NORTH COUNTY FIRE AUTHORITY

POLICY & PROCEDURE MANUAL
OPERATIONS

SUBJECT:

THERMAL IMAGER DEPLOYMENT

PURPOSE:
The purpose of this procedure is to identify the strategic and tactical approach for the deployment of the Thermal Imagers (also referred to as TI's, this is not a camera). Each North County Fire Apparatus has a Thermal Imager assigned and available to enhance the safety and survival of themselves and the public with the proper use of these tools. This will serve as a guideline for use.

POLICY:
Upon arrival at a structure fire, the Captain shall bring the Thermal Imager with them as part of their equipment cache. The Imager should be attached to their PPE to provide for hands free operation of other skills and to provide for accountability of the equipment.

SIZE-UP:
The TI may provide valuable information during size-up, which can assist the Incident Commander in determining the strategy and formulating the incident action plan. Early identification of tactical priorities/needs can prove beneficial in placing initial and subsequent attack lines. When a Company Officer or Incident Commander arrives on the scene, one of the first challenges is to identify the location of the fire. A TI can save a great deal of time by helping to pinpoint a concentration of heat within a particular area of the building, especially in large commercial or multi-story structures. An Incident Commander, armed with this knowledge, can better direct firefighters regarding their point of entry and plan of attack so as to optimize their resources.

Even before firefighters enter a burning structure, the Incident Commander or Company Officer can accomplish a great deal from the exterior with the aid of thermal imaging technology.

Some factors that can be assessed from the outside include:

Finding the seat of the fire, observing changing or spreading conditions, identifying critical building construction features, and identifying conditions that could threaten structural integrity.

DEPLOYMENT:
The early and rapid deployment of the Thermal Imager, while operating in the Offensive Strategy, may enhance the visibility in a visibly diminished atmosphere, thus increasing firefighter safety and survival, as well as improving the survival potential of our customers.

The TI can also be deployed while operating in a Defensive Strategy. It can provide the Incident Commander or Company Officer with valuable information during size-up. Early identification of structural compromise, fire location in the structure, e.g. attic and identification of severely threatened exposures would provide valuable information when determining the strategy.

By deploying a TI to the exposures, information could be obtained as to the extent of impingement to the exposed structure, early identification of avenues of fire spread and possibly any hot spots, which could cause extension.

It shall be the responsibility of the Company Officer/Command to rapidly deploy the TI in visibly diminished atmospheres or in an atmosphere that may suddenly become visibly diminished.

PRIMARY APPLICATION:
The primary use of the TI for the fire department is for conducting search/rescue and crew accountability tasks. The TI can reduce the amount of time it may take using standard search techniques. This will lead to a more effective and organized search, while quickly identifying the fire. By locating the fire quickly, we will better be able to determine our tactical priorities and rescue priorities (do we remove the victims from the fire or remove the fire from the victims).

The TI will enhance the ability to maintain crew accountability by increasing the vision capabilities of the operator/company officer.

This does not replace the accountability tasks required of the Captain and each individual operating on the fire ground. We must stay together in complex situations and/or structures in order to enhance our survival.

It is imperative to realize, that with any tool, there are limitations. TI deployment into the operation should not propagate a sense of security. Crews and TI operators must be aware that the TI may malfunction and sole reliance on the camera is not prudent firefighting. Additionally, it should not replace or violate the core or our experience, training, safety procedures, or standard firefighting practices/principles.

As always, safety must be the top priority.

OTHER USES:

- Hazardous material incidents, material release, material levels in containers from a safe distance.
- Vehicle accidents, off road not readily visible, ejected patients etc.
- EMS; i.e. amputations, MCI's.
- Locate victims in distress that are in water and not fully submerged.
- To locate victims in building collapses, mud slides, debris flows and other entrapment situations.
- To locate hot spots or hidden fire during wildland incidents.
- Overhaul.
- Training.
- Public education.

Note:
Viewing white on the LCD screen does not always mean there is fire, it is simply displaying a heat signature, or heat differential between objects. White does mean that one object is warmer in comparison to another. Further investigation is warranted when uncertain.

RELATIVE HEAT INDICATOR (RHI)

The Bullard T3LT and T3MAX are equipped with temperature measurement capability. The RHI will indicate the approximate temperature of the object viewed within the "crosshairs" shown in the middle of the screen. The accuracy is dependent on numerous factors including distance from the object and it's emissivity, which is the objects ability to radiate heat. Metal and shiny objects will reduce accuracy of the temperature indication. Use this method of heat measurement only as a quick reference and verify indicated heat levels through traditional means whenever possible.

T3MAX models have a "red-hot" feature that can sense extreme heat to approximately 1100 degrees F or hotter. Object will appear red on the screen in heat colorization.

Note:
A fully charged NiMH (nickel metal hydride) battery will provide a run time of 2½ hours. This run time will be less in extreme heat or extreme cold.

Additionally, as with all batteries, your Bullard rechargeable battery will experience a slow drain of it's charge during storage.

Batteries if not placed in a charger should be rotated once a week, **SUNDAYS.**

Safety Note:
Bullard T3 Thermal Imagers are not certified as intrinsically safe, they **should not** be operated in an explosive environment.

CARE AND MAINTENANCE:
The Bullard T3 imager requires little maintenance. To Maintain Optimal Performance of Your Thermal Imager:

Daily or After Each Use:
- ☐ Ensure unit is working properly.
- ☐ Insert fully charged battery.
- ☐ **If** necessary, recharge previous battery.
- ☐ Verify all battery chargers and associated cables are functioning properly.
- ☐ For TI, TixTM, MX™, or TI CommanderTM verify solid "click" when closing thumb latches on battery door.
- ☐ For TI, TIx, MX, or TI Commander verify the presence of all three rubber bumpers.
- ☐ For T3™ Series, T4 TM Series or TacSight™ verify both battery locking buttons engage for release. Verify the battery is seated properly.
- ☐ For Eclipse™, remove battery and verify the depressed battery latch slides back and forth easily. Also verify that, once the battery is installed, the latch springs back into position (with a "click") to secure the battery properly.
- ☐ For T3 Series, T4 Series or TacSight verify the presence and condition of the rubber bumper around the display screen.
- ☐ Verify that there are no signs of cracking or tearing on any of the rubber pieces and buttons on the unit.
- ☐ Using a damp cloth, clean off large pieces of debris.
- ☐ For Eclipse, wipe the front lens with a clean, damp cloth.

Weekly:
- ☐ Clean lens with soft cloth and mild cleaner.
- ☐ Clean LCD display cover with soft cloth and mild cleaner.
- ☐ Verify all hand straps are in usable condition and properly secured.
- ☐ For TI, Tix, TI Commander, T3MAXTM, T4, T4MAX™, or T320TM (with optional Thermal Throttle), verify the Thermal Throttle is properly functioning.
- ☐ For T4, verify the 2X/4X zoom is properly functioning.
- ☐ Check for cracks, holes or other damage to the unit's outer shell.
- ☐ Verify the batteries do not show physical signs of damage.

Monthly:

- ☐ Check tightness of all external screws, including those holding on straps, those connecting the LCD display cover and those connecting any bumpers. Do not over-tighten.
- ☐ Cycle each battery fully. This is accomplished by using a conditioner or by fully charging and draining the battery. Ensure that one battery is always fully charged for use at an incident.
- ☐ Using a damp cloth and mild cleaner, clean the outer shell of the unit. Do not immerse the unit under water for cleaning.
- ☐ Verify that the battery contacts on the unit are corrosion-free.
- ☐ Verify the battery chargers are corrosion-free on all primary contacts.
- ☐ Users with a wireless receiver should verify that the transmitter and receiver are functioning properly and that all receiver cables are in good condition.

Note:

The Bullard imagers must be serviced by a factory representative, please don't attempt to service these units on your own. Please forward these requests through the chain of command. If at any time your thermal imager shows signs of damage or is not functioning properly, call 877-BULLARD. Consult the user manual for additional maintenance and service information.