



GENERAL OPERATIONS			1101.00	
<div><div>USE OF THERMAL IMAGING EQUIPMENT</div><div></div></div>				
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PURPOSE

The purpose of this standard operating procedure is to outline the appropriate applications for, and the restrictions of, use of thermal imaging devices within the Punta Gorda Police Department.

SCOPE

This procedure shall apply to all Punta Gorda Police Department personnel.

DISCUSSION

It shall be the policy of the Punta Gorda Police Department to only use thermal imaging devices as directed by departmental policy and state and federal law.

DEFINITIONS

1. **Curtilage:** The area immediately surrounding a residence that “harbors the intimate activity associated with the sanctity of a man’s home and the privacies of life.” In determining curtilage, officers should consider:
 - a. 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);
 - b. 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);
 - c. 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
 - d. 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).
2. **Thermal Imaging 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 or early morning situations because of the absence of solar loading or alternate light/heat sources.
3. **Small unmanned Aircraft Systems (sUAS):** UAS systems that utilize UAV’s weighing less than 55 pounds and are consistent with Federal Aviation Administration (FAA) regulations governing model aircraft. The sUAS utilized by the Punta Gorda Police Department has thermal imaging capabilities. sUAS are subject to the rules and regulations in this SOP and SOP 919.00 – Small Unmanned Aircraft Systems.

PROCEDURE

I. APPROVED LAW ENFORCEMENT APPLICATIONS

- A. Search and Rescue: Due to the fact the human body gives off heat in the form of infrared energy, thermal imaging devices can be used to locate lost persons. When used in this application, a second officer shall be present to establish cover for the thermal imaging operator.
- B. Locating Fugitives/Prowlers: Use of thermal imaging may permit search personnel to determine the location of an offender without necessitating a blind sweep of an area. Enough officers can be deployed to the location to safely effect the arrest of the criminal. When used in this application, a second officer shall be present to establish cover for the thermal imaging operator.

- C. Vehicle Pursuits: Thermal imaging equipment may be used to track a vehicle that fled from an officer and the officer 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. When used in this application, a second officer shall be present to establish cover for the thermal imaging operator.
- D. Structure Profiling: Current case law dictates that, when authorized by search warrant, thermal imagery may be used to detect the large amounts of heat produced by the extensive use of high intensity grow lamps that are utilized in indoor cannabis cultivation operations.
 - 1. The use of thermal imaging equipment will not be considered in the investigation of clandestine methamphetamine laboratories; however, thermal imaging equipment may be used to locate nearby chemical dumps or spills which may indicate the presence of these laboratories.
 - 2. Consult with your supervisor prior to using a thermal imaging device on any nonresidential structure for criminal investigative purposes.
- E. Disturbed Surface: Thermal imaging technology can be used to conduct non-destructive surveys of walls or floors of structures which 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 same principal applies to the detection of secret compartments in houses or the detection of materials buried in recently disturbed soil.
- F. Environmental Law Enforcement: It has been found that toxic waste, oil spills, and the residue of clandestine drug laboratories and other pollutants generate heat differentials which are detectable by thermal imaging. These materials can be detected from long distance, even at night.
- G. Perimeter Surveillance: Thermal imaging equipment can be utilized to establish a perimeter surveillance system at a much reduced cost for manpower.
- H. Officer Safety: Thermal imaging equipment may be used to locate suspects or other obstacles that could create a danger to police personnel.
- I. Hidden Compartments in Vehicles: Thermal imaging equipment may be used to conduct non-destructive surveys of vehicles or containers attached to a vehicle that may contain false or hidden compartments suspected of transporting illegal contraband.

II. IMAGE ANALYSIS CONSIDERATIONS

- A. Any time thermal imaging equipment is used in structure profiling, the use of a video-recording device is recommended. The recorded information will assist in further analysis and may prove useful in any subsequent courtroom testimony.

B. The use of thermal imaging equipment in surveillance situations should only be undertaken with an awareness of the following:

1. Solar radiation (sunlight) will affect a building's thermal profile.
 - a. Do not attempt thermal surveillance of a building during daylight hours or in the early evening.
 - b. 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.
 - c. Nearby highly reflective materials, such as a car or trailer near the target building may affect surveillance efforts.
2. Terrain Features
 - a. 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.
 - b. Since cool air sinks to low-lying areas, identical buildings at different elevations may exhibit different thermal images due to outdoor temperature inversion conditions.
3. Building Orientation
 - a. The thermal imaging of a suspect structure and other similar surfaces for reference purposes should be performed from the same direction as southward and westward facing walls absorb more solar heat.
 - b. 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.
4. Building Materials
 - a. Different building materials will emit heat at varying rates.
 - b. 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.
5. Weather Conditions
 - a. 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.

- b. High winds will significantly affect the cooling of building surfaces, both of radiated heat and internal emitted heat.

III. LEGAL CONSIDERATIONS

- A. Thermal imaging equipment can be used to survey open fields, non-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.
- B. Thermal imaging equipment shall not be used for surveillance of dwellings without prior approval from an executive staff member.

IV. AUTHORIZATION FOR USE

- A. Officers who have been trained in "Basic Thermal Imaging" are authorized to use thermal imaging equipment in the following circumstances:
 - 1. Search and rescue;
 - 2. Fire investigation;
 - 3. Fugitive location;
 - 4. Vehicle pursuits; and
 - 5. Traffic accident investigation.

V. REQUESTS FOR USE OF THERMAL IMAGING EQUIPMENT

- A. Within the City: A request for the use of the equipment may be made by any officer at the scene of an incident within the city. Upon the approval of the on-duty supervisor, the equipment and/or operator will be dispatched to the scene.
- B. Outside the City: Requests for the use of equipment, which originate outside the city, must be approved by the on-duty supervisor prior to Punta Gorda Police Department personnel being dispatched to the location. Approval will be based on:

1. The nature of the incident; and
 2. Availability of personnel and/or equipment.
- C. Other agencies may request to borrow the thermal imaging equipment. Approval to do so must be authorized by a Command Staff officer. The Criminal Investigation Section or Patrol Supervisor shall validate the equipment is in good working order prior to and upon return.

VI. MAINTENANCE AND DEPLOYMENT OF EQUIPMENT

- A. Thermal Imaging equipment is expensive electronic equipment and requires a greater than normal degree of care. All Police Department personnel are cautioned to take extra care in handling and transporting this equipment.
- B. The device shall be stored in the TASER storage located in the squad room. Authorization for the use of the device shall be granted by a lieutenant or higher authority.

APPROVED



PAMELA R. SMITH, CHIEF OF POLICE

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