INFRARED IMAGING TECHNOLOGY: THREATENING TO SEE THROUGH THE FOURTH AMENDMENT

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Saturday morning, 1:00 a.m., August 19, 1994,[1] a helicopter is hovering two hundred feet above the calm waters of a suburban lake. Inside, a pilot and two law enforcement officials gaze at a video monitor. This particular helicopter is equipped with a Forward Looking Infrared Device (FLIR) capable of detecting subtle differences in the surface temperature of objects. As the helicopter turns, homes slowly pan on and off of the screen. Suddenly, the pilot focuses the FLIR on a particular home, the basement glows brightly on the screen. It must be significantly warmer than the basements of neighboring homes. Surprised, one officer looks out the window and is unable to see any difference between the home on the screen and its neighbors. He notes the address and jots a reminder to inform the narcotics division of suspected indoor marijuana cultivation.

The operator, continuing to focus the FLIR, stops at a home with large sliding glass doors off the second floor deck. The door was left open on this cool night and only a thin, opaque curtain covers the opening. On the monitor, infrared images of two people, one significantly larger than the other, are apparently circling each other. Suddenly, the larger image appears to force the smaller one down and a struggle ensues. The officers immediately radio headquarters and request a patrol be sent to investigate. The infrared images once again circle each other on the screen and then leave the vicinity of the thinly curtained window.

Finally, as the last lakefront home comes into range, the FLIR operator's attention is drawn to its attached porch. Easily visible through the thin canvas walls is the heat signature from a television. A few feet away on the floor two figures, oblivious to the far off sound of a helicopter, appear to be sharing an extremely intimate moment. The officers linger over the video display, silently reminiscing about their adolescent exploits, and finally veer the helicopter back to its base.

INTRODUCTION

As shocking as it may appear, the technology highlighted in the above fictional story is a modern reality. The constitutional controversy surrounding this technology began with *United States v. Penny-Feeney*[2] when a Hawaiian federal district court held that the utilization of infrared imaging in the warrantless search of a residence did not violate the Fourth Amendment's proscription against illegal searches and seizures.[3] Some courts have recognized and adopted this opinion with disturbingly little discussion.[4] A few brave

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1. This is a hypothetical situation illustrative of the current state of infrared imaging technology.

2. 773 F. Supp. 220 (D. Haw. 1991), *aff'd on other grounds*, 984 F.2d 1053 (9th Cir. 1993). For a comprehensive discussion of *Penny-Feeney*, see *infra* notes 99-116 and accompanying text.

3. *Id.* at 228.

4. *See, e.g.*, United States v. Ishmael, 48 F.3d 850 (5th Cir. 1995); United States v. Ford, 34 F.3d 992

courts,[5] including the Washington Supreme Court,[6] have, however, rejected it. This division of authority demonstrates the challenge that this technology presents to Fourth Amendment analysis.

The purpose of this Note is to explain infrared imaging and illustrate how law enforcement's warrantless utilization of this technology violates constitutionally guaranteed individual rights. Before constitutional analysis can begin, it is essential to first examine the fundamental conflict between effective law enforcement and individual privacy rights. Second, it is imperative to understand how Fourth Amendment jurisprudence has evolved in addressing these types of controversies. Third, an explanation of this technology is essential to understanding any constitutional analysis. Finally, a criticism of prior court decisions will illustrate why warrantless utilization of this technology violates constitutionally protected rights.

I. THE FUNDAMENTAL CONFLICT

The opening hypothetical situation illustrates the power infrared imaging has to both seduce law enforcement officials and horrify private individuals. As America becomes more violent,[7] and society's scream for relief grows louder,[8] law enforcement's thirst for advanced forms of technology grows. Once carefully sequestered in the tool kit of the military,[9] sophisticated technologies such as infrared imaging are becoming increasingly more available to the public in post cold war America. As societal pressure on law enforcement mounts, the war on crime and drugs is becoming increasingly sophisticated. Criminals are automating their operations[10] and even processing drugs underground.[11]

(11th Cir. 1994); United States v. Pinson, 24 F.3d 1056 (8th Cir. 1994); United States v. Deaner, Nos. 1:CR-92-0090-01, 1:CR-92-0090-02, 1992 WL 209966 (M.D. Pa. 1992), *aff'd on other grounds*, 1 F.3d 192 (3rd Cir. 1993); State v. Cramer, 851 P.2d 147 (Ariz. 1992); State v. Mckee, 510 N.W.2d 807 (Wis. Ct. App. 1993).

5. *See, e.g.*, United States v. Field, 855 F. Supp. 1518 (W.D. Wis. 1994). This case sharply criticized the holding of *Penny-Feeney* and held that warrantless utilization of infrared imaging technology is a violation of an individual's Fourth Amendment rights. For a comprehensive discussion of this case, see *infra* notes 118-93 and accompanying text. *See also* United States v. Cusumano, Nos. 94-8056, 94-8057, 1995 WL 584973 (10th Cir. Oct. 4, 1995). On the eve of this Note's publication, the Tenth Circuit firmly rejected *Penny-Feeney* and clearly distinguished itself from the other circuits by holding that the warrantless utilization of infrared imaging violates the Fourth Amendment.

6. State v. Young, 867 P.2d 593 (Wash. 1994) (en banc).

7. Carolyn Skorneck, *Violent Crime Jumped 5.6% Last Year*, INDIANAPOLIS STAR, Oct. 31, 1994, at A1.

8. *Id.* (quoting Representative Charles Schumer, Democrat New York, "It's no wonder crime is America's Number 1 concern . . ."). Recent passage of the Violent Crime Control and Law Enforcement Act of 1994 ("Crime Bill"), illustrates congressional recognition of increasing societal demands for effective law enforcement. 42 U.S.C.A. §§ 13701-14223 (West 1995).

9. *See generally* Lisa J. Steele, *The View From on High: Satellite Remote Sensing Technology and the Fourth Amendment*, 6 HIGH TECH. L.J. 317 (1991) (discussing the introduction of high tech equipment into the public domain by highlighting satellite imagery).

10. *Marijuana Under the Lights*, FRESNO BEE, Jan. 10, 1991, at B8.

11. *Id.*

Therefore, law enforcement's "competitive enterprise of ferreting out crime"[12] demands utilization of every available alternative to effectively counter evolution of the criminal element.

Unfortunately, law enforcement's utilization of new technologies often conflicts with the constitutional rights of individuals.[13] Woven within the Constitution's democratic framework are the hopes, fears, and values of the framers. While only a governmental framework, this document carries with it the emotional baggage of historically trodden-upon individual rights.[14] The Constitution itself, and the Bill of Rights in particular, exemplify the strongly held view that individual rights should not be sacrificed for the sake of the government.[15] This idealistic view still pervades our society,[16] resulting in an individual's right to privacy being continually asserted against societal demands for effective law enforcement.[17] Therefore, the utilization of some technologies, while effective in fighting crime, nonetheless clash with the shield of individual rights established by the framers.

Infrared imaging technology serves as a poignant example of this continuing conflict. It is, however, uniquely disturbing and foreshadows what society and the courts will confront in the twenty-first century.

II. HISTORICAL EVOLUTION OF THE FOURTH AMENDMENT

The Fourth Amendment[18] encapsulates one of the fundamental freedoms that defines our government. A man's home is his castle. The ideal, that every citizen of our democracy should be able to "dwell in reasonable security and freedom from [government] surveillance,"[19] is distilled into this Amendment, which sought to protect colonists from a recent past of abuse, where they had been tortured by Writs of Assistance.[20] These Writs empowered revenue officers with the discretion to search for

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12. Johnson v. United States, 333 U.S. 10, 14 (1948).

13. *See infra* notes 41-88 and accompanying text.

14. *See generally* NELSON B. LASSON, THE HISTORY AND DEVELOPMENT OF THE FOURTH AMENDMENT TO THE UNITED STATES CONSTITUTION (1937); JACOB W. LANDYNSKI, SEARCH AND SEIZURES AND THE SUPREME COURT (1966).

15. *See generally* LASSON, *supra* note 14.

16. *See infra* note 23.

17. *See infra* notes 41-88 and accompanying text.

18. The Fourth Amendment to the Constitution provides:

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

U.S. CONST. amend. IV.

19. Johnson v. United States, 333 U.S. 10, 14 (1948). *See also* Camera v. Municipal Court, 387 U.S. 523, 528 (1967) (commenting that "[t]he basic purpose of the [Fourth] Amendment, as recognized by countless decisions of this Court, is to safeguard the privacy and security of individuals against arbitrary invasions by governmental officials"). *See* LASSON, *supra* note 14.

20. *See generally* 1 WAYNE R. LAFAVE, SEARCH AND SEIZURE: A TREATISE ON THE FOURTH AMENDMENT

smuggled goods and were recognized as "the worst instrument of arbitrary power, the most destructive of English liberty and the fundamental principles of law, there ever was found in an English law book, since they placed the liberty of every man in the hands of every petty officer."[21]

Governmental authority to search property had a turbulent history prior to the advent of the Fourth Amendment and the modern police officer.[22] As our country has transformed itself through the Industrial Revolution, the values embodied by the Fourth Amendment have continued to be grist in the mills of the courts. The question of how much governmental intervention into personal privacy is too much has been continually debated since our democracy's inception. No single constitutional ideal has been so fraught with conflict.[23]

While the Fourth Amendment encapsulates an essential element of a free society, the facts of particular cases and the needs of society have tugged our highest court in circles.[24] As a result, the definition and expanse of rights protected by the Fourth Amendment have gone through tumultuous changes.[25] Ultimately there has evolved a right of privacy, woven from a number of amendments, that establishes a constitutionally protected interest in activities and conversations.[26]

(2d ed. 1986). *See also* LASSON, *supra* note 14.

21. Boyd v. United States, 116 U.S. 616, 625 (1886) (quoting THOMAS COOLEY, A TREATISE ON CONSTITUTIONAL LIMITATIONS WHICH REST UPON THE LEGISLATIVE POWER OF THE STATE OF THE AMERICAN UNION 301-303 (1868)). This statement was made during a famous debate in Boston, in February, 1761. The debate was perhaps the most prominent event in precipitating the colonies resistance to English oppression. *Id.*

22. *See* LASSON, *supra* note 14. *See also* Marcus v. Search Warrants of Property, 367 U.S. 717, 724-29 (1961) (describing English common law precedents to the Fourth Amendment).

23. *See* Chimel v. California, 395 U.S. 752, 770 (1969) (White, J., dissenting) ("Few areas of the law have been as subject to shifting constitutional standards over the last 50 years as that of the search 'incident to an arrest.' There has been remarkable instability in this whole area . . . ."). Professor Wayne LaFave notes in the introduction to his renowned treatise:

> [I]t is beyond question that the Fourth Amendment has been the subject of more litigation than any other provision of the Bill of Rights. Indeed, I would be willing to wager . . . that . . . lawyers and judges have spilled more words over the Fourth Amendment than all of the rest of the Bill of Rights taken together.

LAFAVE, *supra* note 20, at v.

24. *See infra* notes 27-91 and accompanying text.

25. *Compare* Katz v. United States, 389 U.S. 347 (1967) *with* Goldman v. United States, 316 U.S. 129 (1942). *See also infra* notes 52-75 and accompanying text.

26. *See* Griswold v. Connecticut, 381 U.S. 479, 484 (1965) (holding that the First, Third, Fourth, Fifth, and Ninth Amendments have together established a "penumbra" of constitutional rights of privacy). *See also* William M. Beaney, *The Constitutional Right to Privacy*, 1962 SUP. CT. REV. 212.

A. Fourth Amendment Evolution to 1967

1. Boyd v. United States: Establishment of a Fourth Amendment Cornerstone.—The Supreme Court's decision in *Boyd v. United States*,[27] handed down a century after the passage of the Bill of Rights,[28] was the first Supreme Court decision to grapple with the meaning of the Fourth and Fifth Amendments.[29] The truly monumental aspect of *Boyd* is Justice Bradley's recognition that invasions of individual privacy rights are not defined by particular governmental actions.[30] Rather, the Fourth Amendment protects certain privacy interests regardless of the form of invasion the government employs.[31]

Surprisingly, the *Boyd* decision arose out of a modest dispute between the Boyd firm and the federal government. *Boyd* involved a civil forfeiture proceeding precipitated by the defendant's alleged failure to pay custom duties. After forfeiture proceedings had begun, government officials obtained a court order requiring Boyd to relinquish incriminating invoices. The firm complied, but argued that the statute authorizing the order was unconstitutional.[32]

Justice Bradley's opinion reflected at length on English law as well as the abuses of warrant power that gave birth to the Bill of Rights.[33] Justice Bradley realized that the "principles laid down in this opinion [will] affect the very essence of constitutional liberty

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27. 116 U.S. 616 (1886).

28. The Court's involvement was delayed for two reasons. First, until 1891 the Court lacked the jurisdiction to hear criminal appeals. *See* 26 Stat. 827 (1891). Secondly, Congress only rarely utilized the criminal jurisdiction of the federal government until late in the nineteenth century. *See generally* LASSON, *supra* note 14.

29. *See generally* LASSON, *supra* note 14. *See also* Note, *Formalism, Legal Realism, and Constitutionally Protected Privacy Under The Fourth and Fifth Amendments*, 90 HARV. L. REV. 945 (1977). *Boyd* created an absolute protection around private papers, even court ordered searches were considered unreasonable.

However, this impenetrable shield placed around private papers has been steadily eroded by the Court. The erosion culminated with two cases, Andersen v. Maryland, 427 U.S. 463 (1976) and United States v. Doe, 465 U.S. 605 (1984). The *Andersen* Court held that business records could lawfully be seized pursuant to a warrant. 427 U.S. at 478-480. The Court failed to focus on the private nature of the papers but instead noted that Andersen voluntarily created the documents and upon their seizure was not compelled to say or do anything. 427 U.S. at 472-74. The *Doe* Court reaffirmed the holding that voluntarily created business records are not protected from governmental warrants. 465 U.S. at 610. *See also* Samuel A. Alito, Jr., *Documents and the Privilege Against Self-Incrimination*, 48 U. PITT. L. REV. 27 (1986) (presenting a comprehensive analysis of these cases and their Fifth Amendment consequences).

30. *Boyd*, 116 U.S. at 630.

31. *Id. See generally* Melvin Gutterman, *A Formulation of the Value and Means Models of the Fourth Amendment in the Age of Technologically Enhanced Surveillance*, 39 SYRACUSE L. REV. 647 (1988) (Professor Gutterman articulates the view that *Boyd v. United States* establishes a "value dominated" model of Fourth Amendment jurisprudence. This value dominated view is then contrasted with later Supreme Court opinions which focus upon whether a physical trespass has been committed.).

32. *Boyd*, 116 U.S. at 617.

33. *Id.* at 624-32.

and security."[34] He also realized that the factors surrounding the establishment of the Fourth Amendment demonstrate the enormous value the framers placed upon securing their property and privacy from governmental intrusion.[35]

Most importantly, Justice Bradley forged into Fourth Amendment analysis the concept that the manner in which governmental intrusion occurs is irrelevant to deciding whether protected rights have been abridged.[36] He reasoned that the Amendment applies to "all invasions on the part of the government and its employees and is not limited to a man's home but emcompasses all the 'privacies of life.'"[37] The *Boyd* opinion sought to establish a maximum level of protection for individual privacy consistent with historical precedents. This expansive attempt at protection was bound to be modified;[38] however, it still remains the cornerstone of Fourth Amendment jurisprudence[39] that established a basic right of all men "to be let alone."[40]

2. *Erosion of the Value Approach and Establishment of a Trespass Model.*—The language of *Boyd*, while zealously protecting individual rights, erected a mighty shield against law enforcement. In *Olmstead v. United States*,[41] the pragmatic considerations of effective law enforcement led to the first breach of *Boyd*'s shield.

Olmstead involved new technology—the wire tap. The defendants were convicted of conspiracy to violate the National Prohibition Act.[42] The central evidence was obtained by insertion of small wires into the defendant's ordinary telephone lines. Without trespass onto any property of the defendants, federal prohibition officers were able to intercept

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34. *Id.* at 630.

35. "The great end for which men entered into society was to secure their property. That right is preserved sacred and incommunicable in all instances where it has not been taken away or abridged by some public law for the good of the whole." *Id.* at 627 (quoting Lord Camden's discussion in Entick v. Carrington, 19 Howell's State Trials 1029 (1765)).

36. *Id.* at 630.

> It is not the breaking of his doors, and the rummaging of his drawers, that constitutes the essence of the offense; but it is the invasion of his indefeasible right of personal security, personal liberty, and private property, where that right has never been forfeited by his conviction of some public offense, it is the invasion of this sacred right which underlies and constitutes the essence of Lord Camden's judgment, and the Fourth Amendment.

Id. Justice Bradley's forceful language clearly denounces the idea that the manner of invasion is a factor in determining Fourth Amendment violations.

37. *Id.*

38. *See supra* note 29. *See also* Note, *The Life and Times of* Boyd v. United States *(1886-1976)*, 76 MICH. L. REV. 184 (1977).

39. The foundation of *Boyd* was expanded in two landmark cases: Weeks v. United States, 232 U.S. 383 (1914) (holding that the "unconstitutional manner" in which evidence was seized would render otherwise admissible evidence inadmissible) and Gouled v. United States, 255 U.S. 298 (1921) (where the Court established the "mere evidence" rule).

40. *See* Samuel D. Warren & Louis D. Brandeis, *The Right to Privacy*, 4 HARV. L. REV. 193, 193 (1890) (relying on *Boyd*, this article pioneered the concept of a fundamental right to privacy encompassing the right of every man to be let alone).

41. 277 U.S. 438 (1928).

42. Pub. L. No. 66-85, 41 Stat. 305 (1919), *repealed by* U.S. CONST. amend. XXI.

incriminating conversations encompassing the sale and distribution of liquor.[43] Justice Taft sided with effective law enforcement[44] by formulating a majority opinion that directly addressed the Fourth Amendment and established that the Amendment only applies to "material things" of the person: houses, papers, and effects.[45] Justice Taft reasoned that since telephone communications are not material things, they cannot be the subject of a search or seizure. In addition, Justice Taft established the postulate that the lack of a physical trespass would not allow a finding that the Amendment was violated.[46] Therefore, unlike *Boyd*, the type of governmental action in *Olmstead* was not the type the framers of the Amendment were addressing.[47]

Olmstead's new interpretation, that violations of the Fourth Amendment require a physical trespass, was a clear break with precedent,[48] and precipitated a vigorous dissent from Justice Brandeis. He viewed the Fourth Amendment as protecting a basic right of personal privacy[49] and implored the Court to look into the future where the ability of the government to invade personal privacy would only increase.[50] It was his impression that the majority's abandonment of *Boyd*'s protections, and its focus on the requirement of a trespass, ignored the ideals embodied in the Fourth Amendment.[51]

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43. *Olmstead*, 277 U.S. at 455-58.

44. Justice Holmes, in his dissent, also recognized that this case involved deciding among competing goals, that criminals should be apprehended and that the government should not foster the criminal element. He resolved this conflict by concluding: "[I]t [is] less evil that some criminals should escape than that the government should play an ignoble part." *Id.* at 470 (Holmes, J., dissenting).

45. *Id.* at 464.

46. *Id.* ("There was no searching. There was no seizure. The evidence was secured by the use of the sense of hearing and that only. There was no entry of the house or offices of the defendants.").

47. *Id.* at 463.

48. *See* Lopez v. United States, 373 U.S. 427 (1963) (Brennen, J., dissenting). "*Olmstead's* illiberal interpretation of the Fourth Amendment as limited to the tangible fruits of actual trespass was a departure from the Court's previous decisions, notably *Boyd*, and a misreading of the history and purpose of the Amendment." *Id.* at 459.

49. *Olmstead*, 277 U.S. at 478 (1928) (Brandeis, J., dissenting).

50. *Id.* at 474.

> The progress of science in furnishing the government with the means of espionage is not likely to stop with wire tapping. Ways may some day be developed by which the government, without removing papers from secret drawers, can reproduce them in court, and by which it will be enabled to expose to the jury the most intimate occurrence of the home.

Id.

51. *Id.* at 478.

> The makers of our Constitution undertook to secure conditions favorable to the pursuit of happiness. They recognized the significance of man's spiritual nature, of his feelings and of his intellect. They knew that only a part of the pain, pleasure and satisfactions of life are to be found in material things. They sought to protect Americans in their beliefs, their thoughts, their emotions and their sensations. They conferred, as against the government, the right to be let alone-the most comprehensive of rights and the right most valued by civilized men. To protect, that right, every unjustifiable intrusion by the government upon the privacy of the individual, whatever the means employed, must be deemed a violation of the Fourth Amendment.

3. Affirmance of the Trespass Model.—The increasing sophistication of listening devices, predicted by Justice Brandeis, quickly endowed governmental eavesdroppers with the ability to remotely monitor conversations without any appearance of a trespass. In *Goldman v. United States*,[52] the warrantless use of a Dictaphone microphone that allowed the recording of an attorney-client conversation from the opposite side of a partition was upheld because the microphone did not penetrate the attorney's wall. There was no physical trespass and hence no search prohibited by the Fourth Amendment.[53]

Goldman's method of analysis was later bolstered by the Court's decision in *Silverman v. United States*[54] where a spike mike[55] was placed through a minor penetration in a wall in order to overhear conversations of the defendant. The *Silverman* Court upheld the trespass analysis of *Goldman* by finding that the spike mike's trespass, no matter how minor, rendered Silverman's conversation constitutionally protected.[56] Analyzing the means of surveillance, in order to determine constitutional violations, exemplifies the forewarned pitfall of Justice Brandeis, causing the lines of constitutionally prohibited law enforcement activity to emerge in an arbitrary manner.[57] Despite the majority's opinion in *Silverman*, it is important to note that reliance upon a trespass analysis was criticized by members of the *Silverman* Court, setting the stage for yet another shift in Fourth Amendment analysis.[58]

B. Katz v. United States: The Value Model Reemerges

1. The Majority Opinion: The Pendulum Swings Back.—*Katz v. United States*[59] marked a new beginning, a virtual rebirth of early Fourth Amendment jurisprudence. The Court in *Katz*, like *Boyd*, sought to forge a model having ramifications far beyond the direct holding of the case.[60] The Court believed that the recent cases of "*Olmstead* and *Goldman* had been so eroded . . . that the 'trespass' doctrine there enunciated can no longer be regarded as controlling."[61] This sharply modified view, rooted in *Boyd*, once again dispelled the notion that the means utilized by the government to intrude upon individual privacy is the main factor in determining violations of the Fourth Amendment.

Id. at 478-79.

52. 361 U.S. 129 (1942).

53. *Id.* at 135.

54. 365 U.S. 505 (1961).

55. A spike mike is a specially designed microphone placed on a long rod or wire that can be inserted into small openings in order to covertly hear conversations.

56. *Silverman*, 365 U.S. at 509. Justice Stewart's analysis hinged upon finding that some constitutionally protected space had been invaded. Surprisingly, in just a few short years, Justice Stewart would be given the chance to revisit this decision and would overrule it. *See infra* notes 59-75 and accompanying text.

57. *Silverman*, 365 U.S. at 513 (Douglas, J., concurring). Justice Douglas concludes that the invasion is equal whether or not the microphone penetrates the wall. Therefore, the analysis should hinge not on theories of trespass but rather on "whether the privacy of the home was invaded." *Id.*

58. *Id.*

59. 389 U.S. 347 (1967).

60. *Id.* at 353.

61. *Id.*

The facts of *Katz* are surprisingly uncomplicated. The defendant was convicted of violating a federal statute prohibiting the electronic transmission of wagering information across state lines.[62] FBI agents, who had been observing the defendant for a period of time, noted his pattern of placing periodic phone calls from a particular phone booth. The inculpatory evidence was obtained when agents attached an electronic listening and recording device to the outside wall of a public phone booth used by the defendant. The agents were then able to monitor and record the defendant's side of conversations regarding the taking and placing of illegal wagers.

Prior to *Katz*, this type of surveillance would not have offended the Fourth Amendment,[63] and the prosecutorial argument was driven by this historical perspective.[64] The Court focused on whether Katz had a constitutionally protected privacy interest in a place where he had no property interest; indeed, no one did because it was a public phone booth. The Court took Fourth Amendment jurisprudence 180 degrees back to *Boyd*, by declaring the Amendment "protects people, not places,"[65] and holding that a person in a telephone booth may rely on the Amendment's protection. Once again individuals had a privacy interest that could be constitutionally protected, under appropriate circumstances, irrespective of their location or law enforcement's techniques.[66]

While the major impact of the *Katz* decision was its rejection of the idea that Fourth Amendment violations are determined by an analysis of property rights and trespass law,[67] the Court was careful to limit its decision in a number of important ways. First, the Court stated that "the Fourth Amendment cannot be translated into a general constitutional 'right to privacy.'"[68] Second, while the Court established the premise that the Amendment

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62. 18 U.S.C. § 1084 (1964) (providing in pertinent part that "(a) Whoever being engaged in the business of betting or wagering knowingly uses a wire communication facility for the transmission in interstate or foreign commerce of bets or wagers . . . shall be fined no more than $10,000 or imprisoned not more than two years, or both").

63. *See supra* note 52 and accompanying text.

64. *Katz*, 389 U.S. at 352 (1967).

65. *Id.* at 351.

66. *Id.* The Court recognized the vital role that the public telephone has come to play in private communication, but that factor was not the basis of the protection afforded. Rather, the protection stemmed from the fact that the defendant took steps reasonably calculated to afford privacy. Therefore, individuals must take some measures to ensure the privacy of their activities before the Fourth Amendment can be utilized as a constitutional shield.

67. *Id.* at 353 (holding that "it becomes clear that the reach of [the Fourth] Amendment cannot turn upon the presence or absence of a physical intrusion into any given enclosure"). *Id.* This view obviates the concern expressed by Justice Douglas's concurrence in *Silverman* that Fourth Amendment lines were being drawn in an arbitrary manner. *See supra* note 57 and accompanying text.

68. *Katz*, 389 U.S. at 350. The Court went on to clarify that:

> [The] Amendment protects individual privacy against certain kinds of governmental intrusion, but its protections go further, and often have nothing to do with privacy at all. Other provisions of the Constitution protect personal privacy from other forms of governmental invasion. But the protection of a person's general right to privacy—his right to be let alone by other people—is, like the protection of his property and of his very life, left largely to the law of the individual States.

Id.

"protects people, not places,"[69] it also stated that "[w]hat a person knowingly exposes to the public, even in his own home or office, is not the subject of Fourth Amendment protection. But what he seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected."[70]

2. Justice Harlan's Concurrence: The Two-Pronged Katz Test.—In Justice Harlan's concurrence, the commentary and holding of the majority opinion was distilled into a "reasonable expectation of privacy test."[71] Although the language of Harlan's test is not found in the majority opinion, this test has been seized upon, cited repeatedly, and is generally considered the essence of *Katz*.[72] Justice Harlan's two-part test is a marriage of the subjective expectations of the individual and society's willingness to accept those expectations as reasonable.[73] Therefore, in analyzing the phone booth conversation of the defendant in *Katz*, it was clear to Justice Harlan that the defendant had taken steps to evidence his subjective expectation of privacy and society was willing to accept that expectation as reasonable.[74] Justice Harlan also reiterated the view of the majority that a trespass analysis is inappropriate.[75] The Fourth Amendment now stood on a foundation that respected individual privacy rights which the court hoped would produce consistent analyses of future controversies.

C. The Fourth Amendment Since Katz

The nation's evolution since 1967 has forced the Supreme Court to continually reevaluate the extent to which law enforcement's "competitive enterprise of ferreting out crime"[76] infringes upon individual liberty. Justice Harlan's two-part test, while still the standard, has undergone significant assault by the Supreme Court.[77] Even Justice Harlan

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69. *Id.* at 351.

70. *Id.*

71. *Id.* at 361.

72. *See* Cardwell v. Lewis, 417 U.S. 583 (1974); United States v. Dionisio, 410 U.S. 1 (1973); Terry v. Ohio, 392 U.S. 1 (1968).

73. *Katz*, 389 U.S. at 361 (Harlan, J., concurring). Justice Harlan's "understanding of the rule . . . is that there is a two-fold requirement, first that a person have exhibited an actual (subjective) expectation of privacy and, second that the expectation be one that society is prepared to recognize as 'reasonable.'" *Id.*

74. *Id.*

75. *Id.* at 362. Justice Harlan, agreeing that *Goldman* should be overruled, stated that *Goldman's* "limitation on the Fourth Amendment protection is, in the present day, bad physics as well as bad law, for reasonable expectations of privacy may be defeated by electronic as well as physical invasion." *Id.*

76. Johnson v. United States, 333 U.S. 10, 14 (1948).

77. *See generally* Melvin Gutterman, *Fourth Amendment Privacy and Standing: "Wherever the Twain Shall Meet,"* 60 N.C. L. REV. 1 (1981). In *Smith v. Maryland*, Justice Blackman, speaking for the Court, recognized that the *Katz* test may be "an inadequate index of Fourth Amendment protection. For example, if the Government were suddenly to announce on nationwide television that all homes henceforth would be subject to warrantless entry" no individual could possibly have a subjective expectation of privacy. 442 U.S. 735, 741 (1979). In *Oliver v. United States*, Justice Powell, speaking for the Court, commented that "[t]he test of legitimacy is not whether the individual chooses to conceal assertedly 'private' activity." 466 U.S. 170, 182 (1984).

expressed misgivings about his own formula for Fourth Amendment analysis.[78] In addition, commentators have freely criticized the Supreme Court's varying interpretations of *Katz's* mandate.[79]

1. Dow Chemical and Ciraolo.—Exactly 100 years after *Boyd v. United States*,[80] the Supreme Court once again addressed the tension between governmental activities and the privacies of life. During the 1986 Term, in *Dow Chemical v. United States*[81] and *California v. Ciraolo*,[82] the Court applied the *Katz* test. Chief Justice Burger, speaking for the majority in both cases, resurrected notions compelling Fourth Amendment analysis to consider the manner in which law enforcement seeks to infringe upon an individual's privacy.[83]

In *Dow Chemical*, Dow refused to allow officials from the Environmental Protection Agency (EPA) to perform an onsite inspection of their new facility. Exceptional corporate security surrounded it. Rather than seek an administrative warrant, EPA officials employed an aerial photographer to provide surveillance of the facility.[84]

In *Ciraolo*, police officers acting on an anonymous tip and without a warrant flew over the defendant's residence and photographed marijuana plants growing in his yard. The officers had to resort to aerial photography because the yard was protected from ground level view by six foot and ten foot tall fencing.[85]

The Chief Justice's analysis in both cases focused on the manner in which information was obtained, emphasizing that officers were located within public vantage points and that any member of the flying public could have made identical observations.[86] In *Ciraolo*, Chief Justice Burger determined that because any public observer could have obtained information equivalent to that secured by the officers, the defendant could have had no reasonable expectation of privacy in the contents of his garden.[87] Furthermore, by exposing his garden to the aerial observer, the defendant assumed the risk of law enforcement discovering his criminal activities.[88]

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78. United States v. White, 401 U.S. 745 (1971) (Harlan, J., dissenting). "The analysis must, in my view, transcend the search for subjective expectations or legal attribution of assumptions of risk." *Id.* at 786.

79. *See, e.g.*, Michael Campbell, *Defining a Fourth Amendment Search: A Critique of the Supreme Court's Post-Katz Jurisprudence*, 61 WASH. L. REV. 191 (1986); William S. McAninch, *Unreasonable Expectations: The Supreme Court and the Fourth Amendment*, 20 STETSON L. REV. 435 (1991); David E. Steinberg, *Making Sense of Sense Enhanced Searches*, 74 MINN. L. REV. 563 (1990); Richard G. Wilkins, *Defining the 'Reasonable Expectation of Privacy': An Emerging Tripartite Analysis*, 40 VAND. L. REV. 1077 (1987).

80. 116 U.S. 616 (1886).

81. 476 U.S. 227 (1986).

82. 476 U.S. 207 (1986).

83. *Dow Chemical*, 476 U.S. at 237 (Chief Justice Burger stated that the "narrow issue raised . . . concerns aerial observation . . . without physical entry."); *Ciraolo*, 476 U.S. at 213 ("The police observations here took place . . . in a physically nonintrusive manner." (citation omitted)).

84. *Dow Chemical*, 476 U.S. at 229-30.

85. *Ciraolo*, 476 U.S. at 209-10.

86. *Id.* at 213.

87. *Id.* at 214.

88. *Id.*

2. The Modern Court: Striking a Balance.—The *Dow* and *Ciraolo* Court's reliance on the manner in which the surveillance was done, and its commentary concerning public exposure, have provided no shortage of criticism.[89] While a critique of these decisions is outside the scope of this Note, one can fairly state that the pragmatic considerations of effective law enforcement have forced the Court into utilizing an elastic interpretation of *Katz*. A number of decisions illustrate the Court's willingness to view assumption of the risk and public exposure as decisive factors disallowing expectations of privacy.[90] While *Katz* is in no way repudiated, the Court has stretched the analysis of Justice Harlan's two-part test to include additional factors. These additional factors create a balancing test permitting invasive law enforcement activities to be upheld as constitutional. In certain situations society's interest in preserving effective law enforcement has been held to outweigh individual privacy rights.[91] Therefore, recent Court opinions hint that the second aspect of the *Katz* test is actually an assessment of whether an alleged governmental search is unreasonable.

III. INFRARED IMAGING: A FOURTH AMENDMENT ANALYSIS

A. Technological Description of Infrared Imaging

Electromagnetic radiation is defined by an extensive spectrum from x-rays on one end to radio waves on the other. The visible portion of the spectrum, with which we are the most familiar, takes up only a small fraction.[92] The infrared spectral region is somewhat larger but significantly less energetic than the visible portion. Every object gives off infrared radiation the amount of which is dependent upon its temperature. The heat one feels from the glowing embers of a campfire is an example of infrared radiation.

Infrared imaging devices detect differences in the surface temperature of objects from the infrared radiation emitted. They do not determine absolute temperature in the same manner a thermometer does.[93] Therefore, if an item has a temperature identical to its background, an infrared imaging device will not be able to see it regardless of shape, color, or size. The comparable visual analogy is a polar bear in a snow storm. Additionally, this technology is analogous to vision in that, unlike radar, it is completely passive.[94] It does not generate any beams or rays,[95] and only receives emitted radiation. Therefore, the subjects of infrared surveillance have no means of knowing they are being monitored.

Most importantly, this technology has the ability to see through materials one would traditionally consider opaque. For example, thin plywood, curtains, roofing, and plastics,

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89. *See supra* note 79.

90. *See supra* notes 80-89 and accompanying text.

91. An excellent example of this is in the area of the canine sniff. Few could claim that this law enforcement activity does not invade the privacy of an individual, however, the Court views the needs of society outweighing the privacy interest invaded. *See infra* notes 112-15 and accompanying text.

92. *See generally* Karen Geer, *The Constitutionality of Remote Sensing Satellite Surveillance in Warrantless Environmental Inspections*, 3 FORDHAM ENVTL. L. REP. 43 (1991).

93. United States v. Penny-Feeney, 773 F. Supp. 220, 223 (D. Haw. 1991).

94. United States v. Porco, 842 F. Supp. 1393, 1395 (D. Wyo. 1994).

95. *Penny-Feeney*, 773 F. Supp. at 223.

depending upon the circumstances, can all be transparent to infrared radiation.[96] The ability to detect heat from within a structure ranges up to many miles, depending upon the sophistication of the particular imagery.[97] Therefore, the location of individuals, their movements, and the relative temperature of rooms, described in the introductory hypothetical, could be easily discerned with current technology.

B. Penny-Feeney v. United States: Application of the Katz *Test*

Over the last thirty-five years, the *Katz* test has been utilized to resolve many varied and novel clashes between law enforcement and individual privacy rights.[98] Law enforcement's utilization of infrared imaging technology poses yet another unique challenge to the *Katz* test. The Fourth Amendment analysis of infrared imaging began in the summer of 1991, when the case of *Penny-Feeney v. United States*[99] first brought this technology under constitutional scrutiny. The court in *Penny-Feeney* held that the utilization of noninvasive methods to image "waste" or "abandoned" heat from a publicly accessible vantage point did not offend the Fourth Amendment.[100]

1. The Facts of Penny-Feeney v. United States.—In early 1990, an anonymous informant led police to the defendants. The informant described in detail a sophisticated indoor marijuana cultivation system encompassing a number of rooms in the defendant's residence. After speaking to the informant, Officer Char corroborated the details by visiting the location. He then hired a helicopter equipped with a Forward Looking Infrared Device (FLIR). A few hours before dawn, the pilot and two law enforcement officers flew over the defendants' residence at an altitude of 1200-1500 feet. To the naked eye the residence appeared dark, but with the assistance of the FLIR, the walls and certain areas of the garage appeared as bright white. Adjacent similar structures were surveyed for comparison and did not appear in the same color as the defendant's residence. Upon consultation with the pilot, Officer Char concluded the heat signature was consistent with the indoor cultivation of marijuana. Based upon Officer Char's testimony, a search warrant was issued and an extensive indoor marijuana cultivation operation was discovered.[101]

2. Analysis by the Penny-Feeney Court.—The *Penny-Feeney* court first reiterated Justice Harlan's two part *Katz* test: (1) the defendants must have exhibited a subjective expectation of privacy; and (2) society must acknowledge the defendant's expectation of

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96. *See* United States v. Olson, 21 F.3d 847, 848 (8th Cir. 1994) (noting that infrared imaging revealed rafters inside the defendant's home as well as a wall dividing the home into two rooms); *see also* State v. Young, 867 P.2d 593, 595 (Wash. 1994) (noting that infrared imaging has the ability to detect individuals through thin curtains, plywood, or similar material).

97. *See generally* Steele, *supra* note 9.

98. It would be impractical to mention the number of ways in which the *Katz* test has been utilized; as of this writing, references to Katz v. United States, 389 U.S. 347 (1962), in *Shepard's United States Citations* exceed 400 cases. 1.6 SHEPARD'S UNITED STATES CITATIONS 1119-36 (Case ed. 1994).

99. 773 F. Supp. 220 (D. Haw. 1992).

100. *Id.* at 228.

101. *Id.* at 221-23.

privacy as reasonable.[102] The court characterized the heat detected by Officer Char as "heat waste" or "abandoned heat."[103] The court concluded that the defendants did not have an expectation of privacy in the heat because "they voluntarily vented it outside the garage where it could be exposed to the public and in no way [did they] attempt[] to impede its escape or excercise dominion over it."[104] Even though the court concluded that the defendants failed to pass the first part of the *Katz* test, the *Penny-Feeney* court referred to the Supreme Court's holding in *California v. Greenwood*[105] and considered whether society would be willing to accept as reasonable a subjective expectation of privacy in the heat waste.[106]

In *California v. Greenwood*,[107] the Supreme Court held the Fourth Amendment does not prohibit government officials from conducting a warrantless search of trash relinquished for collection. In *Greenwood*, police officers asked the neighborhood trash collector to segregate the trash bags picked up from the defendant's home from the trash of everyone else. The trash collector turned the defendant's trash over to the police and, upon examination, the police discovered incriminating evidence of narcotics use. Based upon this evidence, a search warrant was issued, and the defendant was arrested and convicted. The defendant challenged the warrantless search of his trash, alleging a violation of his Fourth Amendment rights. The Supreme Court concluded the defendants exposed their garbage to the public to such a degree they could have no reasonable expectation of privacy.[108]

The *Penny-Feeney* court explained that the heat waste vented outside of the Feeneys' home was analogous to the garbage placed outside of the respondent's home in *Greenwood*.[109] The court held that "[b]oth cases involve[d] homeowners disposing of waste matter in areas exposed to the public."[110] Given this holding, the *Penny-Feeney* court concluded that "even if the defendants were capable of demonstrating a subjective expectation of privacy in the heat waste, the Supreme Court's holding in *California v. Greenwood*, suggests that such an expectation would not be one that society would be willing to accept as objectively reasonable."[111]

The *Penny-Feeney* court then recognized Supreme Court decisions upholding the

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102. *Id.* at 225 (citing Katz v. United States, 389 U.S. 347, 360-61 (1967) (Harlan, J., concurring)).

103. *Id.*

104. *Id.* at 226.

105. 486 U.S. 35 (1988).

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

107. 486 U.S. 35 (1988).

108. *Id.* at 41.

109. *Penny-Feeney*, 773 F. Supp. at 226. In drawing the analogy, the *Penny-Feeney* court quoted the following language from *Greenwood:*

> 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 members of the public.

Id. (quoting *Greenwood*, 486 U.S. at 40).

110. *Id.*

111. *Id.* (citation omitted).

utilization of nonintrusive extrasensory equipment.[112] Of all the nonintrusive police activities, the court held that the canine sniff was most analogous to infrared imaging.[113] In *United States v. Solis*,[114] the Ninth Circuit Court of Appeals held that utilizing specially trained marijuana sniffing dogs, whose sense of smell is eight times as acute as humans, does not constitute a search under the Fourth Amendment.[115] The court in *Penny-Feeney* reasoned that the use of infrared imaging, like the use of canines in *Solis*, is inoffensive and entails no embarrassment to the defendant. The *Penny-Feeney* court further reasoned that the heat emanations, like the odor in *Solis*, constitute a physical fact indicative of a possible crime.[116]

The *Penny-Feeney* court held that officer Char did no more than aim a *passive* infrared detector from a publicly accessible vantage point and detect waste heat on the exterior of a home. No intimate details of the house were observed and the nonintrusive nature of the instrument caused no embarrassment. Therefore, these activities did not constitute a search under the Fourth Amendment.[117]

IV. ILLEGITIMACY OF THE *PENNY-FEENEY* POSITION

As already illustrated, issues arising under the Fourth Amendment pose complex analytical challenges. Although the debate surrounding the proper format of any analysis continues, recent Supreme Court decisions suggest a type of dual analysis. First, a proper utilization of Justice Harlan's two-part test must be employed to determine if the challenged governmental activity constitutes a search. Second, the Court may then carve out exceptions by balancing the interests of society against the privacy interests of the individual.[118]

A. Infrared Surveillance of the Home Constitutes a Search: Application of the Katz Test

1. Individuals Have a Subjective Expectation of Privacy in Heat Lost From Their Home.—The first stage of analysis is to determine whether subjective expectations of privacy were asserted over the subject matter of the alleged search.

a. Infrared surveillance targets the home.—The Fourth Amendment analysis of

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112. *Id.* The court cited the following cases: United States v. Place, 462 U.S. 696 (1983) (holding canine sniff of luggage is not a search); United States v. Knotts, 460 U.S. 276 (1983) (holding utilization of electronic beeper to track movements of vehicle to a remote cabin is not considered a search); Smith v. Maryland, 442 U.S. 735 (1979) (holding that the use of a "pen register" to record phone numbers dialed from a private residence is not a search).

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

114. 536 F.2d 880 (9th Cir. 1976).

115. *Id.* at 882. "The method used by the officers was inoffensive. There was no embarrassment to or search of the person. The target was a physical fact indicative of possible crime . . . . [T]he use of the dogs was not unreasonable under the circumstances and therefore was not a prohibited search under the Fourth Amendment." *Id.* at 883.

116. *Penny-Feeney*, 773 F. Supp. at 227.

117. *Id.* at 228.

118. *See supra* notes 80-90 and accompanying text.

infrared imaging requires understanding the purposes for which the technology is being used. It is essential to step back and appreciate that law enforcement officials are employing this technology to gain information about what may or may not be occurring inside a home. The remaining discussion of this Note will focus only on that context. While it is acknowledged that this technology has other applications, an exhaustive analysis would encompass significantly different issues and would obscure the focus of this writing.

The security of one's home is a fundamental interest protected by the Fourth Amendment. To appreciate the emphasis the framers put on this liberty interest, one need only look to the language of the Amendment: "The right of the people to be secure in their . . . houses . . . shall not be violated . . . ."[119]

The discussion today is not whether the numbers dialed from our phones have been intercepted,[120] or whether our car has been tracked electronically,[121] or whether our speech has been overheard.[122] While these are serious issues in and of themselves, the following discussion centers around more than a general right to privacy. We need to recognize, as the framers did 200 years ago, the most intimate, private, and sacred moments of our lives take place within our homes. Infrared imaging effectively acquires information about individuals while they are at home, not while they are in public. The analysis of an individual's right to retreat to his home and take solace in the fact that his actions, expressions, and words are not being monitored, demands the highest level of scrutiny.[123]

b. Infrared imaging reveals activities occurring within the home.—A number of courts, in upholding the use of infrared imaging, have sought to establish that it does not invade or expose activities occurring within the home.[124] This fact is heavily relied upon for justification of the technology's legitimacy, however, the abhorrent logic of this justification demands criticism.

If infrared imaging technology does not reveal activities occurring within a person's home then why are governmental officials using the technology? More significantly, why are attorneys wasting time and money defending its use? Do the law enforcement officials have fun looking for heat? Do their attorneys simply enjoy a fight? One can hardly think so. Perhaps it is a question of semantics. No one contends infrared imaging can see through walls as if they do not exist. Conversely, no one can justifiably argue with the fact that infrared imaging provides "visual images of varying clarity that allow the operator to draw . . . conclusions about what is happening on the other side of the house wall."[125] Infrared imaging can determine the interior structure of a dwelling and can even

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119. U.S. CONST. amend. IV.

120. Smith v. Maryland, 442 U.S. 735 (1979).

121. United States v. Knotts, 460 U.S. 276 (1983).

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

123. The attempt to delineate the appropriate degree of scrutiny largely contributes to the turmoil in Fourth Amendment jurisprudence.

124. United States v. Ford, 34 F.3d 992, 996-97 (11th Cir. 1994) (FLIR only describes "conditions within the mobile home in gross detail." The information gained is "neither sensitive nor personal, nor does it reveal the specific activities within the mobile home."); Penny-Feeney v. United States, 773 F. Supp. 220, 228 (D. Haw. 1992) ("No intimate details connected with the use of the home or curtilage were observed . . . .").

125. United States v. Field, 855 F. Supp. 1518, 1525 (W.D. Wis. 1994). *See supra* note 96 and

discern the presence of individuals through materials considered opaque. The only value to law enforcement officials in the heat escaping from a home is what it discloses about potentially illegal activities occurring within the home.[126] Therefore, it is disingenuous for the government to argue that nothing occurring within the home is being revealed. The entire goal of the government's exercise is to determine what is occurring within a particular home. It is disappointing that courts would be fooled by this ridiculous argument.

c. The analogy to trash fails.—The *Penny-Feeney* court's attempt to analogize infrared imaging to searching through trash fails for a number of reasons. The characterization of heat emitted from a house as waste is too simplistic and the assumption, based on *Greenwood*,[127] that society would not recognize any subjective expectation of privacy in that heat is inappropriate.

It is troubling to say that "one voluntarily vents heat waste in the same way that one disposes of garbage."[128] Homeowners certainly do not give the same level of thought to heat escaping from their homes as they do to taking out the trash. Trash removal is a "conscious act that affirmatively demonstrates an abandonment of the contents . . . ."[129] Heat loss happens without any conscious act of the homeowner. It occurs automatically and is unavoidable.[130] Therefore, this unconscious heat loss is not *waste*.[131] Rather, as defined by *Greenwood*, only heat purposefully vented to the outside could be characterized as waste.

Infrared imaging detects all of the heat leaving a home, not just vented heat. It detects differences in room temperatures, floor temperatures, electrical wiring temperatures,[132] and much more.[133] Therefore, if the *Penny-Feeney* court were truly applying the *Greenwood* Court's analysis, the government could permissibly point its FLIR at the back of an air conditioner or venting fan, but it could not point it at any window, door, wall, roof, or chimney. Law enforcement officials would not likely "have much interest in creating thermal images of the back of air conditioners, but only such heat fits within the concept upon which the warrantless search is premised."[134] Therefore, the heat uncontrollably escaping from a home is legally unrelated to trash that is consciously transported curbside.

d. Degree of invasiveness is irrelevant.—The first startling aspect of the *Penny Feeney* decision is the court's emphasis or desire to characterize infrared technology as

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accompanying text, explaining that FLIR can discern the presence of human forms near open windows or behind walls made of plywood or similar materials.

126. State v. Young, 867 P.2d 593, 603 (Wash. 1994).

127. United States v. Greenwood, 486 U.S. 35 (1988).

128. *Young*, 867 P.2d at 602.

129. *Field*, 855 F. Supp. at 1532.

130. *Id.*

131. *Id. See also Young*, 867 P.2d at 603 (holding that unconscious heat loss cannot be analogized to waste).

132. *Young*, 867 P.2d at 595.

133. *See supra* note 96 and accompanying text.

134. *Field*, 855 F. Supp. at 1532.

passive or noninvasive.[135] Any focus on this aspect of an alleged search is absurd, for it echoes the trespass doctrine abandoned by *Katz*. Justice Bradley established over a century ago that it is not "the breaking of [one's] doors and the rummaging of [one's] drawers, that constitutes the offense . . . ."[136]

Passive devices are quite capable of invading an individual's reasonable expectation of privacy. The premier example is *Katz* itself. The microphone in *Katz* was completely passive. Like infrared imaging, it sent no beams or rays into the phone booth. Yet the *Katz* Court went to great lengths to highlight this "passive" technology as capable of violating an individual's Fourth Amendment rights.[137] Similarly, courts have prohibited the government from using high powered telescopes to peer inside peoples' homes,[138] even though these telescopes are completely passive and only collect visible light. Additionally, nonconsensual warrantless wiretaps are prohibited even though they are completely passive and simply collect an electronic signal passing through a wire located outside the home.[139] These decisions demonstrate that an analysis hinging upon the passivity of law enforcement's technique is misguided.

e. Individuals have a subjective expectation of privacy in heat lost from their homes.—"[A] man's home is, for most purposes, a place where he expects privacy . . . ."[140] Infrared imaging targets the home and reveals information connected with intimate activities. The majority of heat detected involuntarily dissipates from the home and can in no way be characterized as waste. Therefore, individuals must be viewed as having subjective expectations of privacy in the heat lost from their homes.

2. Society Views That Subjective Expectation as Reasonable.—By virtue of the above argument, individuals can be viewed as having subjective expectations of privacy in the heat emanating from their homes; whether that expectation is one that society is willing to recognize as reasonable must also be analyzed.

a. Analogy to trash fails once again.—The Court in *Greenwood* conceded that individuals may have a subjective expectation of privacy in their trash but held such an expectation is one that society is not willing to accept as reasonable.[141] The Court cited a number of reasons for reaching this conclusion. First, 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 members of the public."[142] Second, individuals take their trash to the curb "for the express purpose of conveying it to a third

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135. United States v. Penny-Feeney, 773 F. Supp. 220 (D. Haw. 1991) "It is a passive, non-intrusive instrument . . . ." *Id.* at 223. "FLIR . . . did no more than gauge . . . heat." *Id.* at 225. "Time and time again the United States Supreme Court has held that police utilization of extra-sensory, non-intrusive equipment, such as the FLIR . . . does not constitute a search . . . ." *Id.* at 226. "Officer Char did no more than aim a passive infrared instrument at the defendants' house . . . ." *Id.* at 228.

136. Boyd v. United States, 116 U.S. 616, 630 (1886). *See supra* note 36.

137. *See supra* notes 59-75 and accompanying text.

138. *See* United States v. Taborda, 635 F.2d 131 (2nd Cir. 1980) and United States v. Kim, 415 F. Supp. 1252 (D. Haw. 1976).

139. 18 U.S.C. § 2510 (1994).

140. Katz v. United States, 389 U.S. 347, 361 (1967).

141. United States v. Greenwood, 486 U.S. 35, 39 (1988).

142. *Id.* at 40.

party"[143] who is then free to do as she chooses with the trash. The Court concluded that one who deposits garbage "in an area particularly suited for public inspection and . . . for the express purpose of having strangers take it," can have no reasonable expectation of privacy surrounding the items it contains.[144]

Again the analogy of infrared imaging to trash fails for a number of reasons. It is "hardly common knowledge that government officials cruise public streets after dark scanning houses with thermal imagers . . . ."[145] Unlike trash, heat lost from a house is not subject to the risk of animals, children, snoops, and the like. One would certainly not anticipate the public using sophisticated infrared instruments to view one's home the same way one would anticipate the public scrutiny of trash. Put simply, society does not protect privacy interests in trash because everyone knows other people have the opportunity to look through it. Conversely, very few people have the ability to analyze heat emanating from one's home. Therefore, the differences between one's trash and the heat escaping from one's home are such that a comparison is ludicrous.

b. The home is afforded special protection.—Society's protection of privacy interests concerning the home is further established by the Supreme Court's analysis of electronic monitoring devices. In *United States v. Knotts*,[146] the Court upheld law enforcement's utilization of an electronic beeper to allow surveillance of the defendant's automobile.[147] In *Knotts*, law enforcement officials suspected the defendant was illegally manufacturing controlled substances. Based on his unusual purchase of chloroform, a solvent commonly used in the manufacture of illicit drugs, the officers arranged for a drum, with an electronic signaling device inside, to be included in the defendant's next purchase. After the subsequent purchase, the officers used the signal from the beeper to follow the defendant from Minnesota to rural Wisconsin. The beeper was only used to determine the location to which the defendant drove.[148]

The Court held that someone traveling in an automobile does not have a legitimate expectation of privacy in his movement from place to place.[149] Anyone on the street could note the fact that the defendant was traveling over certain roads, at a particular time, in a particular direction, and observe his final destination. The Court noted that a car has "little capacity for escaping public scrutiny. It travels public thoroughfares where both its occupants and its contents are in plain view."[150] The beeper utilized by the government procured no additional information than would have a bystander, and the Fourth Amendment challenge failed for that reason.[151]

One year later, in *United States v. Karo*,[152] the Court dealt with an electronic beeper

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143. *Id.*

144. *Id.* at 40-41 (quoting United States v. Reicherter, 647 F.2d 397, 399 (3d Cir. 1981)).

145. United States v. Field, 855 F. Supp. 1518, 1532 (W.D. Wis. 1994).

146. 460 U.S. 276 (1983).

147. *Id.* at 285.

148. *Id.* at 277-79.

149. *Id.* at 281.

150. *Id.* (quoting Cardwell v. Lewis, 417 U.S. 583 (1974)).

151. *Id.* at 276.

152. 468 U.S. 705 (1984). *Karo* represents the United States Supreme Court's most recent analysis of law enforcement's use of sense enhanced surveillance.

that was taken inside a home. In that case, the Court held that the warrantless monitoring of an electronic beeper while inside a private residence violated the Fourth Amendment.[153] The facts of *Karo* are nearly identical to those of *Knotts*, with the exception that, in *Karo*, the law enforcement officials continued to monitor the device when it had entered several homes. The Court affirmed the fact that while in public there was no protected privacy interest. When the beeper crossed the threshold of a home, however, the continued monitoring constituted a search violating the Fourth Amendment.[154] The Court noted that the device provided information about the interior of the home which was unavailable through unaided visual surveillance of the home's exterior.[155] Therefore, the expectation of privacy one has in one's home will trigger Fourth Amendment protection when the government seeks information about what is occurring within the home that "could not have otherwise [been] obtained without a warrant."[156]

Infrared imaging is at least as intrusive as the beeper in *Karo*. It also provides information about the interior of a home that is unavailable to the naked eye. While the beeper cannot reveal its specific location within the home, infrared imaging has the ability to determine the specific location of heat intimately connected with human activity. Reasonable expectations of privacy in the home, tenaciously defended for two centuries, demand that government's warrantless utilization of infrared imaging stop short of the wall of any home.

c. The expectation of privacy is reasonable.—"The test of legitimacy . . . is whether the government's intrusion infringes upon the personal and societal values protected by the Fourth Amendment."[157] The rationale defeating the analogy to trash establishes the reasonableness of an individual's privacy expectations. People unconsciously relinquish heat to the outdoors and they certainly do not assume that their neighbors have the ability to analyze such heat loss. Individuals cannot be viewed as assuming the risk of this type of surveillance because they have no practical means of preventing it. Law enforcement does not have the right to exploit every risk created by modern life. Therefore, subjective expectations of privacy in heat lost from a home would be recognized as reasonable by society.

3. Law Enforcement's Use of Infrared Imaging Constitutes a Search.—It has been established that the passivity of infrared imaging is not an element of Fourth Amendment analysis. It has also been shown that governmental officials utilize infrared imaging to produce images of a home's interior that would otherwise be protected by its walls.[158] In this way, the government is intruding into the home, an area afforded special protection, and discovering information about what occurs inside. Individuals have reasonable expectations of privacy in the activities occurring within their homes, "a location not open to visual surveillance."[159] "It is this reasonable expectation of privacy in the home that is violated by warrantless infrared surveillance, not the expectation of privacy in 'waste heat'

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153. *Id.* at 714.

154. *Id.* at 721.

155. *Id.*

156. *Id.* at 715.

157. United States v. Oliver, 466 U.S. 170, 182-83 (1984).

158. *See supra* note 96 and accompanying text.

159. *Karo*, 468 U.S. at 716.

as the *Penny-Feeney* court asserts."[160]

B. Individual Rights Outweigh Society's Need for Infrared Surveillance

1. Fourth Amendment: In the Balance.—In facing the myriad of cases before it, the Supreme Court has utilized the *Katz* equation and an accompanying balancing test to reach differing results.[161] In addition, recent cases suggest an increasing reliance on ad hoc balancing.[162] Despite the criticism this ad hoc approach has received,[163] this Note must recognize that the Court has responded to law enforcement's pragmatic needs by incorporating a balancing test into its Fourth Amendment analysis.

2. Law Enforcement: Legitimate Needs for High Technology.—Society's interest in defeating crime is the precise reason the Fourth Amendment, though protective by design, still allows search warrants to be issued. Individuals do not have exclusive protection and our modern society has a "compelling interest in detecting those who would traffic in deadly drugs for personal profit."[164] Without argument, the modern criminal element is more daring and sophisticated than ever. Our society, on the other hand, seems ill-equipped to handle the increasing onslaught.[165] For full effectiveness, law enforcement requires access to the best and latest technology. Infrared imaging technology has proven cost effective as well as successful in detecting indoor marijuana cultivation.[166] Finally, law enforcement only utilizes this technology from publicly

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160. State v. Young, 867 P.2d 593, 603 (Wash. 1994).

161. The Court has occasionally utilized a balancing approach which yielded a reliable bright line rule. For example, warrantless wiretaps have consistently been held unconstitutional. *See* United States v. United States Dist. Court, 407 U.S. 297 (1972); Katz v. United States, 389 U.S. 347 (1967); Berger v. New York, 388 U.S. 41 (1967). *See also* Florida v. Riley, 488 U.S. 445 (1989); Dow Chemical v. United States, 476 U.S. 227 (1986); California v. Ciraolo, 476 U.S. 207 (1986). The Court has yet to require a warrant for aerial surveillance. In other situations, bright line rules have failed to emerge. *Compare* United States v. Knotts, 460 U.S. 276 (1983) (allowing warrantless electronic monitoring of a vehicle on public streets) *with* United States v. Karo, 468 U.S. 705 (1984) (disallowing warrantless use of the same device located within a residence).

162. *See* New Jersey v. T.L.O., 469 U.S. 325, 342 (1985) (permitting the warrantless search of a high school student "when the measures adopted are reasonably related to the objective of the search and are not excessively intrusive"); *see also* Skinner v. Railway Labor Executives' Assoc., 489 U.S. 602 (1989) (permitting warrantless blood and urine tests, "[t]hough some of the privacy interests implicated by the toxicological testing at issue reasonably might be viewed as significant in other contexts . . ."). *Id.* at 628.

163. *See generally* Nadine Strossen, *The Fourth Amendment in the Balance: Accurately Setting the Scales Through the Least Intrusive Analysis*, 63 N.Y.U. L. REV. 1173, 1175-76 (1988) ("Fourth Amendment rights . . . should receive the more certain protection resulting from categorical rules rather than the less certain protection resulting from ad hoc balancing."); Silas J. Wasserstrom & Louts M. Seidman, *The Fourth Amendment as Constitutional Theory*, 77 GEO. L. J. 19 (1988).

164. United States v. Mendenhall, 446 U.S. 544, 561 (1980) (Powell, Burger, & Blackmun, JJ., concurring).

165. Recent passage of the "Crime Bill" demonstrates the congressional view that more prisons and police are the best answer. *See* 42 U.S.C. §§ 13701-14223 (1994).

166. This point is easily demonstrated by law enforcement's increasing use of this technology. *See supra* note 4.

accessible vantage points and gains limited information.

3. Individual Privacy Rights: Demanded By a Free Society.—The Fourth Amendment is a prohibition in that it protects some portion of our individual lives from governmental intrusion. This ideal is a basic tenet of a free society.[167] The facet of the Amendment that protects individual privacy is the most elusive. Privacy values, by their very nature are not quantifiable. There is no consensus in the legal or philosophical literature as to their meaning.[168] They defy definition, but not characterization.

While the Fourth Amendment protects "people, not places,"[169] it does not shield what one willingly exposes to the public.[170] It does, however, protect conversations[171] and the intimacies of life. It encompasses the "home"[172] and the right of every man "to be let alone."[173] It also demands that privacy not be infringed without probable cause and that a warrant be issued by a detached magistrate. The Amendment seeks to protect future citizens from the abuses of the past and ensures a society where individuals can freely express themselves within private contexts.

4. The Analogy to Canine Sniff Fails.—The *Penny-Feeney* court tried to analogize infrared imaging to the canine sniff, an area where the Supreme Court has held the needs of law enforcement outweigh the privacy interest invaded. Relying on *United States v. Solis*,[174] the court compared infrared imaging to the use of dogs trained to detect the odor of narcotics[175] and reasoned that, like a dog sniff, infrared imaging is "inoffensive" and "entail[s] no embarrassment."[176] In addition, the court reasoned that heat emanations, like odors of narcotics, are a physical fact "indicative of a possible crime."[177] Although somewhat similar to the trash analogy, after careful scrutiny, the comparison of infrared imaging to a canine sniff also fails to be convincing.[178]

First, the fact that a method of search is inoffensive or nonembarrassing is not dispositive. As previously discussed, law enforcement need not break down one's doors to violate Fourth Amendment rights.[179] In fact, one of the most disturbing characteristics of infrared imaging is its ability to tracelessly pry into the home. The haunting of sleeping citizens by indiscriminately discerning information about the intimate activities occurring within their homes can only be considered offensive. Reasonable people would be shocked to discover that some courts think otherwise.

Second, the pattern of heat emanating from a home is not indicative of criminal

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167. Camera v. Municipal Court, 387 U.S. 523, 528 (1967).

168. *See generally* Richard B. Parker, *A Definition of Privacy*, 27 RUTGERS L. REV. 275 (1974).

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

170. *Id.*

171. *Id.* at 350.

172. Text of the Amendment expressly names the house. *See supra* note 18.

173. *See* Warren & Brandeis, *supra* note 40, at 193.

174. 536 F.2d 880 (9th Cir. 1976).

175. United States v. Penny-Feeney, 773 F. Supp. 220 (D. Haw. 1991).

176. *Id.* at 227.

177. *Id.*

178. *See, e.g.*, United States v. Field, 855 F. Supp. 1518 (W.D. Wis. 1994); State v. Young, 867 P.2d 593 (Wash. 1994).

179. *See supra* note 36.

activity in the same way that a canine sniff indicates criminal activity. In *United States v. Place*,[180] the Supreme Court upheld the use of a trained dog to sniff luggage in search of contraband. The Court recognized the information obtained by the search is limited. "It does not expose non-contraband items that otherwise would remain hidden from public view. . . . [I]t discloses only the presence or absence of narcotics, a contraband item."[181] In this respect the search of luggage by a trained canine is "sui generis."[182] There is no other investigative procedure so limited in manner and content of information gained.[183]

The information gained by infrared imaging is not so limited, for it cannot distinguish between "contraband heat" and "legal heat."[184] The instrument registers all heat from a residence. Operators are free to draw whatever inference they want from the information gained. Heat could be generated by electronic equipment, fireplaces, saunas, or the cultivation of legal plants. When a trained dog signals the presence of narcotics in a location, there is no doubt that a crime is being committed.[185] That statement cannot be made concerning infrared imaging. The heat detected could have come from any number of legal sources. In addition, "a dog's sense of smell, while more acute than a human's, does not compare to a technology that can turn minute gradations in temperature into video tapes from 1500 feet away."[186] For the mentioned reasons, the Supreme Court's statement that the canine sniff is "sui generis"[187] must be respected.

Even if a canine sniff were viewed as an appropriate analogy, the Supreme Court of Washington, in *State v. Young*,[188] found the reasoning of *United States v. Thomas*[189] more persuasive than that of *Solis*. In *Thomas*, the Second Circuit held that the use of a trained canine to detect the presence of narcotics from outside the defendant's apartment door constituted a search violating the Fourth Amendment.[190] The *Thomas* court highlighted that a private residence was the subject of a search and recognized that the defendant had a "legitimate expectation that the contents of his closed apartment would remain private . . . ."[191] Because the defendant had a "heightened expectation of privacy inside his dwelling, the canine sniff at his door constituted a search" violating the Fourth Amendment.[192] Other courts have also recognized enhanced expectations of privacy when

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180. 462 U.S. 696 (1983).

181. *Id.* at 707.

182. *Id.* "'Sui generis', of its own kind or class, *i.e.*, the *only one* of its kind; peculiar." BLACK'S LAW DICTIONARY 1000 (6th ed. 1991).

183. *Place*, 462 U.S. at 707.

184. United States v. Ishmael, 843 F. Supp. 205, 213 (E.D. Tex. 1994), *rev'd*, 48 F.3d 850 (5th Cir. 1995), *certs. denied*, 116 S. Ct. 74 (1995) *and* 116 S. Ct. 75 (1995).

185. There are very few exceptions, namely the rare medical use of a few select narcotics.

186. *Ishmael*, 843 F. Supp. at 213.

187. *Place*, 462 U.S. at 707; United States v. Cusumano, Nos. 94-8056, 94-8057, 1995 WL 584973 (10th Cir. Oct. 4, 1995).

188. 867 P.2d 593 (Wash. 1994) (en banc).

189. 757 F.2d 1359 (2nd Cir. 1985), *certs. denied*, 474 U.S. 819 (1985) *and* 479 U.S. 818 (1986).

190. *Id.* at 1359.

191. *Id.* at 1367.

192. *Id.*

those expectations concern the home.[193] Infrared imaging, like the canine sniff in *Thomas*, detects information about the happenings inside one's home. One could inappropriately compare infrared imaging to the canine sniff. The result, however, considering the *Thomas* court's prohibition on utilizing the sniff to discern information about the interior of an home, would still be an unconstitutional search.

5. The Balancing.—Law enforcement's need for infrared imaging does not outweigh the intimate privacy interest that it invades. First, the intimate details obtained may chill an individual's free expression;[194] for the home, a uniquely private and historically protected area, is the usual target of these searches. Second, the information obtained is broad and unfocused. Unlike the canine sniff, infrared imaging is not limited to detecting only criminal activity. It exposes the intimate activities occurring within a home, legal and criminal alike. Third, any reliance upon the aerial surveillance cases, *Dow* and *Ciraolo*, to justify infrared surveillance is foolish. These cases deal only with visual surveillance and forewarn about applying their analysis to sensory enhanced searches.[195] Finally, this technology allows law enforcement officers to survey previously unidentified third parties and may encourage inappropriate police conduct.[196] The information gained is neither crucial to the war on drugs[197] nor specific enough to be indicative of criminal activity. Therefore, it cannot overcome the compelling individual privacy interest against which it is pitted.

CONCLUSION

"At the very core [of the Fourth Amendment] stands the right of a [person] to retreat into his own home and there be free from unreasonable governmental intrusion."[198] Infrared imaging reveals intimate activities of the home and is used indiscriminately. In

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193. *See, e.g.,* United States v. Taborda, 635 F.2d 131 (2nd. Cir. 1980) (holding the Fourth Amendment proscribes the use of a telescope by a patrolman only so far as it enhanced his view of the interior of a home); United States v. Kim, 415 F. Supp. 1252 (D. Haw. 1976) (holding the Fourth Amendment protects activities occurring within the home from governmental telescopic surveillance).

194. Justice Harlan, dissenting in *United States v. White*, was disturbed that wide spread monitoring of wireless communication "might well smother that spontaneity--reflected in frivolous, impetuous, sacrilegious, and defiant discourse--that liberates daily life." 401 U.S. 745, 787 (1971) (Harlan, J., dissenting).

195. Dow Chemical v. United States, 476 U.S. 227 (1986).

> Here, EPA was not employing some unique sensory device that, for example, could penetrate the walls of buildings and record conversations in Dow's plants, offices, or laboratories, but rather a conventional, albeit precise, commercial camera commonly used in mapmaking. . . . It may well be, as the Government concedes, that surveillance of private property by using highly sophisticated surveillance equipment not generally available to the public . . . might be constitutionally proscribed absent a warrant.

Id. at 238.

196. *See* Steinberg, *supra* note 79, at 569 (contending that secret surveillance may chill free expression and encourage arbitrary police conduct).

197. Police often utilize other means of unearthing marijuana gardens, for example, excessive electric and water bills are often cited as probable cause for a search warrant. *See supra* note 5.

198. Silverman v. United States, 365 U.S. 505, 511 (1961).

that regard, its utilization resembles the unrestrained search for smuggled goods that brought the Fourth Amendment into being.[199] In addition, it is less discriminating than the canine sniff and its use cannot be analogized to trash. The question of whether infrared imaging is offensive or invasive, while controversial, is irrelevant. For these reasons the warrantless use of infrared imaging to gain information about activities occurring within the protected environment[200] of an individual's home transgresses the prohibitions of the Fourth Amendment.[201]

The basic tenet of the Constitution is that it applies to the innocent and guilty alike.[202] The courts must not be duped into believing that simply because invasive technology can be utilized from a public vantage point that it is outside the Fourth Amendment's umbrella.[203] If unchecked, law enforcement's indiscriminate use of this technology would force individuals to cower in their cellars in search of true privacy.[204] As the long and harried history of Fourth Amendment jurisprudence demonstrates, the tension between individual privacy rights on the one hand and society's ever evolving technological sophistication on the other will never be obviated. The courts must take care that the war on drugs not count individual rights as one of its casualties. "The benefits to our society of safeguarding the right to privacy is such that there is a limit to the use of technological weapons, even in the war on drugs."[205]

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199. *See* LASSON, *supra* note 14.

200. *See supra* notes 145-55 and 186-91.

201. "Crime, even in the privacy of one's own quarters, is, of course, of grave concern to society, and the law allows such crime to be reached upon proper showing." Johnson v. United States, 333 U.S. 10, 14 (1948).

202. Draper v. United States, 358 U.S. 307, 315 (1959) (Douglas, J., dissenting).

203. *See* LANDYNSKI, *supra* note 14, at 44.

> History also makes it clear that the searches to be controlled were . . . those carried out under public authority, in the name of the law, not those made by private persons . . . . The private snooper might certainly be dealt with under statute or common law, but it was not to his actions that a constitutional provision was directed.

See also United States v. Kim, 415 F. Supp 1252, 1256 (D. Haw. 1976) (stating that "[p]eeping Toms abound does not license the government to follow suit").

204. Anthony G. Amsterdam, *Perspectives On The Fourth Amendment*, 58 MINN. L. REV. 349 (1974). Professor Amsterdam predicted this possibility by stating: "[A]nyone can protect himself against surveillance by retiring to the cellar, cloaking all the windows with thick caulking, turning off all the lights and remaining absolutely quiet." *Id.* at 402.

205. United States v. Ishmael, 842 F. Supp. 205, 208 (E.D. Tex. 1994), *rev'd*, 48 F.3d 850 (5th Cir. 1995), *certs. denied*, 116 S. Ct. 74 (1995) *and* 116 S. Ct. 75 (1995).