

**[J-47-1999]**  
**IN THE SUPREME COURT OF PENNSYLVANIA**  
**WESTERN DISTRICT**

COMMONWEALTH OF PENNSYLVANIA,	:	No. 40 W.D. Appeal Docket 1998
	:	
Appellant	:	Appeal from the Order of Superior Court
	:	at No. 85PGH97 entered 12/24/97
	:	vacating the Judgment of Sentence and
v.	:	Motion to Suppress is reversed from the
	:	Judgment of the Court of Common Pleas
	:	of Erie County, Criminal Division at No.
GREGORY GINDLESPIERGER,	:	1515 of 1994 entered 2/14/96.
	:	
Appellee	:	706 A.2d 1216 (Pa. Super. 1997)
	:	
	:	ARGUED: March 9, 1999

**OPINION**

**MR. JUSTICE ZAPPALA**

**DECIDED: DECEMBER 22, 1999**

This appeal presents the first impression question of whether law enforcement agents' use of an infrared thermal imaging device to scan a private residence without obtaining a search warrant constitutes an unlawful search in violation of the Fourth Amendment to the United States Constitution. The Superior Court held that such use does constitute an unlawful search for purposes of the Fourth Amendment. We now affirm.

On April 9, 1994, police officers entered the basement area of Appellee Gregory Gindlesperger's residence pursuant to a search warrant and seized approximately 21 marijuana plants. Probable cause for the search was based, in part, on information provided by a confidential informant (CI) to Officer Gerald Pfadt, a five year veteran of the Erie County Mobile Drug Task Force. The CI told Officer Pfadt that he/she observed marijuana plants growing at Appellee's residence in February of 1994. Officer Pfadt asked the CI to confirm that marijuana was growing in Appellee's basement during the week of

February 13, 1994 and the CI did so. In March of 1994, the CI told Officer Pfadt that Appellee was now using artificial lights to facilitate his marijuana growth operation.

Further verification of this tip occurred when Captain Gregory Davis of the Pennsylvania Army National Guard Drug Force, along with local law enforcement, “viewed” Respondent’s residence using a thermal imaging device known as a “WASP.” Search Warrant and Affidavit of Probable Cause, R. 546a, Paragraph 5. This device is designed to distinguish appreciable and noticeable amounts of extraneous heat. Id. Captain Davis detected “an unexplainable source of heat coming from the basement area that was not consistent with the location of the furnace or other know heat sources.” Id.<sup>1</sup>

A search warrant was issued for Respondent’s home based, in part, on the fact that “[t]his heat source would be consistent with the heat source coming from the artificial lighting used in the growing of marijuana.” Id. Officer Pfadt further averred the following in the affidavit of probable cause in support of the search warrant:

[I]ndividuals who grow marijuana in an indoor setting do so in a continuing operation and have plants in various stages of growth so as to be able to have a continuous supply of marijuana to be harvested.

\* \* \*

[T]he CI has provided information to this officer in the past that has been proven reliable and will result in the arrests of individuals for violations of the drug laws.

Id.

Appellee’s residence was then searched and police found artificial lighting equipment as well as marijuana plants in the basement. Appellee was arrested and charged with various violations of the Controlled Substance, Drug, Device and Cosmetic Act. Thereafter, Appellee filed a pre-trial motion to suppress the evidence seized during

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<sup>1</sup> Captain Davis also checked five residences of similar structure and design on either side of Appellee’s home and detected no such heat pattern.

the search of his residence and the trial court denied the motion. A bench trial was conducted on May 30, 1995. Appellee was found guilty of all the charges against him.

On appeal, the Superior Court reversed the trial court's order denying Appellee's suppression motion, holding that the warrantless use of the WASP device violated the Fourth Amendment and that law enforcement's use of the results of the scanning device to obtain a search warrant "was invalid and not a proper basis for issuance of the warrant."

Commonwealth v. Gindlesperger, 706 A.2d 1216, 1218 (Pa. Super 1997).<sup>2</sup>

The Commonwealth maintains that the Superior Court erred in concluding that the warrantless use of the WASP device to scan Appellee's residence constituted a search pursuant to the Fourth Amendment.<sup>3</sup>

Initially, we note that the Fourth Amendment protects "the right of the people to be secure in their persons, houses, papers, and effects against unreasonable searches and seizures." U.S. Const. amend. IV. This fundamental right is preserved by a requirement

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<sup>2</sup> The court went on to conclude that the balance of the information provided to the magistrate in the Affidavit of Probable Cause, namely Officer Pfadt's averments regarding the CI and the information which the CI supplied to him, was insufficient to sustain the issuance of the warrant. The propriety of this determination was not raised on appeal and is not before us.

<sup>3</sup> We note that Appellee also asserted a state constitutional challenge to law enforcement's warrantless use of the WASP device to scan his residence before the Superior Court. However, given that the court concluded such use violated the Fourth Amendment, it did not address Appellee's Article 1, Section 8 claim. Gindlesperger, 706 A.2d at 1224. Appellee, likewise, preserves his state constitutional claim in his brief to this Court. However, given that the appeal before us was taken by the Commonwealth regarding the Superior Court's disposition, and given that we agree with the Superior Court, we too need not address Appellee's state constitutional challenge since this Court has held that embodied in Article 1, Section 8 is a strong notion of privacy which is greater than that of the Fourth Amendment. See Commonwealth v. Edmunds, 586 A.2d 887, 897-898 ("Article 1, Section 8 may be employed to guard individual privacy rights against unreasonable searches and seizures more zealously than the federal government..."). Thus, given our conclusion that the within conduct violates the Fourth Amendment, it is clear that this conduct likewise violates Article 1, Section 8.

that searches be conducted pursuant to a warrant issued by an independent judicial officer based upon probable cause. California v. Carney, 471 U.S. 386 (1985). The test for establishing what constitutes a search for purposes of the Fourth Amendment was established by the Court in Katz v. United States, 389 U.S. 347, 361 (1967) (Harlan, J., concurring), requiring that one asserting that an unlawful search has occurred demonstrate, first, an actual, subjective expectation of privacy in that which is searched and second, that this expectation is one our society recognizes to be reasonable. Here, the Commonwealth maintains that the facts of the instant case fail to meet the test articulated by the United States Supreme Court in Katz and, thus, fail to establish that an improper search, requiring a warrant based upon probable cause, occurred. We disagree.

The defendant in Katz was convicted of violating a federal statute prohibiting the interstate transmission of wagering information by telephone. To obtain evidence against Katz, FBI agents attached an electronic listening and recording device to the outside of the public telephone booth from which Katz placed his calls. Katz objected to the use of this evidence at trial contending that it had been illegally obtained in violation of the Fourth Amendment. The Court agreed, holding the government's warrantless use of the electronic listening and recording device to be unconstitutional.

The Court rejected the government's assertion that because the surveillance technique it employed did not involve a physical penetration of the phone booth, the Fourth Amendment was not implicated. The Court concluded that such activity by government agents

violated the privacy upon which [the defendant] justifiably relied while using the telephone booth and thus constituted a 'search and seizure' within the meaning of the Fourth Amendment. The fact that the electronic device employed to achieve that end did not happen to penetrate the wall of the booth can have no constitutional significance.

Id. at 353.<sup>4</sup>

While the United States Supreme Court has not yet ruled on the validity of law enforcement's warrantless use of a thermal imaging device to scan a private residence as occurred in this case, a number of federal circuit courts, district courts and state courts have done so. There is a split among the authorities that have examined the issue. The Seventh, Eighth, Ninth and Eleventh Circuits have upheld the use of thermal imaging devices by law enforcement officials to scan private residences.<sup>5</sup> United States v. Myers, 46 F.3d 668 (7<sup>th</sup> Cir. 1995); United States v. Pinson, 24 F.3d 1056 (8<sup>th</sup> Cir. 1994); United States v. Kyllo, 1999 U.S. App. Lexis 21562 (9<sup>th</sup> Cir. filed September 9, 1999). United States v. Ford, 34 F.3d 992 (11<sup>th</sup> Cir. 1994). One district court in the Ninth Circuit has also upheld the warrantless use of these devices. Peeny-Feeney, 773 F.Supp. 220 (D. Hawaii 1991), *affirmed on other grounds*, 984 F.3d 1053 (9<sup>th</sup> Cir. 1993).

A panel of the Tenth Circuit in United States v. Cusumano, 67 F.3d 1497 (10<sup>th</sup> Cir. 1995), found that the warrantless use of a thermal imager violated the Fourth Amendment. However, that decision was vacated by an en banc court and the case was decided without reaching the constitutional issue. One district court in the Seventh Circuit found such warrantless use to be unconstitutional as did the State Supreme Courts of Montana and Washington and the Court of Appeal of California. United States v. Field, 855 F.Supp. 1518 (W.D. Wisc. 1994); State v. Siegal, 934 P.2d 176 (Mont. 1997); State v. Young, 867 P.2d 593 (Wash. 1994); People v. Deutsch, 52 Cal. Rptr. 2d 366 (Cal. App. 1<sup>st</sup> Dist. 1996).

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<sup>4</sup> As noted, Justice Harlan, in his concurring opinion, formulated the above stated test for determining whether a particular search violates the Fourth Amendment. His two prong formulation was formally adopted by the Court in Smith v. Maryland, 442 U.S. 735 (1979).

<sup>5</sup> The Fifth Circuit has permitted the use of such a device in an open field. See United States v. Ishmael, 48 F.3d 850 (5<sup>th</sup> Cir. 1995).

The Commonwealth relies on those cases that have upheld the use of thermal imaging devices based upon the conclusion that one does not have a subjective expectation of privacy in the “heat waste” that emanates from one’s residence. In so concluding, these courts have essentially analogized this so called “heat waste” to discarded trash and/or the odor that can be detected by drug sniffing dogs. The Supreme Court has upheld the warrantless search of discarded trash in California v. Greenwood, 486 U.S. 35 (1988), and the warrantless use of drug sniffing dogs in United States v. Place, 462 U.S. 696 (1983). See Ford, 34 F.3d at 997 (“[t]he heat that Ford intentionally vented from his mobile home was a waste byproduct of his marijuana cultivation and is analogous to the inculpatory items that the respondents in Greenwood discarded in their trash....”); Pinson, 24 F.3d at 1058 (“[j]ust as odor escapes a compartment or building and is detected by the sense-enhancing instrument of a canine sniff, so also does heat escape a home and is detected by the sense-enhancing infrared camera”).

In upholding the use of such devices, courts adopting the heat waste theory have relied upon the fact that the thermal imager is a passive device, employed from beyond the curtilage, which emits no rays or beams and which does not intrude in any fashion upon the interior of the observed property. Courts have also found significant the fact that the resolution of such a device is limited and, generally, detects only hot spots on the exterior surfaces of a building. The Eleventh Circuit observed that “the thermal imagery 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.” Ford, 34 F.3d at 996. The Pinson court observed: “The detection of the heat waste was not an intrusion into the home; no intimate details of the home were observed, and there was no intrusion upon the privacy of the individuals within.” Pinson, 24 F.3d at 1059. Likewise, the Ninth Circuit in Kyllo stated: “The scan merely indicated amorphous ‘hot spots’ on the roof and exterior

wall and not the detailed images of private activity that Kyllo suggests the technology could expose.” Kyllo, 1999 U.S. App. Lexis 21562 at 15.

Courts that have rejected the heat waste theory and found the use of thermal imaging devices to be constitutionally repugnant have done so based upon the conclusion that these devices do, in fact, reveal intimate details regarding activities occurring within the sanctity of the home, the place deserving the utmost protection pursuant to the Fourth Amendment. See Payton v. New York, 445 U.S. 573 (1980) (searches and seizures in public places are treated differently than searches and seizures occurring in the home); Silverman v. United States, 365 U.S. 505, 511 (1961) (“the right of a man to retreat into his own home and there be free from unreasonable governmental intrusion stands at the ‘very core’ of the Fourth Amendment”).

Specifically, in Field, the district court found unpersuasive the government’s argument that thermal imaging devices are merely passive and incapable of penetrating walls. The court stated:

Whether a device is passive is irrelevant; what is relevant is what the device records. As for not seeing through walls, the imager records the heat escaping from the walls that is emitted by an object on the other side of the wall. To the extent the device can pick up such radiation and record it, it can “see through” walls. In this case, for instance, the imager recorded the thermal energy emitted by a dehumidifier inside a closet within defendant’s residence. The imager did not reveal that the heat emitting source was a dehumidifier, but it did reveal facts about activities within the house: the fact of the heat emission and its general location.

Field, 855 F.Supp. at 1519. Likewise, the Tenth Circuit in Cusumano expressed the same concerns regarding the thermal imager’s use and pointed out that the proper inquiry should focus not on whether one has a subjective expectation of privacy in the heat escaping from

their home, but rather, on whether one has exhibited a subjective expectation of privacy in the activities occurring within the home.<sup>6</sup> The court stated:

To focus upon the “waste heat” radiating from a structure is to ignore both the purpose of the device and the manner in which it operates. The imager measures not “waste heat” but rather heat differentials; it records heat gradients across the exterior surface of a building. The laws of thermodynamics inform us that the amount of heat radiated from a given section of the exterior wall is directly related to the amount of heat generated by heat sources in proximity to the interior of that wall. Activities that generate a significant amount of heat therefore produce a heat “signature” that the imager can detect. Under optimal conditions--viewing through an open window into a darkened room, for example--the imager (or one much like it) might well be able to resolve these heat signatures into somewhat indistinct images. See, e.g., Young, 867 P.2d at 595 (noting that an imager can discern a human form through a curtained window under certain circumstances). More typically, the machine identifies only hot spots on a wall (as was true in this case). In either instance, it is the existence of these distinct interior sources that the device indirectly recognizes--with greater or lesser imprecision varying with the insulating attributes of the exterior walls--and records. While the heat lost by a building is data of some limited value, the true worth of the device--the very reason that the government turned the imager on the home of the Defendants--is predicated upon the translation of these thermal records into intelligible (albeit speculative) information about the activities that generate the observed heat. The utility of the machine depends therefore not on the inevitable and ubiquitous phenomenon of heat loss but on the presence of distinguishable heat signatures *inside the structure*. We see no reason to blind ourselves to the physical reality of this relationship by severing our analysis of the heat differentials emanating through the walls of a structure from an informed consideration of the heat sources within that structure.

Cusumano, 67 F.3d at 1501 (footnotes omitted) (emphasis added).

The court concluded that the foregoing analysis flowed naturally from the Supreme Court’s analysis in Katz noting that when

Reduced to its operational fundamentals, [the bug employed by law enforcement] did not monitor the interior of the phone booth at all; rather, it

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<sup>6</sup> While we recognize that the court’s decision in Cusumano was eventually vacated and the matter was decided on non-constitutional grounds - the court found that there was sufficient, independent information in the affidavit of probable cause to support the issuance of a warrant - the court’s analysis is, nevertheless, useful to our disposition since the court thoroughly analyzed the issue that is properly before us and we find the analysis employed by the court to be persuasive.



measured the molecular vibrations of the glass that encompassed that interior. Alternatively, it might fairly be said that the bug passively recorded the propagation of waste vibrational energy into the public sphere. Drawing upon the logic embraced by our fellow circuits, one could reason that the translation of the vibrational record into an account of that which transpired within the phone booth was simply a useful interpretation of abandoned energy--an analysis which would, we note, approve the search condemned by Katz. The Supreme Court in Katz did not dwell upon these physical minutiae, but, rather, recognized that the Fourth Amendment broadly protects from government intrusion that which a person reasonably seeks to keep private.

Id.

As noted earlier, the Court in Katz specifically rejected the government's argument that because the surveillance technique utilized by law enforcement did not involve a physical penetration of the structure at issue, the Fourth Amendment was not implicated noting that "the reach of [the] Amendment cannot turn upon the presence or absence of a physical intrusion into any given enclosure." Katz, 389 U.S. at 353.

As did the Cusumano court, we too hold that the proper focus of our inquiry should be on whether Appellee was able to demonstrate a legitimate expectation of privacy in the heat-generating activities occurring within his home.<sup>7</sup> In so concluding, we reject the argument that the government's use of the thermal imager to scan Appellee's residence was no different, for purposes of Fourth Amendment analysis, than cases where law enforcement have gone through discarded trash or used trained drug dogs to detect contraband.

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<sup>7</sup> By focusing on one's expectation of privacy in the "heat waste" that emanates from one's home, rather than on the activities occurring within the home, it would have to be concluded that the use of a more sophisticated device capable of tracking the movements of persons within a structure and resolving the information gained from such heat waste into distinct images would be constitutionally proper since the focus would be entirely upon the expectation of privacy in the heat radiating from the home rather than on the activities occurring within the home. This result demonstrates the danger of adopting such an analysis.

In California v. Greenwood, the Supreme Court upheld the warrantless search and seizure of discarded garbage left for collection outside the curtilage of Respondent Greenwood's home. Specifically, the Court concluded that Greenwood failed to demonstrate a subjective expectation of privacy in his discarded trash which society is prepared to accept as reasonable. In reaching this conclusion, the Court focused on the voluntary nature of Greenwood's relinquishment of his trash into the hands of third parties. The Court found further justification for this conclusion by noting the frequency with which people or animals rummage through curbside garbage bags. The Court noted:

Here, we conclude that respondents exposed their garbage to the public sufficiently to defeat their claim to Fourth Amendment protection. It is common knowledge that plastic garbage bags left on or at the side of a public street are readily accessible to animals, children, scavengers, snoops and other member of the public. Moreover, respondents placed their refuse at the curb for the express purpose of conveying it to a third party, the trash collector, who might himself have sorted through respondents' trash or permitted others, such as the police, to do so. Accordingly, having deposited their garbage "in an area particularly suited for public consumption, for the express purpose of having strangers take it," respondents could have no reasonable expectation of privacy in the inculpatory items that they discarded.

Greenwood, 486 U.S. at 40-41 (citations and footnotes omitted).

Clearly there is a significant difference between heat which escapes from one's home and garbage which is voluntarily placed at the curb for collection. We find the Supreme Court of Washington's summary of these differences to be persuasive. The court observed:

First, it is difficult to say one voluntarily vents heat waste in the same way that one disposes of garbage. Heat, unlike garbage, automatically leaves a person's home without any deliberate participation by the homeowner. Even if some heat is vented to the outside, as in Peeny-Feeney, the device detects all heat leaving the home, not just the heat directed out through the vent. Moreover, the Greenwood court relied in part on the notion that when one places garbage out at the curb, one assumes the foreseeable risk of other people, children, or animals discovering and seizing what is in the garbage can. However, it is difficult to say one should expect other people to use sophisticated infrared instruments on one's home to view so-called heat waste. The Greenwood court also noted one can avoid the risk by not placing private information in the garbage. On the other hand, the only way

for a person to avoid the risk of exposure in this case...would be to turn off all heat sources in the home, even in subzero temperatures.

Washington v. Young, 867 P.2d at 602-3. Likewise, the Supreme Court of Montana criticized this approach, noting:

The problem with this approach is that it does not address the fact that waste heat, unlike garbage, can only be detected by means of a technologically advanced device. It is not readily accessible to “animals, children, scavengers, snoops, and other members of the public,” as was the garbage in Greenwood. Furthermore, since dissipation is an inevitable result of heat production, it does not require a deliberate act nor is it preventable in the same way that one can conceal incriminating garbage. The laws of thermodynamics dictate that no matter how much one insulates, heat will still escape. Moreover, the fact that one insulates to keep heat in indicates a subjective expectation of privacy.

State v. Siegal, 934 P.2d at 186.

In United States v. Place, 462 U.S. 696 (1983), the Supreme Court upheld the warrantless use of trained drug dogs to detect contraband in passenger luggage at an airport. There, Place’s personal luggage was temporarily detained so that law enforcement officials could expose it to a trained narcotics detection dog based upon their reasonable suspicion that Place’s luggage contained contraband.

While it is true that the thermal imager, like a trained drug dog, merely extracts information about the interior of an object solely from an analysis of external physical phenomena, the Supreme Court in Place emphasized that it is the particularity with which a trained drug dog is able to detect contraband that justifies the dog’s use. The Court stated:

[T]he canine sniff discloses only the presence or absence of narcotics, a contraband item. Thus, despite the fact that the sniff tells the authorities something about the contents of the luggage, the information obtained is limited. This limited disclosure also ensures that the owner of the property is not subjected to the embarrassment and inconvenience entailed in less discriminate and more intrusive investigative methods. In these respects, the canine sniff is sui generis. We are aware of no other investigative procedure that is so limited both in the manner in which the information is obtained and in the content of the information revealed by the procedure.

United States v. Place, 462 U.S. at 707. This same justification cannot be extended to the use of a thermal imaging device. To the contrary, the thermal imaging device, unlike the trained drug dog, does not have the ability to distinguish between legal and illegal activities occurring within the home based upon the amount of extraneous heat detected. “In this respect, [use of the thermal imager] is the very antithesis of a dog sniff because the trained narcotics dog alerts only in the presence of contraband whereas the thermal imager indiscriminately registers all sources of heat.” People v. Deutsch, 52 Cal. Rptr. 2d at 369.

Based on the foregoing, we do not find use of the thermal imager here analogous to the warrantless searches upheld in Greenwood or Place. We do, however, find the analysis employed by the Supreme Court in United States v. Karo, 468 U.S. 705 (1984), to be applicable.

In Karo, government agents installed a beeper in a can of ether. The ether was obtained by Respondent Karo from a government informant and was to be used to extract cocaine from clothing that had been imported into the United States. Agents then tracked the movements of the can, using visual surveillance at times, and the beeper exclusively at times. Eventually, agents tracked the beeper inside a private residence. Thereafter, agents obtained a warrant to search the residence based, in part, on the information derived through the use of the beeper.

One of the issues addressed by the Court was “whether the monitoring of a beeper in a private residence, a location not open to visual surveillance, violates the Fourth Amendment rights of those who have a justifiable interest in the privacy of the residence.” Id. at 714. The Court ultimately answered this question in the affirmative, noting the following:

At the risk of belaboring the obvious, private residences are places in which the individual normally expects privacy free of governmental intrusion not authorized by a warrant, and that expectation is plainly one that society is prepared to recognize as justifiable.

Id.

The Court found that the use of the beeper was no more proper than if a DEA agent, without a warrant, entered the house in order to verify its presence. The Court stated:

For purposes of the Amendment, the result is the same where, without a 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.

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The monitoring of an electronic device such as a beeper is, of course, less intrusive than a full scale search, *but it does reveal a critical fact about the interior of the premises that Government is extremely interested in knowing and that it could not have otherwise obtained without a warrant.*

Id. at 715 (emphasis added).

Like the beeper used by government agents in Karo, the WASP device employed in this case also revealed critical information regarding the interior of the premises that could not have otherwise been obtained without a warrant. As the Cusumano court observed,

[t]he machine intruded upon the privacy of the home not because it records white spots on a dark background but rather because the interpretation of that data allows the government to monitor those domestic activities that generate a significant amount of heat. Thus, while the imager cannot reproduce images or sounds, it nonetheless strips the sanctuary of the home of one vital dimension of its security: the 'right to be let alone' from arbitrary and discretionary monitoring of our actions by government officials.

Cusumano, 67 F.3d at 1504 (citations and footnote omitted).

Based on the foregoing, we conclude that Appellee met the requirements of Katz and thus established that a search implicating the Fourth Amendment occurred when law enforcement agents scanned his home with the WASP device. Accordingly, we hold that the warrantless use of the WASP device violated the Fourth Amendment and affirm the Superior Court's decision holding the same.

Mr. Justice Nigro concurs in the result.

Mr. Justice Castille files a Dissenting Opinion.