

Warrantless Use of Infrared Searches
By Omar A. Abukurah

Acting on an informant s tip that there was a marijuana growing operation, Edmonds Police Department went to take a look at Alan Young s house. Upon arrival the officers noticed no special lights in the house and no odor of marijuana.¹ Upon further investigation, the detectives learned that Young s electricity consumption was abnormally high.² Employing the help of a DEA specialist in thermal imagery, the team carefully brought out the newest weapon in the war on drugs - forward looking infrared (FLIR). Before using the FLIR on Young s home, however, the officers directed the FLIR on Young s neighbors houses to adjust the gain and tone. No one knows what they saw. A married couple engaged in intimate acts? The Guys playing poker? A single mother with the oven on to keep her children warm?

Without a search warrant, the officers then turn the FLIR on Young s house.³ They found the basement was warmer than the second floor and that one chimney duct was warmer than the other.⁴ Based on the lack of information from their prior surveillance and the information from the warrantless FLIR search, the officers

¹ State v. Young, 867 P.2d 593, 595 (Wash. 1994).

² Id.

³ Id.

⁴ Id.

obtained a search warrant and found an indoor marijuana growing operation.⁵ The trial court admitted the evidence, but the Supreme Court of Washington excluded the evidence finding that the FLIR search violated Young s Fourth Amendment rights.⁶

Now, to the glass walls of St. Louis. July 25, 1991, Police are in a helicopter mounted with a thermal imager, hovering over the home of Joseph Pinson. The thermal imager shows a skylight in Pinson s home is radiating a high level of heat.⁷ They conclude that the escaping heat indicated the manufacturing of marijuana.⁸ Upon the FLIR evidence collected, the officers obtained a search warrant and found over one hundred marijuana plants in an indoor growing operation. The District court upheld the evidence and the United States Court of Appeals for the 8th Circuit affirmed.⁹

The Fourth Amendment prohibits unreasonable searches and seizures.¹⁰ Our forefathers insight into the abuses of a police state is being whittled away over time by courts willingness to allow law enforcement agencies to run free. Today, however, technology has propelled us into a future where a police officer

⁵ Id.

⁶ State v. Young, 867 P.2d 593.

⁷ U.S. v. Pinson, 24 F.3d 1056, 1057 (8th Cir. 1994).

⁸ Id.

⁹ Id.

¹⁰ United States Constitution, Amendment IV.

can hold an electronic device, very similar to a hand-held camcorder, and peer into the sanctuary of private residences and watch the activities of anybody.

This Comment focuses specifically on the use of FLIR, thermal imaging, radar imaging, and combinations thereof in the absence of a search warrant. Part A is a brief discussion of what thermal imaging actually does and how it works. Part B. discusses the history of the Fourth Amendment and the modern-law approach to determining whether a search has occurred. Part C. looks at and analyzes recent court decisions on the use of thermal imaging without a search warrant. Finally, Part D. concludes the use of thermal imaging is not only a blatant intrusion into the public s private affairs, but a search and should be used by law enforcement only upon the issuance of a search warrant.

Part A. What is Infrared Imaging and how does it work?

The use of infrared and thermal imagery was a child of the Department of Defense and the Military for use on missiles. These missiles track the heat signature of the target plane. Since then, there have been more and more applications for such technology. For instance, several Fire Departments have purchased the expensive¹¹ equipment for use in finding unconscious victims in smoke-filled houses. This application has saved many lives

considering, previously, firefighters could only crawl on the floor feeling through the smoke laden rooms. Other applications include locating fugitives, flight safety¹², vehicle pursuits, disturbed surface investigations¹³, perimeter surveillance, environmental law enforcement¹⁴, and uses in marine vessels.¹⁵

Thermal Imagers work by picking-up the thermal energy¹⁶ which is either radiated or absorbed¹⁷ by another object.¹⁸ The difference in energy¹⁹ is directed through a semicircular lens onto a series of mirrors, which, in turn, direct the infrared light onto a detector. The internal computer then translates the variance in infrared light into a video-like image which can be played on the screen similar to a black & white television and/or

¹¹ Starting at about \$30,000.00 for the low-end hand-held model.

¹² FLIR can help pilots see the characteristics of unfamiliar territories (high tension wires, obstacles, etc.) AIR BEAT, Jan/Feb. 1995.

¹³ As infrared can be used to help find sums of cash, contraband, drugs and other hidden items in structures, it can also be used to detect items, including bodies, in recently disturbed soil. AIR BEAT, Jan/Feb. 1995 (emphasis added).

¹⁴ Toxic waste spills, leaks, and air pollutants can often be covertly tracked from long distances, even at night... AIR BEAT, Jan/Feb. 1995.

¹⁵ Especially in open water search and rescue missions.

¹⁶ Thermal energy is part of the electromagnetic spectrum which is NOT NATURALLY VISIBLE TO THE HUMAN EYE.

¹⁷ For instance, thermal imagers can detect the heat given off by a human or animal or the heat absorbed by an object such as when we sit on a chair and the chair gets warm.

¹⁸ U.S. Drug Enforcement Agency, Thermal Detection Technology: An Assessment for Drug Law Enforcement (1993).

¹⁹ Accuracy of up to 0.1...C. Thermovision® 1000 Series: High-resolution FLIR Imaging Systems for Tracking and Surveillance (Sept. 1995) (Brochure from AGEMA Infrared Systems).

recorded with a video recorder. The images register on the screen as white for hotter objects then down a continuum of gray as the objects get cooler²⁰ (see below).

For a thermal imager to work properly, however, some initial steps must be taken to ensure accuracy. First the imager must warm-up. Second, the imaging should be done at night. Officers must wait a sufficient amount of time after the sunset for all objects exposed to sunlight or the sun s indirect heat to give-off the absorbed energy. Usually, scans are made just before sunrise to ensure the maximum amount of heat has radiated out.²¹

The final step in the preliminary procedures is to set the gain and tone . To do this, the imager is aimed at any non-target residence - for surveillance of drug manufacturing²² - to

²⁰ Id.

²¹ U.S. v. Field, 855 F.Supp. 1518, 1522 (W.D. Wis. 1994).

²² The manufacturing of marijuana is not the only drug production in which FLIR has been effective. Several agencies report that the production of methamphetamine (crystal , speed) radiates a heat signature which a trained agent can recognize. Other types of drug manufacturing have not radiated the distinguishable thermal differences. See e.g., AIR BEAT, Jan/Feb. 1995.

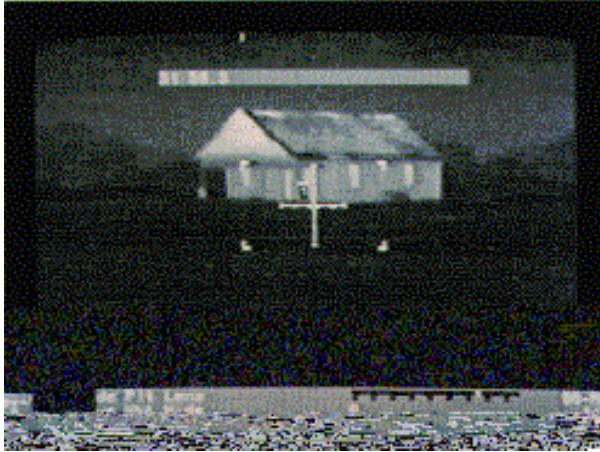


Figure 1.

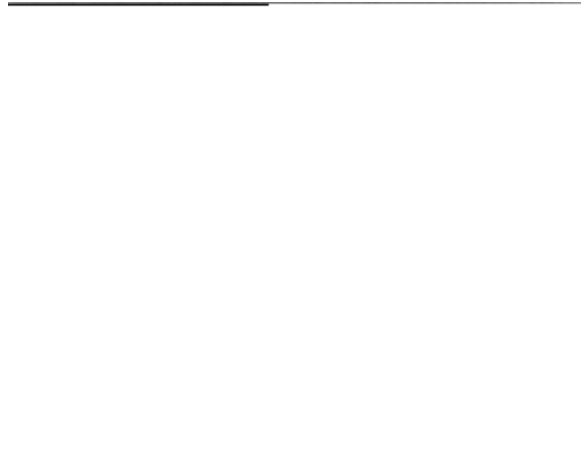


Figure 2.

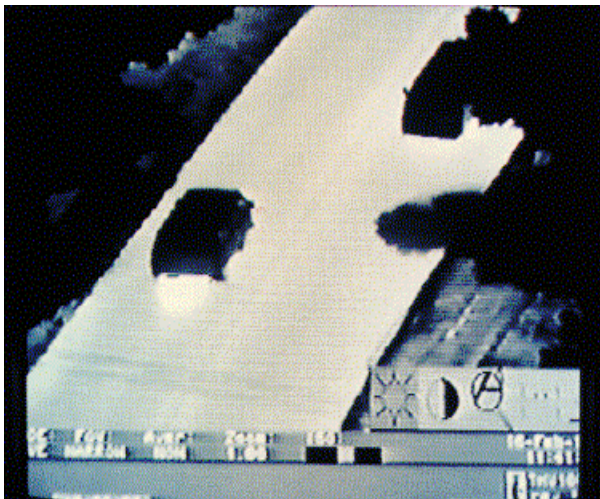


Figure 3.



Figure 4.

Fig. 1: Heat escaping under eaves of marijuana growing house.

Fig. 2: Surveillance using Active Gated TV. Notice the detail visible through the glass.²³

Fig. 3: Airborne pursuit of suspect vehicle.

Fig. 4: Officers being guided from the air in a search and rescue mission.

²³ Several courts have made findings that thermal imaging does not penetrate glass. Here it is clear that the technology can, indeed, penetrate glass. What is typically happening is the military is slowly disseminating technology to law enforcement agencies. Current technologies available to the military include PULSED FAST NEUTRON ACTIVATION SYSTEM which can be used specifically to see through walls (including steel). The most recent application was in Somalia to find where snipers were hiding in buildings.

set the controls to a normalized object so that a discernment of the heat can be made.²⁴

At the moment the thermal imager is directed at the neighbor s house and a discernment of the heat images radiating from within that house are made, is when the law enforcement officials violate the Fourth Amendment by conducting an illegal search without a warrant.

Part B: The History of the Fourth Amendment and the Modern-Law Approach to determining whether a search has occurred.

The drafting of the Fourth Amendment by the United States founders was an effort to avoid the abusive and dubious searches conducted by the crown through British General Warrants where law enforcement was authorized to search and seize a colonist s personal property²⁵. The Fourth Amendment guarantees:

The right of people to be secure, in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issues, but upon probable cause, supported by oath or affirmation and particularly describing the place to be searched and the person or things to be seized. ²⁶

The protections of the Fourth Amendment only extend to actions of the government found to be a search or seizure. The issues of what constitute a search remain open to interpretation.

²⁴ U.S. v. Field, 855 F.Supp. 1518, 1522 (W.D. Wis. 1994).

²⁵ Boyd v. United States, 116 U.S. 616, 625-27 (1886).

Therefore, the first question in the analysis is: Whether a search has occurred? The modern approach to answering this question is by the application of the Katz²⁷ standard. However, prior to Katz, the Supreme Court placed an emphasis on the physical intrusion or invasion into a constitutionally protected place. For example, in Olmstead²⁸, the Court found that the wiretapping of defendant s telephone did not constitute a search because there was no physical intrusion into a protected area. Justice Brandice writes in his dissent:

The progress of science in furnishing the government with means of espionage is not likely to stop with wire-tapping. Ways may some day be developed by which the government...will be enabled to expose to a jury the intimate occurrences of the home. ²⁹

After Olmstead, it was clear that the Supreme Court had created a standard which was not maintainable in light of the technological advances of the time. For instance, the Court held that placing a listening device on a wall adjacent to the suspects room to overhear the conversations was not a Fourth Amendment search because there was no physical trespass³⁰, while placing a spike-mike into the space within the wall and against a

²⁶ United States Constitution, Amendment IV.

²⁷ Katz v. United States, 389 U.S. 347 (1967).

²⁸ Olmstead v. United States, 277 U.S. 438 (1928).

²⁹ Id. at 474.

³⁰ Goldmand v. United States, 316 U.S. 505, 512 (1961).

ventilation duct was a physical intrusion and thus violated the defendant's Fourth Amendment rights.³¹

The modern approach was set forth in *Katz v. United States*.³² The defendant, Katz, was using a telephone booth with the door closed. Unbeknownst to him, government agents had attached a listening device on the outside of the booth. The court found that the surveillance was an unconstitutional search and reversed his conviction.³³ The Court also reversed its emphasis in physical intrusion standard and replaced it with the reasonable expectation of privacy³⁴ standard. Stewart's opinion for the majority stressed, [t]he Fourth Amendment protects people, not places.³⁵ Further, what [one] seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected.³⁶

It is Justice Harlan's concurrence, however, which articulates the modern two-step standard of whether a search has occurred - the reasonable expectation of privacy standard:

³¹ *Silverman v. United States*, 365 U.S. 505, 512 (1961).

³² 389 U.S. 347 (1967).

³³ *Id.* at 359.

³⁴ *Id.* at 351-53.

³⁵ *Id.* at 351.

³⁶ *Id.* at 351-52.

1. The individual must have exhibited an actual and subjective expectation of privacy, and 2. The expectation of privacy is one which society is willing to consider reasonable.

It is in the application of this standard where we see the decline of the Fourth Amendment's protections, especially in the area of high technology surveillance. The following cases illustrate this point.

The first major Supreme Court case after *Katz* directly addressing high technology surveillance was *United States v. Knotts*³⁷. There, the Court found that agents who placed a beeper³⁸ in a drum of chemicals used to manufacture illegal drugs was not a violation of the defendant's Fourth Amendment rights. Since it did not invade any legitimate expectation of privacy.³⁹ The agents had lost the vehicle on the streets, but with the aid of the beeper, a helicopter found the source of the radio signal - a cabin.⁴⁰ The Court reasoned that the same surveillance could have been done through mere visual surveillance in public places.⁴¹

³⁷ 460 U.S. 276 (1983).

³⁸ A radio transmitter...which emits periodic signals that can be picked up by a radio receiver. *Id.* at 277.

³⁹ *Id.* at 285.

⁴⁰ *Id.* at 276.

⁴¹ *Id.* at 282.

Sixteen months later in *United States v. Karo*⁴², the Court ruled that the monitoring of a beeper in a house was a search.⁴³ The Court distinguished the two cases by, first, affirming the use of the beeper on the public road, but once the beeper entered the house, the continued surveillance constituted a search.⁴⁴

For purposes of the Fourth Amendment, the result is the same where, without a search warrant, the government surreptitiously employs an electronic device to obtain information that it could not have obtained by observation from outside the curtilage of the house...The monitoring of an electronic device...does reveal a critical fact about the interior of the premises that the government is extremely interested in knowing and that it could not have otherwise obtained without a warrant.⁴⁵

In 1986, two cases began to show the path which the Supreme Court was going to take. Instead of simply eroding the Fourth Amendment, the Court decided to start using explosives. The first case is *California v. Ciraolo*⁴⁶. There, police had received an anonymous tip⁴⁷ that the defendant was growing marijuana. When the officers went to the location, they were unable to view the plants from a legal vantage point, since Ciraolo had erected a fence to protect his garden from prying eyes. The frustrated officers then

⁴² 468 U.S. 705.

⁴³ *Id.* at 715-16.

⁴⁴ *Id.*

⁴⁵ *Id.* at 715.

⁴⁶ 476 U.S. 207 (1986).

flew over his yard at 1000 feet⁴⁸ and observed marijuana plants growing. With this evidence, officers obtained a search warrant. The Court reasoned that anyone flying over his yard could have seen the plants and the vantage point was legal, therefore there was no search under the Fourth Amendment. Although Ciraolo had manifested a subjective expectation of privacy in erecting the fence (the first test of Katz), the court found that he had failed the second prong, since his expectation was not one society was willing to accept as reasonable.⁴⁹

The second case was Dow Chemical Co. v. United States⁵⁰. There, the Environmental Protection Agency (EPA) flew over the Dow Chemical plant and took aerial photographs of the facility using a commercial mapping camera.⁵¹ The Court found that a search had not been conducted even though the photographs showed a great deal more than the human eye could ever see.⁵² The Court primarily based its reasoning on the facts that the EPA had employed the use of an ordinary device⁵³ which used nothing more than a high

⁴⁷ Id. at 209.

⁴⁸ Id.

⁴⁹ Id. at 214.

⁵⁰ 476 U.S. 277 (1986).

⁵¹ The camera employed had a zoom lens which could differentiate objects of up to one half inch clarity. Id. at 243 (quoting from Dow Chemical Co. v. United States, 536 F. Supp. 1355, 1367 (E.D. Mich. 1982)).

⁵² Id.

⁵³ Id. at 238.

power lens.⁵⁴ The Court, however, made it clear that Fourth Amendment concerns would be raised had highly sophisticated technology been used.⁵⁵

Part C: Analysis of Recent Decisions on Thermal Imaging

The United States Supreme Court has yet to hear and decide a case addressing the Constitutionality of the use of thermal imaging. It seems that predicting the admissibility of thermal imaging evidence is like predicting when an earthquake will occur. There is a rift between cases on whether the use of thermal imagers without a warrant constitute a Fourth Amendment Search.

Several federal appellate courts have ruled specifically on the use of thermal imaging on a suspects home. Many courts which have allowed the use of pre-warrant thermal imaging have cited to United States v. Penny-Feeney.⁵⁶ There, the court held that officers who flew over defendant s home using a thermal imager⁵⁷ to detect heat emissions did not violate defendant s Fourth Amendment rights since society was not willing to recognize an expectation of privacy in the escaping heat from a house as reasonable.⁵⁸ The

⁵⁴ Id.

⁵⁵ Id.

⁵⁶ 773 F. Supp. 220 (D. Haw. 1991).

⁵⁷ Thermal Imagers can also be mounted on the underside of helicopters and aircraft. In fact, there are many applications. Border patrol units have thermal imagers with a telescopic mount on the top of the trucks.

⁵⁸ 733 F. Supp. 220, 226-228.

decision was affirmed by the United States Court of Appeals for the Ninth Circuit.⁵⁹ The court found that when a person ceases to be able to retain the heat escaping from their house, they no longer enjoy a reasonable expectation of privacy in the heat and analogized it as waste heat.⁶⁰

Two other decisions which have also been followed by other courts are *United States v. Ford*⁶¹ and *United States v. Pinson*⁶².

In *United States v. Ford*⁶³ law enforcement officials, acting on a tip that Ford was growing marijuana, conducted a thermal scan of his mobile-home.⁶⁴ The scan showed high amounts of heat escaping from the floor and walls.⁶⁵ Using the evidence obtained by the thermal imager, agents obtained a search warrant and found over 400 marijuana plants.⁶⁶ The court, properly, stated the standard: the issue depends on the personal and societal values protected by the Fourth Amendment.⁶⁷ This inquiry must focus on whether

⁵⁹ *United States v. Penny-Feeney*, 984 F.2d 1053 (9th Cir. 1993).

⁶⁰ 733 F. Supp. 220, 226.

⁶¹ 34 F.3d 992.

⁶² 24 F.3d 1056.

⁶³ 34 F.3d 992.

⁶⁴ *Id.* at 993.

⁶⁵ This, the agents claimed, was indicative of the use of high power lighting necessary to grow marijuana indoors. *Id.*

⁶⁶ *Id.*

⁶⁷ *Id.* at 996 (quoting from *Oliver v. United States*, 466 U.S. 170, 182-83 (1984)).

society is willing to accept the use of a technology without a check by the judiciary, not what was found after the use. The court in *Ford* seems to have been influenced by what was found in *Ford*'s mobile home, but expressed that the decision was based on three analogies.

First is the intimacy of detail. The court erroneously found that the thermal imager cannot reveal the level of detail that would be offensive to the court. The thermal imager at issue here appears to be of such low resolution as to render it incapable of revealing the intimacy of detail and activity protected by the Fourth Amendment.⁶⁸ Further, the thermal imager is neither sensitive nor personal, nor does it reveal the specific activities within the home.⁶⁹

The court further analogized the use of the thermal imager to the use of the camera in *Dow Chemical*. However, the court failed to realize that, unlike a camera, a thermal imager is highly sophisticated surveillance equipment not generally available to the public.⁷⁰ While a camera can only photograph the light reflected from an object⁷¹, a thermal imager reveals information about the inside of the object being scanned.

⁶⁸ *Id.* at 996.

⁶⁹ *Id.* at 997.

⁷⁰ *State v. Young*, 867 P.2d 593, 595 (Wash. 1994).

The court also failed to realize the lasting impact the decision will have with the development of even more sophisticated technology. By failing to place a check on law enforcement's use of thermal imagery, the court has given a license for free use of such surveillance.

The second analogy the court made was that the heat radiating from the house was waste heat which was similar to garbage left out at the curb in *California v. Greenwood*.⁷² However, the court in *Greenwood* based its decision on three facts. First that *Greenwood* physically took the trash out to the curb, intending to abandon it. Second, he left it to be collected by an unknown party - the trash collector. Third, while the trash was on the curb waiting to be picked-up anyone could have gone through the trash. While in *Ford*, the defendant did vent the excess heat from the floor of the mobile home, it is a long way from taking the trash out to the curb. Further, regardless of whether *Ford* had vented the heat, the thermal imager would have detected the heat radiating from the mobile home, itself.⁷³

Second, the heat radiating from *Ford*'s mobile home was not available to the public since, first, only well funded law

⁷¹ A camera works by receiving the light reflected from the object being photographed.

⁷² 486 U.S. 35 (1988).

⁷³ Even if *Ford* had not vented the heat, the law enforcement agents would have detected the heat anyway.

enforcement agencies have the finances to thermal imagery while the public does not. Second, Ford's mobile home was on private property in the middle of the forest, far from the road.⁷⁴

Third, the court likened the heat in Ford to the smoke plumes in *Air Pollution Variance Board v. Western Alfalfa Corp.*⁷⁵ There the court stressed that the only observation made was what anyone in the city could see from a vantage point where no one was excluded.⁷⁶ In Ford, however, the public was not allowed to be on Ford's private land and could not have seen the heat escaping, even if they were there.⁷⁷

The third and final analogy the court drew regarding the heat was to smells emanating from luggage in *United States v. Place*.⁷⁸ There, the use of a trained dog to sniff luggage was held not to be a search. The court emphasized the nonintrusiveness and the location of the luggage - a public area.⁷⁹ We are aware of no other investigative procedure that is so limited both in the

⁷⁴ 34 F.3d at 993. Note that law enforcement agents actually entered onto Ford's private property to gain the vantage point necessary for surveillance. A more detailed analysis of the "open fields" doctrine is beyond the scope of this paper. For further information see: *Rakas v. Illinois*, 439 U.S. 128 (1978), *Oliver v. United States*, 466 U.S. 170 (1984), *Hester v. United States*, 265 U.S. 57 (1924), *Jones v. United States*, 362 U.S. 257 (1960), *Payton v. New York*, 445 U.S. 573 (1980), *United States v. Dunn*, 480 U.S. 294 (1987).

⁷⁵ 416 U.S. 861 (1974).

⁷⁶ *Id.* at 865.

⁷⁷ See *supra* note 16.

⁷⁸ 462 U.S. 696 (1983).

manner in which the information is obtained and in the content of the information revealed[.]⁸⁰ It becomes evident that the court was not encouraging the free reign of technology, but rather was specifically limiting the holding to canine sniffs.

Another distinction may be drawn, however. While a canine sniff will only uncover contraband⁸¹, a thermal image scan reveals much more:

The device can detect a human through an open window when the person is leaning against a curtain, and pressing the curtain between the window screen and his or her body. The device also can detect the warmth generated by a person leaning against a relatively thin barrier such as a plywood door⁸²

The second case court have regularly relied on is United States v. Pinson.⁸³ There Drug Enforcement Agents (DEA) received information that Pinson had purchased hydroponic⁸⁴ equipment.⁸⁵ The

⁷⁹ Id. at 707.

⁸⁰ Id.

⁸¹ The use of dogs in detecting contraband has been very successful. The dogs, however, only can sniff-out what they are trained to. For instance, a canine with a narcotics unit will, typically, be able to sniff out different types of narcotics (marijuana, methamphetamine, cocaine, etc.), while a bomb squad dog will be able to sniff-out explosive material (usually nitrogen based). Therefore the use of canines in law enforcement is quite specific.

⁸² State v. Young, 867 P.2d 593, 595 (Wash. 1994). Please note: the final decision came in 1994. Please see figure 2 (supra note 23).

⁸³ 24 F.3d 1056 (8th Cir.), cert. denied, 115 S. Ct. 664 (1994).

⁸⁴ Hydroponic plant growth is a method in which plants are grown in inert material using a fertilizer solution instead of soil. The advantage is the grower can give the plants the optimal level of nutrients for the period of growth the plant is in. For instance, during vegetative growth a plant uses more nitrogen than during flowering. The grower can manipulate the concentration of various salts to gain the optimal growth for the specific plant being grown.

DEA also found that Pinson s electrical usage was abnormally high, a cue card to the DEA that high wattage electrical lighting used for indoor plant growing was being employed.⁸⁶ Based on this information, the DEA performed a thermal scan using a FLIR device mounted on a helicopter.⁸⁷ The thermal scan indicated inordinate amounts of heat escaping from a window, the roof, and a skylight.⁸⁸ Based on this information, agents obtained a search warrant and found an indoor marijuana cultivation operation, cash, processed marijuana, and books and magazines on how to grow marijuana.⁸⁹

The court found that there had not been a search, reasoning that there had been no disclosure of intimate details.⁹⁰ The court, as in *Ford*, analogized the FLIR scan to odors emanating from luggage and waste likened to the garbage in *Greenwood* and found that Pinson expectation of privacy was not one society was willing to accept as reasonable⁹¹ and therefore there had been no Fourth Amendment search.

Although the majority of courts have held that thermal imaging is not a search under the Fourth Amendment, there are some

⁸⁵ 24 F.3d 1056, 1057 (8th Cir.), cert. denied, 115 S. Ct. 664 (1994).

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ *Id.*

⁹⁰ *Id.* at 1059.

courts that have not allowed the admission of the thermal imaging scans claiming that a search had occurred and all the evidence admitted at trial which was a result of the thermal scan was fruit of the poisonous tree.⁹²

In *United States v. Fields*⁹³ law enforcement officers received a tip that the defendant's house was emanating a strong smell of marijuana.⁹⁴ The officers employed a thermal imagery specialist to conduct a thermal scan of the residence and found a hot spot within the house.⁹⁵ A search warrant was obtained and the resulting search found marijuana under stacks of hay in a shed - not the residence.⁹⁶

The court refused to believe the government's argument that the thermal scanning of a residence is passive. The government can actually discern, or claim to discern some very detailed information about what is happening inside of a home being scanned.⁹⁷ The court further stated that the use of a thermal imager is a search that does not fit into any exception to the

⁹¹ *Id.*

⁹² See *Wong Sun v. United States*, 371 U.S. 471 (1963).

⁹³ 855 F. Supp. 1518 ().

⁹⁴ *Id.* at 1524.

⁹⁵ *Id.* at 1521-22.

⁹⁶ *Id.* at 1525.

⁹⁷ *Id.* at 1531.

warrant requirement[,]⁹⁸ therefore finding the government's analogies to garbage left at the curb and a canine sniff not applicable.

Similarly, in *United States v. Cusumano*⁹⁹, law enforcement officials learned that defendants had rewired their basement, set up an electric generator which ran continuously and had installed high wattage lighting to grow vegetables in their basement.¹⁰⁰ The officers conducted a thermal scan on the house and the garage and found several hot spots including one against the wall of the garage, along the roof, and near the front door of the house. Based on this information, officers obtained a search warrant and found a sophisticated marijuana growing operation.

The court decided that a search had occurred and stated fellow circuits have misframed the relevant Fourth Amendment inquiry.¹⁰¹ The court explained that defendants have a reasonable expectation of privacy in their heat signatures.¹⁰² The other circuits had been focusing on the inquiry of whether the defendants had an expectation of privacy in the waste heat emanating from the houses. The court concluded that defendants do

⁹⁸ *Id.* at 1532-33.

⁹⁹ 67 F.3d 1497 (10th Cir. 1995)

¹⁰⁰ *Id.* at 1499

¹⁰¹ *Id.*

¹⁰² *Id.*

have a reasonable expectation of privacy in the activities they carry out within their house, therefore the thermal scanning of a residence without a search warrant constituted a violation of defendant s Fourth Amendment rights.¹⁰³

Even the Washington State Supreme Court has held that the use of a thermal imager constitutes a search under the Fourth Amendment. In *State v. Young*¹⁰⁴ Law enforcement agents received a tip that Young was growing marijuana indoors.¹⁰⁵ Officers went out to his house and could not see any bright lights nor smell marijuana but did find that his electricity consumption was high and therefore indicative of high wattage lighting to grow plants indoors.¹⁰⁶ The officers then had a thermal scan done of Young s house which revealed that the downstairs was warmer than the upstairs.¹⁰⁷ The officers used this information to obtain a search warrant and found marijuana.¹⁰⁸

The Washington Supreme Court based its analysis on two parts. First on article I, section 7 of the Washington State

¹⁰³ Id.

¹⁰⁴ 867 P.2d 593 (Wash. 1994).

¹⁰⁵ Id. at 595.

¹⁰⁶ Id.

¹⁰⁷ Id.

¹⁰⁸ Id.

Constitution¹⁰⁹, and second on the Supreme Court's Katz test and its progeny. According to article I, section 7, once surveillance obtains information which is beyond what is publicly exposed an unreasonable intrusion into an area where there is a reasonable expectation of privacy has occurred.¹¹⁰ The court found that the police could not have been privy to such information without the aid of the thermal imager unless they had entered the home.¹¹¹ The Court then reaffirmed the public's right to have a reasonable expectation of privacy in their homes and distinguished *Karro* and *Knotts*¹¹² stating that the Supreme Court has differentiated between the use of sensory enhancement devices on homes from their use on other objects.¹¹³

The Court rejected the government's argument that the heat escaping was analogous to trash left at the curb since one may expect a stranger to rummage through the garbage while not expecting a stranger to use high-tech equipment to view the heat signatures given from themselves and their home.¹¹⁴ Finally, the Court dismissed the canine sniff analogy by quoting the United

¹⁰⁹ Wash. Const. art I., / 7.

¹¹⁰ 867 P.2d at 598.

¹¹¹ *Id.*

¹¹² See discussion *supra*, Footnotes 37-45.

¹¹³ 867 P.2d at 601.

¹¹⁴ *Id.* at 602-603.

States Supreme Court's language¹¹⁵ that a dog sniff is sui generis.^{116 117}

Part D: Conclusion

In this day and age, the opportunities that technology has provided have opened doors that once were thought sealed. The use of infrared has many applications where it has shown itself to be a most advanced tool. Even law enforcement applications have aided law enforcement in securing the borders, pursuing suspects and criminals, and in eradication of drug labs. It has become apparent that technology will continue to advance to areas where we, presently, cannot imagine. However, the advancement of such technology is beginning to rub against the grain of the privacy interests the country's founders worked so hard to ensure. The framers of the United States Constitution and the bill of rights wanted to ensure the privacy rights of individuals and limit the intrusiveness of police actions.

Constantly eroding the protections of the Fourth Amendment is the Katz test which is easily twisted by a result-minded court. Thermal imagery requires a re-thinking of the Katz test and the Fourth Amendment in the current technological world. The Katz test

¹¹⁵ Id. (quoting from *United States v. Place* 462 U.S. 696, 707 (1983))

¹¹⁶ the only one of its own kind; peculiar BLACK'S LAW DICTIONARY 1434 (6th ed. 1991)

was designed to redirect the formalistic and rigid approach in defining a search or seizure. Instead, in the area of thermal imaging, the Katz standard has given courts carte blanche to simply pass off the importance of privacy of an individual in their home. Thermal imagers are clearly a search, even the most simple models, since they reveal details of the home which are not readily visible. To continue the use of the Katz test, which cannot be applied consistently, is to make a mockery of the protections of the Fourth Amendment.

While some say that the Fourth Amendment, Katz, and Wong Sun are all meant to protect criminals, we must never forget that criminals are part of the public as are law abiding citizens. The Fourth Amendment affords protection to all people within the territories of the United States. Would these opponents of the Fourth Amendment encourage the police to calibrate the thermal imager on their home?

Considering the intrusiveness into an area highly protected by the Constitution and the Supreme Court, the warrantless use of thermal imaging on private homes is another blow to the Fourth Amendment and to the right to privacy of all residents of the United States.

¹¹⁷ Note also, that dog sniffs have been found to be a search. See CASE