CRITERIA FOR USE OF THERMAL IMAGING DEVICES

REVISED 08/03/06 **EFFECTIVE 07/17/2003**

05.601 PURPOSE

The purpose of this directive is to outline the appropriate applications for and the restrictions of use for thermal imaging devices within the Tyler Police Department. It shall be the policy of the Tyler Police Department to only use thermal imaging devices as directed by departmental policy and state and federal law. Equipment will only be utilized by personnel trained in its use and in applications acceptable by the Department.

05.602 DEFINITIONS

A. Commercial Structure - A structure existing for the purpose of trade or commerce.

B. Curtilage - the area immediately surrounding a residence that "harbors the intimate activity associated with the sanctity of a persons home and the privacies of life". In determining curtilage, officers should consider:

1. The distance from the home to the place claimed to be curtilage (the nearer the area to the home, the more likely that it will be found to lie within the curtilage);
2. Whether the area claimed to be curtilage is included within an enclosure surrounding the home (inclusion within a common enclosure will make it more likely that a particular area is part of the curtilage),
3. The nature of use to which the area is put (if it is the site of domestic activities, it is more likely to be a part of the curtilage), and
4. The steps taken by the resident to protect the area from observation by people passing by (areas screened from the view are more likely to be a portion of the curtilage).

C. Open Field - an area having no restricted access and is open to public view.

D. Infrared Equipment - Passive, non-intrusive system designed to detect heat variations among the objects in front of it, so as to produce an image indicating the presence of the heat producing source. Thermal imaging devices are most useful in late night or early morning because of the absence of solar loading or alternate light/heat sources.

05.603 PROCEDURES

A. Approved Law Enforcement Applications

1. Search and Rescue

Due to the human body giving off heat in the form of infrared energy, thermal-imaging devices can be used to locate lost persons. The imager allows officers to cover large areas quickly and accurately with less manpower than with conventional searching methods.

2. Locating Fugitives

Thermal imagers are excellent at finding people and animals hiding in foliage, regardless of the time of day. Use of thermal imaging allows officers to cover a large area and locate suspects without exposing officers to the suspect. Enough officers can then be deployed to the location to safely affect the arrest of the criminal.

3. Vehicle Pursuits

Thermal imaging equipment may be used to track a vehicle that had attempted to flee but abandoned the pursuit. Officers may be able to locate the now parked vehicle by detection of the heat emitted from the vehicle engine, the tires and the brakes.

4. Structure Profiling

Thermal imagery may be used to detect underlying structural components of buildings that may be helpful in planning and executing warrant services or raids. Thermal imagery may also be used to detect the large amounts of heat produced by indoor cannabis cultivation operations because of the extensive use of high intensity grow lamps. The entire building could be surveyed from a remote location for detection of inordinate heat levels or the unusual use of intake or vent fans used to cool the grow area by emitting excessive heat.

NOTE: While inordinate heat levels are consistent with indoor cannabis growing, the information alone is not grounds for a probable cause finding and the issuance of a warrant. As with any investigation, the officers involved must consider the totality of the situation before taking law enforcement action. Further, thermal imaging should only be used in the final stages of the investigation. **A properly conducted investigation will establish enough probable cause to obtain a search warrant to use the thermal imager on a residence (Kyllo v. U.S., 99-8508).**

The use of thermal imaging will not be considered in the investigation of clandestine laboratories; however, they may be used to locate nearby chemical dumps or spills which may indicate the presence of these laboratories.

5. Disturbed Surface

Thermal imaging technology can be used to conduct nondestructive surveys of walls or floors of structures that are suspected of containing money or drugs or other contraband. Detection is made based on the variation in the thermal absorption characteristics of building materials. This principal applies to the detection of secret compartments in houses or the detection of materials buried in disturbed soil.

6. Environmental Law Enforcement

Thermal imaging has been found to detect heat differentials generated by toxic waste, oil spills and the residue of clandestine drug laboratories and other pollutants. Consequently, these pollutants can be seen, and tracked back to their source. These materials can be detected from long distances, even at night.

7. Perimeter Surveillance

The thermal imaging device can be utilized to establish a perimeter surveillance system at a much-reduced cost of staffing. The heat signature produced by humans will allow the device to detect penetration of established perimeters by ingress or egress.

8. Officer Safety

The equipment may be used to locate threats such as hidden suspects, guard dogs or other dangerous obstacles. Not only can the officer see without being seen, he can see through visible obscurants such as dust and dense smoke. This allows the officer to scan through the smoke at a burning building or vehicle to look for victims or help determine the extent of the fire.

9. Hidden Compartments in Vehicles

The equipment may be used to conduct non-destructive surveys of vehicles or containers attached to a vehicle, which may contain false or hidden compartments suspected of transporting people, narcotics, or illegal contraband.

10. Flight Safety

Pilots of law enforcement aircraft may use themal imaging devices to enhance vision during nighttime missions. This can enable these pilots to locate and avoid such normally "invisible" obstacles such as high-tension wires, towers and antennas, as well as the characteristics of unfamiliar terrain. Pilots can advise ground units on the location of obstacles, and assist with safe movement on the ground.

11. Marine and Ground Surveillance

The thermal imager has the ability to see in total darkness, which provides a tremendous advantage to officers, whether on routine patrol, or during a surveillance mission. The passive nature of thermal imaging allows investigators to conduct surveillance completely undetected. Likewise, on bodies of water, thermal imagers are used for nighttime navigation, to locate and track vessels, and for search and rescue operations.

12. Accident Investigation

Thermal imaging devices may be used at accident scenes to detect skid marks and additional information undetectable to the naked eye. This will allow officers to establish vehicle speed more accurately. Cleaning effects from skid marks on the road that otherwise may not have shown any visible signs of a disturbance are a good example.

13. Newer Developing Applications

a. Crime Scene Investigation

Using a thermal imager during a crime scene investigation can assist officers in gathering evidence and may uncover situations of evidence tampering, contraband hidden in walls or buried objects.

b. Tactical Support

Prior to searches at night, thermal imagers may be used to better survey a scene to determine how to deploy officers and to identify the best point of entry. Sniper spotters can use it in concert with image intensifiers to reveal hidden suspects, multiple offenders and dangerous obstacles to forewarn other approaching officers.

c. Building Searches

This technology will allow officers to safely search buildings and locate suspects without exposing the officer to danger. The device can be used to "look" in attics by putting the thermal imager into the attic entry, and to search dark rooms without the use of flashlights.

B. Image Analysis Considerations

1. Any time thermal imaging is used in structure profiling, the use of a video recording device is highly recommended. The recorded information will assist in further analysis and may prove useful in any subsequent courtroom testimony.
2. The use of a thermal imaging system in surveillance situations should only be undertaken with an awareness of the effects of:

a. Solar Radiation (sunlight) will affect a building's thermal profile.

(1) Do not attempt thermal surveillance of a building during daylight hours or in the early evening.
(2) Once solar effects are no longer a factor, internal building heat will be detected based on the amount of heat and degree of insulation in the target structure.
(3) Nearby highly reflective materials, such as a car or trailer near the target building may affect surveillance efforts.

b. Terrain Features

(1) Trees and plants can cause a nearby wall or roof of a structure to become warmer since the tree/plant absorbs the heat during the day and slowly radiates the heat at dusk and early evening.
(2) Since cool air sinks to low lying areas, identical buildings at different elevations may exhibit different thermal images due to outdoor temperature inversion conditions.

c. Building Orientation

(1) The thermal imaging of a suspect structure and other similar structures for reference purposes should be performed from the same direction. (South and West walls absorb more solar heat).
(2) If the orientation of the thermal image cannot be held constant, the surveillance should be conducted very late at night or very early in the morning.

d. Building Materials

(1) Different building materials will emit heat at varying rates.
(2) Differing radiation rates occur due to wall and roof color. These color differences should be noted in the daylight, even though most thermal imagery surveys are conducted in the late night or early morning hours.

e. Weather Conditions

(1) Conditions such as fog, clouds, rain or snow present the thermal imager with numerous small surfaces (water droplets) between the imager and the structure or object at which it is looking. The imager will measure the heat from these small surfaces rather than the target object.

NOTE: Thermal imagers are extremely useful in a smoke filled environment for the detection of the fire heat source or in locating persons.

(2) High winds will significantly affect the cooling of building surfaces, both of radiated heat and internal emitted heat.

f. Operator Skill

C. Legal Considerations

1. Thermal imaging systems can be used to survey open fields, curtilage, and commercial structures without Fourth Amendment concerns as long as the point of observation is from a public vantage point where the operator has a right to be (such as public property, navigable airspace or, private property with the owner's permission.)
2. Thermal imaging will not be used for surveillance of private dwellings without a search warrant (Kyllo v. U.S., 99-8508).

D. Thermal Imaging Training

1. Equipment will only be utilized by personnel trained in its use and in applications acceptable by the Department as outlined in this policy.
2. Officers certified in "Basic Thermal Imaging" are authorized to use thermal imaging equipment in the following circumstances:

    a. Search and rescue
    b. Fire investigation
    c. Locating fugitives
    d. Vehicle pursuits
    e. Traffic accident investigation
    f. Perimeter surveillance
    g. Officer safety
    h. Marine and ground surveillance
    i. Hidden compartments in vehicles

3. Officers who have received certification as a "Thermographer" are authorized to use thermal imaging equipment in the following circumstances:

    a. Structure profiles
    b. Disturbed surface profiles
    c. Environmental law enforcement
    d. Known or assumed instances requiring testimony related to the equipment's operation or capabilities.

4. In all instances, officers utilizing thermal imaging equipment will refer to section IV.C "Legal Considerations" of this directive. Any further questions should be directed to the officer's chain of command, or other available supervisor in the absence of the former.

E. Requests for Use of Thermal Imaging Equipment

1. A request for the use of the equipment may be made by any officer at the scene of an incident within or originating within the City. Upon the approval of the on-duty supervisor, an equipment operator will be dispatched to the scene.

    a. If a Thermographer is not on-duty and conditions of the incident warrant the use of a Thermographer, an off-duty Thermographer will be called to the location.
    b. A call-out list of qualified personnel will be established by the CISD commander and will be furnished to Public Safety Communications.

2. Requests for the use of equipment, which originate outside the City, must be approved by the on-duty shift commander prior to TPD personnel being dispatched to the location. Approval will be based on:

    a. The nature of the incident
    b. Availability of personnel

F. Communications

Special communications procedures will be established by the shift commander or incident coordinator on an as needed basis. In any event, special communications procedures must be coordinated with Public Safety Communications personnel.

Approved: 08/03/06