescanner designed for reconnaissance missions.