

BULLARD COMMANDER THERMAL IMAGING CAMERA STANDARD OPERATING GUIDELINE

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I. SCOPE

- A.** This standard establishes guidelines for the use of the Thermal Imaging Camera (TIC).

- B.** To provide a reference document to be used for training of personnel in the uses, deployment, limitations, operation, care and maintenance of the TIC.

II. POLICY

It shall be the policy of this department to utilize thermal image cameras in every structure fire and any other situations as identified where it will enhance the safety of fire department personnel.

III. PROCEDURE

- A.** The TIC is carried on engine 74. Personnel should become familiar with the location of the TIC on the apparatus. Ultimately, the company officer shall determine who will operate the TIC.
- B.** When the Engine Company arrives on the scene of a fire or any other incident where smoke will or could hamper visibility, personnel shall remove the camera from its charger and take it to the entry point of the structure.
- C.** When operating in the "Rescue Mode", company personnel shall use the thermal image camera to aid in the search for victims.
- D.** If conditions warrant the use of the camera, the nozzle person shall be the operator of the camera. Command should be notified that the TIC is in use and transmitting. Through field exercises it has been determined that the safest and most efficient operation of the camera occurs when its operator's view is not obstructed by other firefighters. Camera operators must be aware that they have a tendency to move faster than the rest of the team who are operating in zero visibility. Standard firefighting practices should be observed with the Thermal Imaging Camera acting as an "extension of the tool in the hand." Less than two person teams should only be deviated in extremely dire situations.
- E.** In moderate to heavy smoke conditions the Camera allows a crew to quickly check a smoke filled area to determine whether or not there is fire present. The camera operator must remember not to move too quickly, so that the rest of the team is not lost in the zero visibility environment.

- F. The Camera has the potential to inspire over-confidence because it allows firefighters to "see" in an environment that in reality has zero visibility. Firefighters should remember that they must stay low even if the camera allows them to see that the majority of the heat is at the ceiling. The possibility of a flashover in the dynamic atmosphere of a structure fire is higher than ever before because of new materials, construction methods and rapid responses. Personnel must understand that the camera could fail and an escape route must be easily located, either by following a hose line or rope tag line to safety.
- G. The camera can also serve as a tool for detecting heat during the overhaul phase of an incident. It must be remembered, that the TIC cannot penetrate most construction materials including drywall, plaster and lathe, concrete, glass or plastic. Also, the TIC cannot penetrate water. Because the camera has a black and white display it is sometimes difficult to differentiate between what is heat or fire trapped in a wall and what is radiant heat.

IV. OPERATION OF THE TIC

- A. The TIC is stored in the charger in the cab of engine 74. The charger also includes a spare battery.
- B. To turn the unit on, push the large GREEN button on the left side of the unit. It will take approximately 15 seconds for the unit to warm up, self check and become operational.
- C. Once the camera is active, an image will be visible on the screen. Cool areas appear dark while sources of heat appear white.
- D. In the same area as the GREEN power button is a black, notched wheel. This is similar to the focus wheel on a camera. By manipulating this knob clockwise (as one looks at the screen), the differentiation between cool and hot areas will become crisper. However, this also results in less of a spectrum of black to gray to white that will be created of cool to warm and warm to hot areas. The knob's range of adjustment is one revolution. Bullard refers to this wheel as the "Thermal Throttle."
- E. If the camera is not to be used for a period of time but needs to remain in a state of readiness, press the YELLOW "sleep" button located next to the GREEN power button. By using the "sleep" feature, battery life is extended. When the camera is in the "sleep" mode the screen will be blank, however, the battery power bar graph will remain active and a "sleep" symbol will appear on the screen. To activate the camera from the "sleep" mode, depress the YELLOW button.

- F.** The Bullard Thermal Imaging Camera also has the ability to transmit the image that is seen on its screen to a remote site (monitor) in the cab of engine 74. This real time video feed can be transmitted by the camera by depressing the BLACK button which is marked "Transmit." The BLACK transmit button is located near the YELLOW power button. ANYTIME THE CAMERA IS DEPLOYED THE TRANSMIT FEATURE WILL BE ACTIVATED. It is important to be aware of the fact that utilizing the video transmission feature shortens the battery life by half.
- G.** On the LEFT side of the display screen, a bar graph allows the operator to see the amount of energy reserve that remains in the units battery pack.
- H.** If the battery power bar graph indicates that the battery has less than 1/4 of its energy capacity remaining, it should be replaced with a fully charged battery. If the camera is deployed on an incident, the battery should always be replaced with a fully charged battery at the conclusion of the incident to insure that the camera is always in a constant state of readiness. To remove the battery, flip up the two black tabs and open the hinged door. Ensure that the replacement battery is reinserted with the same orientation so that the battery's contact points coincide with those of the camera. The charger supplied with the TIC is a rapid charger which can recharge batteries in under one hour.