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UNITED STATES v. DEANER[1]: THERMAL IMAGERY, THE LATEST ASSAULT ON THE FOURTH AMENDMENT RIGHT TO PRIVACY

I. INTRODUCTION

The United States government is currently under fire for its innovative use of thermal imaging technology[2] in the war against marijuana cultivation and trafficking.[3] The government uses thermal imaging to detect heat emanating from residential homes, commercial buildings, detached garages and other structures.[4] Excessive heat emissions are a

1. United States v. Deaner, Crim. Nos. 1:CR-92-0090-01, 1:CR-92-0090-02, 1992 WL 209966 (M.D. Pa., July 27, 1992), *aff'd*, 1 F.3d 192 (3rd Cir. 1993).

2. Telephone interview with Col. Carlos Aniglioh, President, Thermal Technologies, Inc., (Feb. 12, 1993)[hereinafter *Aniglioh*]. Col. Aniglioh stated that a thermal imager is a forward looking infra-red device used to detect heat sources. *Id.* It is a passive device, in that it does not send beams or rays at the area or structure at which it is directed. *Id.* It is non-intrusive, in that it does not penetrate the structure in any way. *Id.* It detects differences in temperature on the surface of objects being observed. *Id.* The device shows heat sources as a white color for intense heat to shades of gray for cooler temperatures on the same surface. *Id.* This data is simultaneously recorded on VHS video tape in black and white for use in supporting an affidavit for a search warrant. *Id.* Only the most sophisticated devices show surface temperature. *Id.* The more commonly used devices do not provide temperature readings but only detect surface heat. *Id.*

3. *See* United States v. Penny-Feeney, 773 F. Supp. 220, 223 (9th Cir. 1991), *aff'd*, 984 F.2d 1053 (9th Cir. 1993) (noting that thermal imaging is used for a variety of purposes including the identification of indoor marijuana cultivation sites, location of missing persons in a forest, the identification of inefficient building insulation, the detection of overloaded power lines, and the detection of forest fire lines through smoke). *See also* United States v. Kyllo, 809 F. Supp. 787 (D.Or. 1992) (challenging the government's use of thermal imaging); *Penny-Feeney*, 773 F. Supp. at 220 (finding use of a device to detect surface heat from a home does not amount to a search within the Fourth Amendment).

4. *Aniglioh, supra* note 2. Thermal imaging technology is routinely used for a variety of purposes. Most recently it has been utilized by law enforcement officers to detect heat emanating from residential homes, commercial buildings, detached garages and other structures. *Id.* It is used in aerial surveillance as well as ground surveillance. *Id.* Thermal Technologies, Inc., is a thermal imaging development and litigation consulting firm in Baltimore, MD. *Id.* Thermal Technologies, Inc. specializes in developing sophisticated, custom thermal imaging devices used by five branches of the United States military, as well as the Federal Bureau of Investigation, Drug Enforcement Agency, federal, state, and local police and fire departments. *Id.* The company also provides expert testimony and services on the topic of thermal imaging. *Id.* Mr. Aniglioh indicated that this tech-

characteristic of large scale hydroponic gardening operations[5] commonly used for the indoor cultivation of marijuana.[6]

In *United States v. Deaner*,[7] the United States District Court for the States of Pennsylvania and Maryland addressed whether the government's warrantless[8] use of thermal imaging constituted an unreasonable search[9] within the meaning of the Fourth Amendment.[10] In

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nology ranges in price from an inexpensive device (commonly used by police) costing $15,000 to $25,000, to expensive models used in military applications costing upwards of $150,000 to $225,000. *Id.*

5. *Id.* Excessive heat is a characteristic of hydroponic gardening which utilizes artificial lighting to produce the large amount of heat necessary for the indoor cultivation of marijuana. *Id.*

6. *Penny-Feeney*, 773 F. Supp. at 224.

7. United States v. Deaner, Crim. Nos. 1:CR-92-0090-01, 1:CR-92-0090-02, 1992 WL 209966 (M.D. Pa., July 27, 1992), *aff'd*, 1 F.3d 192 (3rd Cir. 1993).

8. BLACK'S LAW DICTIONARY 1350 (6th ed. 1990). A search warrant is defined as:

> an order in writing, issued by a justice or magistrate, in the name of the state, directed to a sheriff, constable, or other officer, authorizing him to search for and seize any property that constitutes evidence of the commission of a crime, contraband, and fruits of crime, or things otherwise criminally possessed; or, property designed or intended for use or which is or has been used as the means of committing a crime.

Id.

9. *See* People v. Harfmann, 555 P.2d 187, 189 (Colo. Ct. App. 1976) (finding that visual observation which infringes upon a person's reasonable expectation of privacy constitutes a "search" in the constitutional sense). *See also* People v. Boylan, 854 P.2d 807 (Colo. 1984) (finding that a "search" consists of looking for or seeking out that which is otherwise concealed from view); State v. Woodall, 241 N.E.2d 755 (Ohio 1968) (defining a search as an examination of a person's house or other buildings or premises, or of his person, or of his vehicle, aircraft, etc., with a view to the discovery of contraband or illicit or stolen property, or some evidence of guilt to be used in the prosecution of criminal action for some crime or offense with which he is charged); People v. Harris, 256 Cal.App.2d 455 (Cal. Ct. App. 1967) (where court notes that "search" implies prying into hidden places for that which is concealed and that object searched for had been hidden or intentionally put out of the way).

See generally Brian J. Serr, *Great Expectations of Privacy: A New Model for Fourth Amendment Protection*, 73 MINN. L. REV. 583, 585 (1989) ("with the Supreme Court's recent laissez faire attitude toward law enforcement searches and seizures, government investigatory techniques threaten to intrude more and more on the privacy of everyday life"). The list of surveillance techniques declared to fall outside of the scope of Fourth Amendment protection reads like an arsenal of government power one might associate with the authority of a police state. For instance, police may choose to attach an electronic device to our automobile bumper and use it to constantly monitor our movements. The government may keep track of whom we correspond with as well as who we telephone and who telephones us. *Id.* Some courts have held that there is no Fourth Amendment protection for information contained on the check and deposit slips which we process through our banks. *Id.* Thus, the government may learn the identify of the person who wrote the check as well as the person to whom a check is written. *Id.* The garbage that we remove from our homes, wrapped in plastic bags and left for collection in our yard may be taken by the police and sifted to reveal much about the way we live inside our house. *Id.*

upholding the government's use of thermal imaging to detect residential heat emissions, the *Deaner* court misapplied the established rule that what a person seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected under the Fourth Amendment.[11]

II. SUMMARY OF FACTS

On April 1, 1992, the Drug Enforcement Agency (DEA) executed an affidavit[12] of probable cause[13] in support of a warrant to search the

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10. U.S. CONST. AMEND. IV. The Fourth Amendment states:

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

Id.

11. *See* Katz v. United States, 389 U.S. 347, 359 (1967) (where the Supreme Court abandoned the "trespass doctrine" and held that the right to protection under the Fourth Amendment depends not on a property interest in the place intruded upon but on whether the person seeking protection under the Fourth Amendment had a legitimate expectation of privacy in the invaded place). *Katz* established a two prong test for determining whether a legitimate expectation of privacy exists: first, the individual involved must have exhibited an actual, subjective expectation of privacy; second, the expectation must be one that society is prepared to acknowledge as reasonable. *Id.* at 360-361. *Katz* also established that what a person seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected under the Fourth Amendment. *Id.* at 347. *See also* Note, *From Private Places to Personal Privacy: A Post Katz Study of Fourth Amendment Protection* 43 N.Y.U.L. REV. 968, 976 (1968) [hereinafter *Protection*]. The *Katz* decision has pointed the way towards a complete reorientation in the analysis of problems relating to governmental intrusion in the private affairs of individuals. *Id.* Rather than relying on an interpretation of the nature of legitimacy of the government's searching activity, the Court's holding was based solely on the validity of the individual's expectation of privacy under the circumstances. *Id.* It follows that even inadvertent, non purposeful government activity may constitute an "unreasonable search" if it unearths non public information legitimately within the personal dominion of the aggrieved party.

12. *See* State v. Knight, 549 P.2d 1397, 1401 (Kan. 1976) (defining affidavit as a written or printed declaration or statement of the facts, made voluntarily, and confirmed by oath as an affirmation of the party making it, presented to the person having authority to administer such oath or affirmation). *Compare* Thomas M. Finnegan et al., Project, *Fifteenth Annual Review of Criminal Procedure: United States Supreme Court and Courts of Appeals 1984-1985*, 74 GEO. L.J. 499, 520 (1985) ("When seeking a warrant, an officer must present sufficient facts in an affidavit to allow a magistrate weighing the evidence in a nontechnical, common sense, and realistic manner to make an independent judgment about the existence of probable cause."). *See also* FED R. CRIM. P. 41(c)(1) (sworn affidavit must establish grounds for issuing warrant).

13. *See* Illinois v. Gates, 462 U.S. 213, 238 (1983), *reh'g denied*, 463 U.S. 1237 (1983). Probable cause to search exists when, at the time the magistrate issues the warrant, there are reasonable trustworthy facts and circumstances that are sufficient, given the totality of the circumstances, to lead a reasonable person to believe that there is a fair probability

residence of the defendant, Tab R. Deaner.[14] The affidavit stated that the DEA had performed aerial reconnaissance of Mr. Deaner's residence and the surrounding area using a thermal imager affixed to the wing of an airplane.[15] DEA agents focused the device on Mr. Deaner's residence and other homes in the vicinity.[16] Further, the affidavit stated that the thermal imager showed greater amounts of heat emanating from Mr. Deaner's residence as compared to the thermal images recorded from other homes in the area.[17] In addition, the affidavit stated that the windows of Mr. Deaner's residence were covered with both wood and non-transparent plastic.[18] The Magistrate relied on this and other information to issue a search warrant for Mr. Deaner's residence.[19] The DEA subsequently performed a search of Mr. Deaner's home, curtilage,[20] outbuildings and vehicles.[21] As a result, the police confiscated about twenty marijuana plants[22] and charged Mr. Deaner with two counts of violating Section 841(a)(1) of 21 U.S.C.[23]

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that the items sought constitute fruits, instrumentalities or evidence of crime, and will be present at the time and the place of the search. *Id.*

14. *Deaner*, 1992 WL 209966 at 1.

15. *Id.* at 2-3.

16. *Id.* at 2.

17. *Id.* at 2. DEA Investigative Assistants, Terrence Michael and Jorge Farias, performed the aerial surveillance of Deaner's home, and stated that the heat source observed at the defendant's home was consistent with the heat detected at another indoor marijuana cultivation operation discovered by use of the thermal imaging technology. *Id.*

18. *Id.* at 1. The affidavit contained a statement by one DEA Agent indicating that the covering of windows was a common practice among those cultivating marijuana indoors. *Id.* Window coverings, it was stated, are used to conceal the plants from public view and to retain heat in the growing area. *Id.*

19. *Id.* at 2. The Magistrate also relied on other information contained in the affidavit in determining that probable cause existed, including; 1) that the defendant had purchased two hundred and forty-four pounds of hydroponic and organic gardening supplies from a garden supply house that advertised expertise and experience in supplying equipment to individuals who cultivate marijuana indoors, 2) that government agents had recovered fresh stems and leaves of marijuana from the defendant's household refuse, 3) that government agents recovered a receipt for fertilizer from the above mentioned garden supply house, 4) that government agents found several plastic containers presumed to be used for germination of marijuana seeds. *Id.* at 1-2.

20. BLACK'S LAW DICTIONARY 384 (6th ed. 1990) (originally, curtilage referred to: "the land and outbuildings immediately adjacent to a castle that was surrounded by a high stone wall; today its meaning has been extended to include any land or building immediately adjacent to a dwelling, and usually enclosed some way by a fence or shrubs"). *See also* State v. Hanson, 313 A.2d 730 (N.H. 1973) (for search purposes, curtilage includes those outbuildings which are directly connected with use of land or grounds surrounding the dwelling which are necessary and convenient for family purposes and domestic employment).

21. *Deaner*, 1992 WL 209966 at 2.

22. United States v. Deaner, 1 F.3d 192, 195 (3rd Cir. 1993).

23. *Id.* at 1. As a result, the defendants were indicted and charged with three counts of violating Section 841(a)(1) of 21 U.S.C. *Id.* This violation is defined as the planting,

Following his arrest, Mr. Deaner filed a motion to suppress the evidence produced in the search,[24] arguing that the use of thermal imaging technology, under the circumstances, constituted a search in violation of his Fourth Amendment rights.[25] The court denied the motion and held that the government's use of thermal imaging did not constitute a search within the Fourth Amendment.[26]

III. ISSUES AND CONCLUSIONS

First, the court addressed whether Mr. Deaner manifested an actual, "subjective expectation of privacy"[27] in the heat emanating from his home.[28] The *Deaner* court concluded that Mr. Deaner had such an expectation in these emissions.[29] Second, the court addressed whether a thermal imager's degree of technological sophistication was relevant in determining whether its warrantless use constituted an unreasonable search within the meaning of the Fourth Amendment.[30] The *Deaner* court concluded that the degree of technological sophistication of a

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cultivating and growing (i.e., collectively "manufacturing") marijuana; knowingly or intentionally possessing marijuana, with the intent to distribute; or, conspiracy to possess marijuana with the intent to distribute a controlled substance. 21 U.S.C. § 841 (a)(1). Where section 841(a)(1) is violated and the suspect's actions are found to involve 100 or more marijuana plants, then the automatic sentence to be imposed by the court is a term of imprisonment which may not be less than 5 years and not more than 40 years. 21 U.S.C. § 841(b)(1)(B)(vii).

24. *Deaner*, 1992 WL 209966 at 2.

25. *Id.* at 2.

26. *Id.* at 4.

27. *See* JOSHUA DRESSLER, UNDERSTANDING CRIMINAL PROCEDURE 60 (1991). Under the "subjective expectation of privacy" test the individual must have manifested an actual, or subjective expectation of privacy. *Id.* Many commentators have faulted this formula. *Id.* Their thesis is that if the subjective component is taken seriously, the government can eliminate privacy expectations by the simple act of announcing its intention to conduct an Orwellian surveillance. *Id.* Once people know that the government is reading their mail or listening to their conversations then they will have no subjective expectation of privacy. *Id. See also Katz*, 389 U.S. at 352 (noting that "one who occupies [a phone booth] . . . is surely entitled to assume that the words he utters into the mouthpiece will not be broadcast to the world").

28. *Deaner*, 1992 WL 209966 at 3.

29. *Id.* at 3. The *Deaner* court found no evidence that the defendant intentionally vented heat from his home. *Id.* at 4. The court also found that the defendant did not abandon his privacy interest in such heat through his acts of boarding up some windows and covering others with non transparent plastic. *Id. Compare Penny-Feeney*, 773 F. Supp. at 226 (finding that the defendant did not manifest an actual expectation of privacy in the heat waste since he voluntarily vented it outside the garage where it was exposed to the public, and that the defendant in no way attempted to impede its escape or exercise dominion over it). *See generally* United States v. Kyllo, 809 F. Supp. 787 (D. Or. 1992) (challenging the government's use of thermal imaging).

30. *Deaner*, 1992 WL 209966 at 2-3.

given investigative procedure is irrelevant in such a determination.[31] Third, the court addressed whether Mr. Deaner had a "legitimate expectation of privacy"[32] in heat emitted from his home.[33] The *Deaner* court concluded that Mr. Deaner did not have a "legitimate expectation of privacy" in heat emanating from his home.[34] Fourth, the court addressed whether the use of thermal imaging, under the circumstances, constituted a search of Mr. Deaner's home.[35] The *Deaner* court held that the government's action did not constitute a search within the meaning of the Fourth Amendment, and therefore was valid.[36]

IV. COURT'S ANALYSIS

In reaching its decision, the *Deaner* court first determined whether the defendant had a subjective expectation of privacy in heat emitted from his home.[37] The *Deaner* court compared the facts of the case at bar with those in *United States v. Penny-Feeney*,[38] where the District Court of Hawaii found that the use of a device to detect surface heat

31. *Id.* at 3.

32. *See* Rakas v. Illinois, 439 U.S. 128, 148-49 (1978), *reh'g denied*, 439 U.S. 1122 (1979) (concluding that the petitioners had no legitimate expectation of privacy in the glove compartment and the area under the front seat). *See also Katz*, 389 U.S. at 361 (suggesting that for an expectation of privacy to be protected, it must be one that society is prepared to recognize as reasonable); Smith v. Maryland, 442 U.S. 735 (1979) (reasoning that since no legitimate expectation of privacy existed in a pen register device that recorded numbers dialed from a particular telephone, no search had occurred); Couch v. United States, 409 U.S. 322 (1973) (where the Supreme Court held, in part, that the petitioner had no legitimate expectation of privacy in business records, which he voluntarily gave to an accountant); United States v. Shelby, 573 F.2d 971 (7th Cir. 1978), *cert. denied*, 439 U.S. 841 (1978) (no legitimate expectation of privacy in garbage cans behind the defendants garage); People v. Edwards 458 P.2d 713 (Cal. 1969) (Fourth Amendment applies to search of garbage cans within two to three feet of defendant's back door). *Compare* United States v. Alden, 576 F.2d 772 (8th Cir. 1978), *cert. denied*, 439 U.S. 855 (1978) (no Fourth Amendment interest in a trash pile).

33. *Deaner*, 1992 WL 209966 at 2. *See generally* Katz v. United States, 389 U.S. 347 (1967) (finding that defendant had legitimate expectation of privacy that society was willing to acknowledge as reasonable).

34. *Deaner*, 1992 WL 209966 at 3.

35. *Id.* at 4.

36. *Id.* The court applied the three part analysis endorsed in United States v. Solis, 536 F.2d 880, 882 (9th Cir. 1976), concluding that just as the use of a trained canine to detect drug contraband in *Solis* did not constitute a search within the Fourth Amendment, neither did the government's use of thermal imaging in *Deaner*. *Deaner*, 1992 WL 209966 at 4. Using this analysis the court specifically concluded that: first, Mr. Deaner had an expectation that heat would emanate from his home; second, the method of heat detection was neither offensive or embarrassing; third, the thermal imager did not provide specific information as to activities within Mr. Deaner's home. *Id.*

37. *Id.* at 3.

38. *See Penny-Feeney*, 773 F. Supp. at 228 (concluding that the use of thermal imaging to detect residential heat emissions did not constitute a search).

from a home does not amount to a search within the meaning of the Fourth Amendment.[39] In *Penny-Feeney*, the defendant intentionally used exhaust fans to ventilate heat from his garage.[40] The *Deaner* court distinguished the facts of *Penny-Feeney*, by emphasizing that there was no evidence that Mr. Deaner intentionally ventilated heat outside his residence.[41] Therefore, the court concluded that Mr. Deaner did not abandon his privacy interest in such emissions, and in fact, manifested a subjective expectation of privacy.[42]

Second, the court addressed whether a thermal imager's degree of technological sophistication was relevant in determining whether its use constituted a search under the Fourth Amendment.[43] The *Deaner* court stated its conclusion in a single concise sentence.[44] It concluded simply, that the degree of sophistication of this investigative procedure was irrelevant in making such a determination.[45]

Third, the court addressed whether Mr. Deaner had a "legitimate expectation of privacy" in the heat emanating from his home.[46] In concluding that he did not, the court analogized residential heat emissions to odors emitted from a home or luggage.[47] Then, quoting the United States Supreme Court in *United States v. Place*,[48] the *Deaner* court

39. *Deaner*, 1992 WL 209966 at 3.

40. *Id. See also Penny-Feeney*, 773 F. Supp. at 226. In *Penny-Feeney*, the United States District Court of Hawaii upheld the government's use of thermal imaging to detect heat emanating from the defendant's residence. *Id.* There the defendant used exhaust fans to vent heat from a garage adjacent to his residence. *Id.* The court referred to the heat exhaust detected by the thermal imager as "heat waste," and applied the Supreme Court ruling of California v. Greenwood, 486 U.S. 35 (1988) to hold that use of thermal imaging does not constitute a search. *Id.* at 226. The court reasoned that the defendant did not have a reasonable expectation of privacy as to this "heat waste" because he had not taken measures to impede its escape or made attempts to exercise dominion over such waste. *Id. See also* United States v. Kyllo, 809 F. Supp. 787 (D.Or. 1992). The *Kyllo* court reasoned that use of thermal imaging did not represent an intrusion into the defendant's home. *Id.* at 792. Therefore, the court concluded that no intimate details of the home were observed and there was no violation of privacy within the home. *Id.*

41. *Deaner*, 1992 WL 209966 at 3.

42. *Id.* The *Deaner* court distinguished its case and *Penny- Feeney* on their facts, concluding that the defendant did, in fact, manifest an expectation of privacy as to his residential heat emissions. *Id.* The court reasoned that, unlike the facts in *Penny-Feeney*, where exhaust fans were intentionally used to ventilate heat outside the home, there was no evidence that the defendant intentionally vented heat outside his residence or otherwise abandoned his privacy interest in this heat. *Id.*

43. *Id.*

44. *Deaner*, 1992 WL 209966 at 4.

45. *Id.*

46. *Id.*

47. *Id.*

48. United States v. Place, 462 U.S. 696, 707 (1983) (finding that the investigative procedure of subjecting luggage to a "sniff test" by a well trained narcotics canine did not constitute a search within the Fourth Amendment).

stated that "just as a person has no legitimate expectation of privacy in odors emitted from his home[49] or luggage,[50] nor does Mr. Deaner have an expectation of privacy in heat emitted from his home."[51]

Fourth, the *Deaner* court addressed whether the use of thermal imaging was constitutionally valid within the meaning of the Fourth Amendment.[52] In concluding that the government's use of this procedure did not constitute a search, the *Deaner* court reasoned that the use of thermal imaging technology was analogous to other investigative procedures previously found to be constitutionally valid.[53] Specifically, the court compared the use of thermal imaging to detect heat with the use of trained canine in *United States v. Solis*.[54] In making its comparison, the *Deaner* court endorsed the three part analysis utilized in *Solis*.[55]

In applying the first part of the *Solis* analysis, the court evaluated whether Mr. Deaner had a legitimate expectation of privacy in the heat emanating from his home.[56] In *Solis*, the defendant covered a truck trailer's payload with talcum powder (a common technique used by drug dealers to mask the smell of marijuana).[57] Similarly, Mr. Deaner took specific precautionary measures to prevent heat emissions from escaping his residence, including covering the windows of his residence with both non-transparent plastic and wood.[58] The *Deaner* court reasoned that, just as the defendant in *Solis* believed that the odor of marijuana would emanate from his tractor trailer, Mr. Deaner believed that heat would escape from his home.[59]

In the second part of the *Solis* analysis, the *Deaner* court evaluated whether the government's use of thermal imaging offended or embarrassed Mr. Deaner.[60] The *Deaner* court concluded that, just as the "dog sniff" procedure in *Solis* was not offensive or embarrassing, neither was

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49. United States v. Thomas, 757 F.2d 1359, 1367 (2d Cir. 1985), *cert. denied*, Fisher v. United States, 474 U.S. 819 (1985) (finding use of trained canine to sniff for narcotics outside the defendant's apartment constituted a search).

50. *See generally Place*, 462 U.S. at 696, 707.

51. *Deaner*, 1992 WL 209966 at 3.

52. *Id.*

53. *Id.* at 4. *See* United States v. Solis, 536 F.2d 880, 882 (9th Cir. 1976).

54. *Deaner*, 1992 WL 209966 at 4. *See Solis*, 536 F.2d at 882-83 (holding that the government procedure of using trained canine to detect the odor of drugs does not constitute a search).

55. *Id.* at 4. *See Solis*, 536 F.2d at 882-883. In *Solis* the court evaluated whether 1) there was an expectation that the odor would emanate from the trailer, 2) the use of trained canines by the officers was offensive or embarrassing and 3) the trained canines were capable of detecting more than drugs. *Id.*

56. *Deaner*, 1992 WL 209966 at 4.

57. *Solis*, 536 F.2d at 881.

58. *Deaner*, 1992 WL 209966 at 4.

59. *Id.*

60. *Id.*

the government's use of thermal imaging.[61] The *Deaner* court reasoned that the proximity of the plane to Mr. Deaner's home rendered the use of the thermal imager actually less offensive and embarrassing than a "dog sniff" procedure, where the officer and the dog must be in close proximity to their target.[62]

In applying the final step of the *Solis* analysis, the *Deaner* court distinguished the capabilities of trained canine from thermal imaging.[63] The court declared that while a marijuana sniffing dog gives a decisive indication of the presence of an illegal substance in a particular area, thermal imaging is not capable of providing definitive feedback as to activity within the same area.[64] Therefore, the *Deaner* court concluded that thermal imaging was less definitive and intrusive than the use of trained drug sniffing canine.[65] In conclusion, the *Deaner* court weighed each part of the analysis equally and held that just as the use of a trained drug sniffing canine in *Solis* did not constitute a search within the meaning of the Fourth Amendment, neither did the government's use of thermal imaging in *Deaner*.[66]

V. AUTHOR'S ANALYSIS

The *Deaner* court correctly ruled that Mr. Deaner had an actual, subjective expectation of privacy in heat emitted from his home. However, in concluding that the use of thermal imaging did not constitute a search, the court erred in stating that the technological sophistication of thermal imaging technology was irrelevant in determining whether its use constituted a search under the Fourth Amendment. Moreover, the court also erred in failing to find that Mr. Deaner had a "legitimate expectation of privacy" in the heat emanating from his home. Finally, the court improperly analogized the government's use of thermal imaging to the government's use of trained drug detecting canine. This third error resulted from flawed reasoning, culminating in the court erroneously concluding that the government's activity in *Deaner* did not constitute a search within the meaning of the Fourth Amendment.[67]

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61. *Id.*

62. *Deaner*, 1992 WL 209966 at 4. The airplane surveillance was initiated at approximately 1000 feet over Mr. Deaner's residence. *Id.* at 3. *See Solis*, 536 F.2d at 882 (to effectively perform that investigative procedure the officer and canine must be in close proximity to their target).

63. *Deaner*, 1992 WL 209966 at 2-3.

64. *Id.* at 3.

65. *Id.* at 4.

66. *Id.* at 5.

67. *Deaner*, 1992 WL 209966 at 4.

A. SUBJECTIVE EXPECTATION OF PRIVACY

The *Deaner* court correctly ruled that Mr. Deaner had an actual, subjective expectation of privacy in heat emitted from his home.[68] The general rule, developed in *Katz v. United States*,[69] states that if one voluntarily exposes his activities to the public the individual implicitly consents to this public exhibition, and as such, surrenders his expectation of privacy with respect to those activities.[70]

In concluding that Mr. Deaner had an actual, subjective expectation of privacy, the court relied on the factual distinction between *Deaner* and *Penny-Feeney*.[71] The court in *Penny-Feeney* specifically noted that the defendant had installed exhaust fans in the garage housing his hydroponic gardening operation.[72] The *Deaner* court correctly distinguished the intentional ventilation of the garage in *Penny-Feeney* from the facts in the instant case, where Mr. Deaner took no measures to ventilate heat from his home.[73] The *Deaner* court specifically noted that Mr. Deaner had covered the windows of his home with both non-transparent plastic and wood.[74]

Since Mr. Deaner did not voluntarily expose the activities in his house to the public, the *Katz* rule does not apply.[75] Mr. Deaner did not surrender his actual, subjective expectation of privacy with respect to activities within his house, and, therefore, the *Deaner* court correctly

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68. *Compare* United States v. Penny-Feeney, 773 F. Supp. 220, 224 (9th Cir. 1991) (the court failed to find an actual, subjective expectation of privacy where heat emitted from the defendant's home to constitute exposure of "heat waste" to the public). *See generally* California v. Greenwood 486 U.S. 35 (discussing one's expectation of privacy in trash placed outside the curtilage of the home).

69. Katz v. United States, 389 U.S. 347, 351 (1967).

70. *Id.* In *Katz*, Justice Harlan's concurring opinion outlined a two prong test to determine whether an individual has a justifiable expectation of privacy from government intrusion under the circumstances. *Id.* First, a person must have exhibited an actual (subjective) expectation of privacy. *Id.* Second, this actual expectation of privacy must be one that society is prepared to recognize as legitimate or reasonable. *Id. See generally* United States v. Burns, 624 F.2d 95 (10th Cir. 1980), *cert. denied*, 449 U.S. 954 (1980) (holding that a person speaking loudly enough to be heard with the naked ear has assumed the risk of being overheard).

71. *Deaner*, 1992 WL 209966 at 3.

72. *Penny-Feeney*, 773 F. Supp. at 226.

73. *Deaner*, 1992 WL 209966 at 3; *see Penny-Feeney*, 773 F. Supp. at 226.

74. *Deaner*, 1992 WL 209966 at 4.

75. *See* State v. DeLaurier, 488 A.2d 688, 694 (R.I. 1985) (holding that the defendant, who bought a cordless phone, had no justifiable expectation of privacy protecting him from an unauthorized interception of his communications by law enforcement officials who picked up his conversation on a local A.M. radio, since the defendant was advised in the owner's manual that given the nature of the cordless telephones privacy was not insured). *See also* Tyler v. Berodt, 877 F.2d 705 (8th Cir. 1989), *cert. denied*, 493 U.S. 1022 (1990) (no reasonable expectation of privacy for conversations over a cordless phone).

ruled that Mr. Deaner had an expectation of privacy in the heat emanating from his home.

B. Failure to Acknowledge the Technical Sophistication of a Surveillance Technique as a Factor in a Proper Search Analysis

In analyzing the government's use of thermal imaging, the *Deaner* court erred in stating that the degree of technological sophistication of a particular investigative procedure is irrelevant in determining whether its use constitutes a search within the Fourth Amendment.[76] Courts have consistently considered the technological sophistication of a given device to be a relevant factor in determining whether the government's use of such technology constituted a search.[77] The use of sophisticated mechanical and electronic detection devices such as magnetometers and x-ray scans have been uniformly held to constitute a search within the meaning of the Fourth Amendment.[78] Interestingly, several courts have liberally held that the use of *any device* which enables the government to identify objects or activities, which could not otherwise be identified, constitutes a search.[79]

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76. *See* Dow Chemical Co. v. United States, 476 U.S. 227, 238 (1986). "It may well be, as the government concedes, that surveillance of private property by using sophisticated surveillance equipment not generally available to the public, such as satellite technology, might be constitutionally proscribed, absent a warrant." *Id. See also Protection supra* note 12, at 986. Not only the place, but the type of information seized and, consequently, the means of intrusion, must be considered as factors affecting the parameters of personal privacy from governmental intrusion. *Id.* The instrumentality used is but one aspect of a complex situation which should be examined as a whole. *Id.*

77. *See* United States v. Henry, 615 F.2d at 1223, 1227 (9th Cir. 1980) (finding technological capability of x-ray scan relevant in the court's holding that use of such technology constitutes a search). *See also* People v. Hyde 12 Cal. 3d 158 (Cal. 1974) (where the Supreme Court of California found that a magnetometer at an airport, though minimally intrusive, unquestionably operates to search individuals within the meaning of the Fourth Amendment especially since it is technologically capable of revealing the presence of metal objects in areas under personal control as to which the individual maintains a reasonable expectation of privacy and freedom from government inspection); United States v. Albarado, 495 F.2d 799 (2nd Cir. 1974) (use of magnetometer found to constitute a search); United States v. Slocum, 464 F.2d 1180 (3rd Cir. 1972) (government use of magnetometer found to constitute a search); United States v. Epperson, 454 F.2d 769 (4th Cir. 1972) (use of magnetometer found to constitute a search under the circumstances).

78. *See* United States v. Haynie, 637 F.2d 227, 230 (4th Cir. 1980) (holding that government's use of x-ray scanners constitutes a search). *See also* United States v. Henry, 615 F.2d 1223 (9th Cir. 1980) (noting airport x-ray scanner is certainly more intrusive device than magnetometer); *Epperson*, 454 F.2d 769 (use of magnetometer constituted a search under the circumstances).

79. *See* United States v. Louis, 672 P.2d 708, 710-11 (Or. 1983) (holding that police may use cameras, including telephoto lenses, or other means of recording or measuring what they observe, so long as the effect of the devices is not to enhance the officers' own obser-

In *Deaner*, the government used a technological device, that by most standards would be considered sophisticated, to detect information about the activities within Mr. Deaner's home.[80] Thermal imaging technology is specifically designed to provide the user with information not available through any other means.[81] Similar to an x-ray or magnetometer, the information provided by this technology cannot be detected by human senses or a sense enhancing device.[82] Failure of the *Deaner* court to consider the technological capability of a thermal imaging device is contrary to the historical treatment of sophisticated technology in other jurisdictions.[83] As such, the *Deaner* court erred in failing to consider this factor relevant in its decision as to whether its use constituted a search.

C. FAILURE TO ACKNOWLEDGE THE DEFENDANT'S LEGITIMATE EXPECTATION OF PRIVACY

The court incorrectly concluded that Mr. Deaner did not have a "legitimate expectation" of privacy in the heat emanating from his home. In failing to find such an expectation, the *Deaner* court erred by implicitly relying on *the plain view doctrine* to justify the government's use of thermal imaging. In addition, the *Deaner* court failed to consider *the open fields doctrine* when it determined that the government's action did not constitute a search.

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vations). *See also* United States v. Taborda, 635 F.2d 131 (2nd Cir. 1980) (finding that police use of a telescope to identify objects or activities unable to be identified without it was a "search" and that, absent a search warrant, the observations could not form a basis of a search warrant); People v. Arno, 90 Cal. App. 3d 505 (Cal. Ct. App. 1979) (Fourth Amendment violated where government claimed that use of high powered binoculars to perceive events occurring inside an office and a home was merely detecting light waves that "leaked out of the premises" into the surrounding airspace); United States v. Kim, 415 F. Supp. 1252 (D. Haw. 1976); Katz v. United States, 389 U.S. 347 (1967). As in *Deaner*, the government agents were merely gathering conversations which "leaked out" of the phone booth into the airspace surrounding the telephone booth. *Id.* at 352. Nevertheless the fourth amendment applied. *Id.* at 353. *See generally Protection*, *supra* note 12, at 975 (arguing that as it relates to the rights of individuals, intrusions accomplished by the passive reception of information can be as much a search as the most trespassory invasions).

80. *Aniglioh*, *supra* note 2. Col. Aniglioh indicates that technological developments in the area of thermal imaging have steadily increased over the last decade. The demand for new military and law enforcement applications clearly exceed the speed of product development by companies experimenting with this technology. *Id.*

81. *Id.* This technology is primarily used in military, police, and fire fighting applications for the precise reason that the information provided by this technology is not available through other means. *Id.*

82. *Id.*

83. *See supra* notes 78 - 80 and accompanying text for a discussion of the treatment of sophisticated search technology in other jurisdictions.

1. *The Plain View Doctrine*

The general rule under the plain view doctrine is that the discovery of something through the use of one's natural senses, from a constitutionally permissible vantage point, does not constitute a search within the meaning of the Fourth Amendment.[84] This doctrine is based on the theory that exposure to the public destroys any reasonable expectation of privacy.[85]

Courts have consistently held that the detection of odors by an officer's natural senses or a dog's senses does not constitute a search.[86] However, thermal heat emissions are not in plain view and cannot be detected by the natural senses of an officer.[87] In fact, thermal heat emissions are invisible to the naked eye.[88] These emissions can only be detected by using sophisticated technology that empowers a government agent with an extrasensory capability.[89] Thus, a government agent's senses may be enhanced artificially through the use of common devices

84. *See* United States v. Ard, 731 F.2d 718, 723 (11th Cir. 1984) (finding owner had no reasonable expectation of privacy when agents found trailer, saw burlap bags through two inch gap between trailer's doors, smelled marijuana and undercover agents were lawfully on the property). *See also* Project, *supra* note 13, at 503 (officers do not perform searches when they discover something through the use of one or more their senses from a vantage point at which their presence is constitutionally permissible); Texas v. Brown, 460 U.S. 730 (1983) (holding that the conduct that enabled an officer to observe the interior of a car and of his open glove compartment was not a search within the meaning of the Fourth Amendment); California v. Ciraolo, 476 U.S. 207 (1986), *reh'g denied*, 478 U.S. 1014 (1986) (the mere fact that an individual has taken measures to restrict some views of his activity does not preclude police officer's observations from a public vantage point where he has a right to be and which renders the activities clearly visible).

85. *Katz*, 389 U.S. at 352. *See generally* United States v. Whaley, 779 F.2d 585 (11th Cir. 1986) (no reasonable expectation of privacy as to the basement of a home which could be viewed with the naked eye from a neighboring property or adjoining canal).

86. *See* United States v. Ventresca, 380 U.S. 102, 111 (1965) (search warrant properly based on investigators smell of "fermenting mash" in the suspected vicinity). *See also* United States v. Johnston, 497 F.2d 397 (9th Cir. 1974) (search warrant properly based on agent's detection of odor emitted from luggage at airport baggage area); State v. Coleman, 412 So. 2d 532 (La. 1982) (where police in baggage area with consent of airline, smelling odor of marijuana coming from checked bags did not constitute a search); Johnson v. United States, 333 U.S. 10 (1974) (detection of odors by government agents may furnish evidence of probable cause). *Compare* United States v. Knotts, 460 U.S. 276 (1983) (suggesting that the Fourth Amendment does not "prohibit the police from augmenting their sensory facilities with such enhancement as science and technology afforded them").

87. *Aniglioh*, *supra* note 2.

88. *Id. Compare Protection*, *supra* note 12, at 975. Courts have consistently held that examination of luggage and individuals by a magnetometer or x-ray machine amounts to a search, primarily because these technologies disclose the hidden contents of an area in which an individual has a legitimate expectation of privacy. *Id.*

89. *Id. Compare Knotts*, 460 U.S. at 282 (suggesting that the Fourth Amendment does not "prohibit the police from augmenting their sensory facilities with such enhancement as science and technology afforded them").

such as searchlights[90] or binoculars.[91] However, the agents' senses may not be multiplied into new senses through the use of sophisticated machines such as a magnetometer,[92] x-ray machines, radiographic scanners, electronic eavesdropping equipment, or thermal imagers.[93]

In *Deaner*, the court misapplied the plain view doctrine. The information recovered by the government's aerial surveillance of Mr. Deaner's residence was not information that was in plain view.[94] Although the government recorded Mr. Deaner's residential heat emissions from a constitutionally permissible location, the emissions were not detected by the officers' natural senses.[95] Thermal emissions are invisible, odorless, silent and generally not detectable by human touch.[96] Unlike the use of binoculars or searchlights, there is no sense enhancing device currently on the market today which enables an officer to distinguish the degree of thermal emissions from a home or structure, no matter what the officer's distance from the accused person's home.[97]

2. *The Open Fields Doctrine*

In addition, the *Deaner* court also failed to recognize that aerial reconnaissance, using a thermal imager affixed to the wing of an airplane, represents an exception to the open fields doctrine.[98] As a general rule, aerial reconnaissance of open fields does not constitute a search under this doctrine.[99] The primary exception to this rule is aerial surveillance

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90. *See* United States v. Lee, 274 U.S. 559, 563 (1927) (no search where Coast Guard shined search light on boat and discovered cans of alcohol). *See also* United States v. Dunn, 480 U.S. 294 (1987), *reh'g denied*, 481 U.S. 1024 (1987) (use of a flashlight to illuminate the interior of the defendant's barn, located outside of the curtilage, did not transform the officer's observations into an unreasonable search within the meaning of the Fourth Amendment).

91. United States v. Allen, 633 F.2d 1282, 1289 (9th Cir. 1980) (finding the use of binoculars from hill observation site violated no reasonable expectation of privacy). *But see* Dow Chemical Co. v. United States, 476 U.S 227, 239 (1986) (finding government conducted a search within the Fourth Amendment when it used an electronic device for enhanced viewing of the interior of an industrial plant).

92. *See* United States v. Albarado, 495 F.2d 799, 802-03 (2d. Cir. 1974) (finding a search when airport authorities use magnetometer or X-ray machine).

93. *See* United States v. Beale, 674 F.2d 1327, 1332-33 (9th Cir. 1982) (finding that sense enhancing devices merely enable officers to perceive at night that which they can normally perceive unaided during the day).

94. *Aniglioh*, *supra* note 2.

95. *Id.*

96. *Id.*

97. *Id.*

98. Oliver v. United States, 466 U.S. 170, 179 (1984) (the public and police may lawfully survey open fields from the air).

99. *See Id.* at 180, where the Supreme Court noted their interpretation of "open fields" as per se unprotected by the Fourth Amendment and thus consistent with the *Katz* approach, because the open fields doctrine provides that an individual may not legiti-

of the home or curtilage.[100] Government activity may constitute a search if the aerial reconnaissance reveals something within the home or curtilage, not visible to the naked eye.[101] This exception has been established because the home is a constitutionally protected area under the express language of the Fourth Amendment.[102] The Supreme Court has consistently recognized that individuals have a heightened privacy interest in their dwellings.[103] As such, courts have uniformly held that a warrantless government intrusion into the home constitutes an illegal search within the Fourth Amendment.[104]

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mately demand privacy for activities conducted out of doors in fields, except in the area immediately surrounding the home. *See also* Dow Chemical Co. v. United States, 476 U.S. 229 (9186) (the Supreme Court addressed the issue of whether aerial surveillance of an industrial park constituted a search within the Fourth Amendment). In *Dow*, the Court held that it did not constitute a search but stated that "we find it particularly important that this is not an area immediately adjacent to a private home, where the privacy expectations are most heightened". *Id.* at 237 n.4; California v. Ciraolo, 476 U.S. 207 (1986), *reh'g denied*, 478 U.S. 1014 (1986) (where the Supreme Court recited that "[a]erial observation of curtilage may become invasive, either due to physical intrusiveness or through MODERN TECHNOLOGY which discloses to the senses those intimate associations, objects or activities otherwise imperceptible to police or fellow citizens").

100. *Oliver*, 466 U.S. at 171. The *Oliver* court held that open fields are not protected by the Fourth Amendment because they are neither "houses" nor "effects" which are specifically encompassed by the protection of the Fourth Amendment. *Id.*

101. *See Ciraolo*, 476 U.S. at 215.

102. *See generally A Reconsideration of the Katz Expectation of Privacy Test*, 76 MICH. L. REV. 155, 175 (1977) (arguing that the home is an obvious starting point in the search for the minimum content of the Fourth Amendment, for the wording of the amendment makes clear the great emphasis it places upon the right of the people to be secure in their homes).

103. *See Katz*, 389 U.S. at 358 (recognizing that expectations of privacy in the home are reasonable). *See also* Boyd v. United States, 116 U.S. 616 (1886) (holding that the Fourth Amendment serves to protect "the sanctity of a man's home and the privacies of life"); Silverman v. United States, 365 U.S. 505 (1961) (holding that a person's right to be free from unreasonable governmental intrusion while in his own home is at the very core of the Fourth Amendment); United States v. Taborda, 635 F.2d 131 (2nd Cir. 1980) (finding that "the very fact that a person is in his home raises an inference that he intends to have privacy, and if that inference is borne out by his actions, society is prepared to respect his privacy"); United States v. Martinez-Fuerte, 428 U.S. 543 (1976) (where the Supreme Court declared that sanctity of the private dwelling is ordinarily afforded the most stringent Fourth Amendment protection); Payton v. New York, 445 U.S. 573 (1980). In *Payton*, the Supreme Court declared that the Fourth Amendment protects the individual's privacy in a variety of settings. *Id.* at 589. It also declared that "in none is the zone of privacy more clearly defined than when bounded by the unambiguous physical dimensions of an individual's home - a zone that finds its roots in clear and specific constitutional terms: the right of people to be secure in their . . . houses . . . shall not be violated." *Id.*

104. *See* United States v. Thomas, 757 F.2d 1359, 1366 (2nd Cir. 1985). The court reasoned that the defendant had a legitimate expectation of privacy in the contents of his closed apartment, including an expectation that they could not be "sensed" from outside his door. *Id.* at 1367. The court concluded that use of a trained canine impermissibly intruded on that legitimate expectation of privacy. *Id.* The court ultimately held that be-

In *Deaner*, the police flew over Mr. Deaner's private residence solely for the purpose of discovering evidence of criminal activity. Mr. Deaner's home is a constitutionally protected area and therefore the government's use of thermal imaging to detect residential heat emissions does fall within the open fields exception. The government's use of thermal imaging under these circumstances clearly constituted an unreasonable search, representing a direct violation of Mr. Deaner's right to privacy under the Fourth Amendment.[105]

D. THE *DEANER* COURT USED IMPROPER ANALOGY AND FLAWED REASONING IN CONCLUDING THAT THE GOVERNMENT'S ACTIVITY DID NOT CONSTITUTE A SEARCH

Finally, the court improperly analogized the government's use of thermal imaging for detecting residential heat emissions to the use of trained canines for detecting drugs. The court's improper analogy, combined with its erroneous presumption that the use of trained canines represents a constitutionally valid search, enabled the court to erroneously hold that the government's use of thermal imaging did not constitute a search.

Clearly, the use of drug detecting canines is not analogous to the use of a thermal imager.[106] In effect, trained canines enhance the officer's olfactory sense perception.[107] Thermal imaging, on the other hand, provides information not available to either an officer's normal or enhanced senses.[108]

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cause of the defendant's heightened expectation of privacy inside his dwelling, the canine sniff at his door constituted a search. *Id. See also* Katz v. United States, 389 U.S. 347 (1967) (holding that "a man's home is for the most purposes, a place where he expects privacy"); Florida v. Riley, 488 U.S. 445 (1989) (stating that "if the Constitution does not protect the defendant's marijuana garden against such surveillance, it is hard to see how it will forbid the Government from aerial spying on the activities of a law abiding citizen on her fully enclosed patio.").

105. *See* Florida v. Riley, 488 U.S. 445 (1987) (holding that the Fourth Amendment prohibits police activity which, if left unrestricted, would jeopardize an individual's sense of security or would too heavily burden those who wish to guard their privacy).

106. *See* United States v. Beale, 674 F.2d 1327, 1334 (9th Cir. 1982) (concluding that magnetometer, x-ray machine, or other electronic or mechanical surveillance devices are not analogous to a canine sniff). *See also* People v. Mayberry, 644 P.2d 810 (Cal. 1981). The California Supreme Court explained that in its view,

> the escaping smell of contraband from luggage may be likened to the emanation of a fluid leaking from a container. The odor is detectable by the nose, as the leak is visible to the eye. Unlike mechanical aids such as x-ray, magnetometer, and infrared photography, a dog only reveals contraband by means of the dog's entirely external examination. No technological enhancement is involved.

Id. at 814.

107. *Aniglioh, supra* note 1.

108. *Id.*

The *Deaner* court's analysis also erroneously presumed that the use of trained canines to detect drugs is a constitutionally valid search. In making this presumption, the *Deaner* court failed to acknowledge a number of decisions that have specifically held that under certain circumstances, the use of trained "drug sniffing" canines to detect drugs is not a constitutionally valid search.[109] This erroneous presumption,

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109. *See* United States v. Bronstein, 521 F.2d 459, 464 (2d Cir. 1975), *cert. denied*, 424 U.S. 918 (1976). The clearest expression of this position is found in Judge Mansfield's concurring opinion:

> There is no legally significant difference between the use of an X-ray machine or magnetometer to invade a closed area in order to detect the presence of a metal pistol or knife, which we have held to be a search . . . and the use of a dog sniff for marijuana inside a private bag. Each is a non human means of detecting the contents of a closed area without physically entering into it. The magnetometer ascertains whether there is metal in the hidden space by detecting changes in the magnetic fields surrounding the area of the hidden space. The dog uses its extremely sensitive olfactory nerve to determine whether there are marijuana molecules emanating from the hidden space. Neither constitutes a particularly offensive intrusion, such as ransacking the contents of the hidden space or exposing a person to indignities in case of a personal search. But the fact remains that each detects hidden objects without actual entry and without the enhancement of human senses. The fact that the canine's search is more particularized and discriminate than that of the magnetometer is not a basis for a legal distinction. The important factor is not the relative accuracy of the sensing device but the fact of intrusion into a closed area otherwise hidden from human view, which is the hallmark of any search.

Id. at 464.

See also United States v. Thomas, 757 F.2d 1359 (2nd Cir. 1985). The *Thomas* court held that uses of information acquired from a "canine sniff" outside a certain apartment, indicating the presence of narcotics inside constituted an illegal search. *Id.* at 1367. There the Second Circuit Court of Appeals addressed the issue of whether the use of trained canines to discover drug contraband inside a private premises constituted a search within the Fourth Amendment. *Id.* at 1360. The court held that a canine sniff does constitute a search when conducted a the door of a person's dwelling, stating that:

> [a dog sniff] remains a way of detecting the contents of a private enclosed space. With a trained dog, police may obtain information about what is inside a dwelling that they could not derive from use of their own senses. Consequently, the officers use of a dog is not a mere improvement of their sense of smell, as an ordinary eye glass improves vision, but is a significant enhancement accomplished by a different, and superior sensory instrument.

Id. at 1366. The *Thomas* court reasoned that there is a greater privacy expectation in a person's home then in luggage at a public airport as in *Place*. *Id.* at 1366.

See also Pooley v. State 705 P.2d 1293 (Alaska Ct. App. 1985) (holding that a dog sniff is a search under the state constitution); United States v. Dicesare 765 F.2d 890 (9th Cir. 1985) (concurring opinion reasons that bringing a canine into an apartment to smell the particular occupant's door constitutes a search); United States v. Beale, 674 F.2d 1327 (9th Cir. 1982) (concluding that use of trained canine to detect drug contraband constitutes a search). *Compare* State v. Louis, 672 P.2d 708 (Or. 1983). The *Louis* court distinguished its facts from the use of technologically enhanced efforts, which might allow the police to see what they could not ordinarily see (e.g., use of a high powered telephoto lens). *Id.* at 715. It is difficult to characterize a dog as a technological enhancement. *Id.* at 716. A marijuana sniffing dog does not "enhance anything", it perceives something, an odor. *Id.*

combined with the faulty analogy between trained canines and thermal imagers, enabled the court to illogically hold that the government's use of thermal imaging did not constitute a search.

VI. CONCLUSION

The *Deaner* court's decision is contrary to the protection afforded the public by the express language of the Fourth Amendment.[110] Over the last 200 years, advances in technology have equipped the government with tools enabling it to monitor the public's actions with startling efficiency.[111] Unfortunately, every technological development is capable of abuse in its application as a surveillance tool.[112]

Under a narrow interpretation of this decision, the government is clearly allowed to use thermal imaging to target any individual for surveillance — for good reason, for bad reason, or for no reason at all. Under a broad interpretation of this decision, the government may be able to use any number of sophisticated surveillance techniques without judicial authorization or review. The *Deaner* court's endorsement of thermal imaging empowers the government with a capability that clearly frustrates an individual's freedom to choose not only what shall be disclosed or withheld about himself, but also his choice as to when, to whom, and the extent to which such disclosure shall be made.

The impact of this case and other judicial decisions endorsing the innovative use of new surveillance technology expand the government's ability to gather intimate details about the private lives of the general public. Hopefully, future courts will focus on both the place and the mode of surveillance, in light of societal conventions, and conclude that

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110. *See supra* note 11. *See also* California v. Ciraolo, 476 U.S. 207 (1986). In *Ciraolo* the court recognized that "[r]apidly advancing technology now permits police to conduct surveillance in the home itself, an area where privacy interests are most cherished in society, without any physical trespass. The rule in *Katz* was designed to prevent silent unseen invasions of Fourth Amendment privacy rights in a variety of settings". *Id.* at 225.

111. *See* Justice Warren and Justice Brandeis, *The Right to Privacy*, 4 HARV. L. REV. 193, 195 (1890) (alerting us to this development, Justice Brandeis stated that "numerous mechanical devices threaten to make good the prediction that what is whispered in the closet shall be proclaimed from the house tops"). *See also* Olmstead v. United States, 277 U.S. 438 (1928) (Justice Brandeis urging the Supreme Court to re-evaluate its interpretation of the Fourth Amendment because "discovery and invention have made it possible for the government, by means far more effective than stretching upon the rack, to obtain disclosure in court of what is whispered in the closet").

112. *See* United States v. White, 401 U.S. 745, 756 (1971), *reh'g denied*, 402 U.S. 990 (1971) (the Supreme Court stating that high-tech surveillance may be "the greatest leveler of human privacy ever known"). *See also* United States v. Rabinowitz, 339 U.S. 56 (1950) (where the Supreme Court comments that "it is indeed easy to forget, especially in view of the current concern over drug trafficking that the scope of the Fourth Amendment's protection does not turn on whether the activity is illegal or innocuous").

the use of thermal imaging infringes on legitimate expectations of privacy, similar to Mr. Deaner's expectations here.

Bradley J. Plaschke