

Optical Sensors for Peacekeeping

Aerial cameras, charged coupled devices and multispectral scanners have great potential for United Nations peacekeeping operations. Airfield activity, selected installations, tank storage areas and ship docking areas can be readily monitored. Base camps along border zones and military activities of ground-based groups can also be monitored. Figure 8 is a normal black and white aerial photograph over an airfield. Note the aircraft on the runway and the resolution obtainable from standard aerial photography. Because of their high resolution these systems are highly recommended, despite the limitations on their use posed by adverse weather conditions and darkness.

Interpretation of Daytime Optical Imagery

The interpretation of daytime optical imagery, whether it is normal aerial photography or charged coupled device (CCD) video data, is based on seven basic principles. These are: shape, size, tone, shadows, pattern, location and texture. Using these concepts as an interpretation guide as well as understanding the situation on the ground, an on-board observer or an interpretation specialist should be able to obtain information readily from the imagery provided.

Interpretation of aerial optical imagery will be conducted from either photographic negatives or prints, or from videotaped CCD data, depending on the system used during data collection. The electro-optical imagery has the capability of being downlinked in real-time from the aircraft to a ground processing station if required. An additional advantage of an electro-optical sensor over photographic systems is that the on-board observer can conduct immediate analysis of the imagery on the aircraft; normal photography requires processing of the negatives and prints on the ground. CCD sensors can also be used in low light level conditions while aerial photographic systems require