

Operating Guideline # 818

Thermal Imaging Cameras

December 9, 2019



**PURPOSE:**

The purpose of this Operating Guideline (OG) is to establish guidelines for the use of thermal imaging cameras.

**GUIDELINE:**

1. The Thermal Imaging Camera (TIC) may be used in any area of operations in which it may prove useful. There are five areas where the TIC should be deployed routinely including:

- a) With the officer on a fire attack or rescue team advancing into a burning structure.
- b) With the lead member of the primary RIT team to enable them to find a downed firefighter(s) quickly and initiate their rescue.
- c) With Command for use in initial size-up of the incident and for on-going re-evaluation of the situation.
- d) On calls for rescue or searches for persons missing in bush or on water.
- e) On any other alarm where visibility of firefighters is impaired or the ability to “see” heat signatures/differentials would be an advantage.

2. On any structure fire, a minimum of two thermal imaging cameras should be utilised. The first TIC should accompany the first-in teams (fire attack or rescue – if indicated). The second TIC should be made available for use by the RIT team. Additional TICs can be deployed as necessary and needed.

3. Firefighters will not solely depend upon the camera for personal navigation. Occasional scanning of the area is important, but care should be used to ensure that the TIC is not being used at all times for navigation. Should the TIC cease to function the team could become easily lost. Always maintain situational awareness of location and escape routes when using the camera.

4. Through the proper use, the user will be able to see “through” dense smoke and darkness, detect and display the relative temperatures of objects within the scene, locate the seat and spread of the fire, move swiftly in search and rescue of casualties, see in zero visibility conditions and significantly improve the safety and mobility of firefighters. It is important to understand that the TIC is not capable of rendering images through glass or water however, and these surfaces can “reflect” an image in much the same way that a mirror can.

5. During rescue operations, the TIC can be used to guide the crew through unknown floor plans, identify objects and find occupants. Firefighters should still get down on their hands and knees and sweep the room with their arms and legs (or probing tool such as an axe) to search for victims. When using the camera for search and rescue operations it must be made clear that a search done by standing in a doorway viewing through the camera is not an acceptable procedure unless that it is the only way to search a room too hot to enter.

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The camera cannot see through solid objects such as a bed and these may obstruct the image of a person laying behind them).

6. The TIC will show a great temperature difference between the fire and the surroundings allowing firefighters to locate the seat of the fire as quick as possible. The camera can be used to show where the heat from a fire is actually impinging on any exposures. This will allow firefighters to direct water to the most affected area. During ventilation operations the TIC can also be used to identify the best location to vent by searching for the hottest spot on a roof for example.

7. The camera can also be used in overhaul by finding any hidden fires or “hot spots” that need attention. The camera will allow the user to find fire in locations that are not visible to the human eye such as inside walls, chimneys, fuse panels, attics, etc. .

**RESPONSIBILITY:**

It is the responsibility of all members to comply with the provisions of this OG and particularly that Company Officers (supervisors) and firefighters (workers) ensure that they adhere to their duties in accordance with the provisions of this document and the Occupational Health and Safety Act.

**REFERENCES:**

- Occupational Health and Safety Act (RSO 1990, c. 0.1)