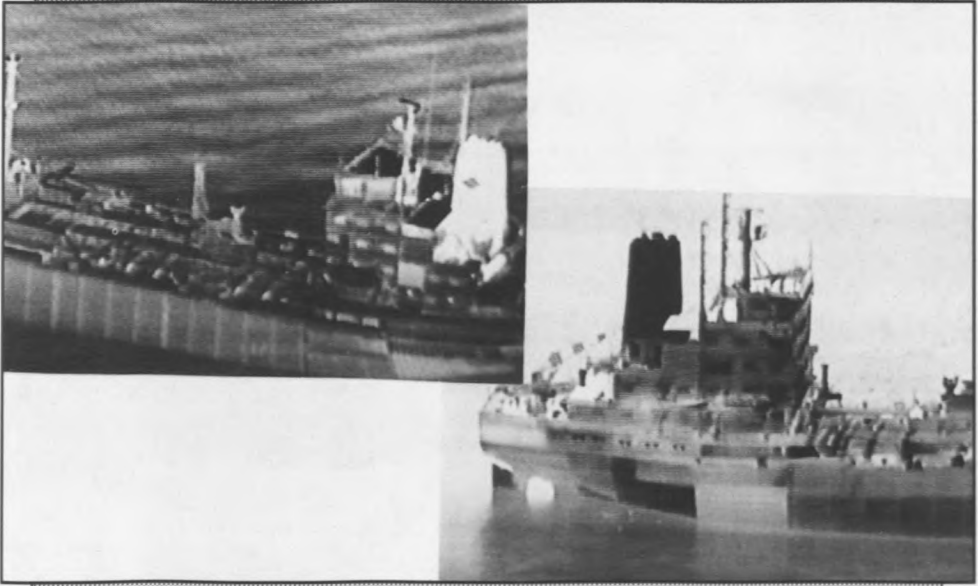


Figure 16 FLIR Images of Freighters



Notice the hot exhaust stack in the left image and the ability to "see through" the hulls of the ships because of the differences in surface temperature resulting from the contents of the holds. (Courtesy of David M. Dorschner, Aviation Resource Management.)

Thermal infrared systems provide a nighttime capability to complement that of photography and charge coupled device (CCD) systems. Infrared linescanners provide a good nighttime counterpart to vertical aerial photography since linescanners are usually configured to record long strips of overhead imagery (Figure 15).

FLIRs are better for acquiring oblique imagery and real-time operations. A FLIR can be pointed toward a specific object, such as the ship shown in Figure 16, and then keep it under observation continuously as it moves or as the aircraft circles around it. FLIR systems can also be equipped to show ancillary information such as the time, date and position in the margins of the image frame.

The resolution of thermal infrared systems is not as fine as that of aerial photographic cameras, but the systems provide enough detail to distinguish between most categories of equipment. Several different kinds of aircraft can be identified from the thermal image in Figure 17. As with aerial photographic systems, the detail provided by a thermal image is partly determined by the distance from the sensor to the object. If more detail is required, it may be possible simply to fly lower.