



THE CASE FOR NIGHT VISION GOGGLES: A LOOK INTO THE PAST AND A PEEK INTO THE FUTURE

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I. INTRODUCTION

Night vision goggles (NVGs) are optical instruments that provide image enhancement in low-light situations. Sold publicly, NVGs are utilized by a host of military and civilian actors for differing purposes. The warrantless use of NVGs is an issue that undergoes periodic, albeit repeated, challenges in various courts. Although most analogous to binoculars, defendants often argue that the use of an NVG is similar to a thermal imaging device. NVGs enhance dim light, allowing the user to see objects in the dark. The dim light (comprised of light particles known as “photons”) enters the NVG and hits a photocathode that converts

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photons into electrons (subatomic particles surrounded by an electric charge).¹ A photomultiplier amplifies the number of electrons travelling to a phosphor screen.² When the electrons collide with the screen, bits of light that significantly brighten the viewed object are generated.³ The green hue emitted is the result of phosphors on the screen, since the human eye can differentiate more shades of green than any other color.⁴

The legality of NVGs when utilized by a law enforcement officer in the course of routine investigatory duties is rarely definitively acceptable or violative. Science is evolving at a rapid rate, preventing a black and white legal analysis of sense-enhancing technologies. Rather, a determination regarding whether the usage of a technology is appropriate depends on the specific facts and circumstances of each case. This article will examine the warrantless use of NVGs by law enforcement personnel. Under the umbrella of Fourth Amendment protections, the article will detail the facts preceding an officer's decision to use NVGs to view an event or structure, the objections to such usage, and each court's determination of its legality. Additionally, this article compares and contrasts NVGs to other sense enhancing technologies such as binoculars, flashlights, and thermal imaging devices, providing the reader with a comprehensive legal overview of the tools currently at the disposal of law enforcement.

II. FOURTH AMENDMENT PROTECTIONS

A thorough understanding of the protections against unreasonable search and seizure afforded by the Fourth Amendment of the United States Constitution is essential to a correct legal analysis of sense enhancing devices utilized by law enforcement. The Fourth Amendment states:

¹ *How Night Vision Works: Everything You've Always Wanted to Know*, SOFRADIR-EC, www.hownightvisionworks.com (last visited Oct. 07, 2014).

² *Id.*

³ *Id.*

⁴ *Id.*

[T]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrant 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.⁵

Searches without a warrant are *presumed* unreasonable, unless an exception to the Fourth Amendment applies.⁶

The seminal U.S. Supreme Court case providing an interpretation of Fourth Amendment privacy protections is *Katz v. United States*.⁷ In *Katz*, the petitioner appealed a conviction in the District Court for the Southern District of California for transmitting wagering information by telephone in violation of federal law.⁸ Over the petitioner's objections, the Government was permitted at trial to include evidence of telephone conversations recorded from outside of a public telephone booth the petitioner utilized to place phone calls in furtherance of his illegal activities.⁹ In affirming the petitioner's conviction, the Court of Appeals rejected the contention that the phone recordings were obtained in violation of the Fourth Amendment, holding "there was no physical entrance into the area occupied by [the petitioner]"¹⁰ (the phone booth itself) and therefore, despite the fact that no warrant authorizing the recordings was obtained, there had been no violation of the Fourth Amendment.

The Supreme Court reversed the decision.¹¹ Emphasizing that the "Fourth Amendment protects people, not places," the Court held the petitioner had a reasonable expectation of privacy when

⁵ U.S. CONST. amend. IV.

⁶ *Brigham City v. Stuart*, 547 U.S. 398, 403 (2006).

⁷ 389 U.S. 347, 348 (1967).

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.* at 348-49.

¹¹ *Id.* at 359

he entered the phone booth and shut the door to place a phone call.¹² “[O]nce it is recognized that the Fourth Amendment protects people — and not simply ‘areas’ — against unreasonable searches and seizures, it becomes clear that the reach of that Amendment cannot turn upon the presence or absence of a physical intrusion into any given enclosure.”¹³ The Supreme Court distinguished its opinion from the appellate court, reasoning that the lack of physical intrusion into the phone booth was not determinative of whether a Fourth Amendment violation occurred; rather, the Court focused on the electronic surveillance and whether it ran afoul of a person’s reasonable expectation of privacy.¹⁴ In his concurrence, Justice Harlan noted that “electronic as well as physical intrusion into a place that is in this sense private may constitute a violation of the Fourth Amendment”¹⁵

One area that is held particularly sacrosanct under the Fourth Amendment is an individual’s home. Key to a Fourth Amendment analysis is the question of whether a person has a reasonable expectation of privacy.¹⁶ It is well established that an individual has a reasonable expectation of privacy within the walls of his or her residence. More frequently litigated are questions regarding an individual’s reasonable expectation of privacy in the area surrounding the structure of one’s home. In *Oliver v. United States*, the U.S. Supreme Court examined a case where narcotics agents received reports of marijuana being grown on a farm.¹⁷ The agents drove to the farm on the defendant’s property, past his home, and arrived at a locked gate with a “No Trespassing” sign attached.¹⁸ The agents exited their vehicle and proceeded onto the

¹² *Id.* at 351-52.

¹³ *Katz*, 389 U.S. at 353.

¹⁴ *Id.* at 350.

¹⁵ *Id.* at 360.

¹⁶ *Oliver v. United States*, 466 U.S. 170, 177 (1984).

¹⁷ *Id.* at 173.

¹⁸ *Id.*

defendant's property along a footpath leading around the gate.¹⁹ After walking approximately one mile from the defendant's residence, the agents located a marijuana field.²⁰ The defendant was arrested and subsequently charged with a violation of federal narcotics law.²¹ The *Oliver* Court distinguished "open fields" from the "curtilage" ("the land immediately surrounding and associated with the home") of a home, stating that an individual has no reasonable expectation of privacy in an open field, as they "do not provide the setting for those intimate activities that the Amendment is intended to shelter from government interference or surveillance."²² Whether law enforcement may enter and observe activities occurring on an individual's property is predicated on whether the property is an open field or the curtilage of a home.²³

In *United States v. Dunn*, the U.S. Supreme Court provided a four-prong test for determining whether land surrounding the home qualifies as "curtilage" and therefore is protected by the Fourth Amendment.²⁴ When determining whether an area of property is so intimately tied to the home that it qualifies for Fourth Amendment protections, the Court in *Dunn* stated law enforcement must evaluate the following factors: (1) the proximity of the area to the home, (2) whether the area is within an enclosure surrounding the home, (3) the nature of the uses to which the area is put, and (4) the steps taken by the resident to protect the area from observation by passersby.²⁵ If the land qualifies as curtilage, it is afforded the same protections as an individual's residence.

Understanding what the Fourth Amendment protects provides a baseline for evaluating the use of sense-enhancing technology by law enforcement. Various questions must be asked to ascertain

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.*

²² *Oliver*, 466 U.S. at 179-80.

²³ *Id.* at 180.

²⁴ 480 U.S. 294, 301 (1987).

²⁵ *Id.*

whether law enforcement's use of technology without a warrant is legally justifiable. Are the officers physically present in a location where there is a reasonable expectation of privacy, thus requiring the issuance of a search warrant to gather evidence? Do certain technologies allow law enforcement to breach an individual's reasonable expectation of privacy and view activities or objects that would otherwise remain hidden, or does the technology simply allow law enforcement to better see what is already in plain view?

III. BINOCULARS AND FLASHLIGHTS

Federal courts have routinely approved the use of vision-enhancing technologies such as binoculars and flashlights by law enforcement officials when used at a location where law enforcement is lawfully present and their use does not violate the Fourth Amendment. In one of the earliest published cases, *United States v. Lee*, a U.S. Coast Guard vessel used a searchlight to view a motorboat and discovered alcohol on board.²⁶ Reasoning that the use of a searchlight to view the deck of the motorboat is comparable to utilization of a field glass or a marine glass, the Court held the use of light to pierce the darkness does not generally transform an observation into a prohibited search under the Fourth Amendment.²⁷

In *United States v. Dunn*, respondent, Ronald Dale Dunn, and a co-defendant, Robert Lyle Carpenter, were convicted by a jury of violating title 21 U.S.C. § 846 for conspiring to manufacture phenylacetone and amphetamine and possessing amphetamine with the intent to distribute.²⁸ Suspicion originally surrounded co-defendant Carpenter when Drug Enforcement Administration (DEA) agents discovered he purchased large amounts of chemicals utilized in the manufacture of phenylacetone and amphetamine.²⁹ DEA agents obtained warrants from a Texas state judge

²⁶ 274 U.S. 559, 561 (1927).

²⁷ *Id.* at 563.

²⁸ *Dunn*, 480 U.S. at 296.

²⁹ *Id.*

authorizing the installation of miniature electronic transmitter tracking devices, or “beepers,” in drug producing goods ordered by Carpenter.³⁰ Specifically, “beepers” were installed to track the movements of a drum of acetic anhydride, an electric hot plate stirrer, and a container holding phenylacetic acid.³¹ The agents were able to track the movement of the container to a ranch owned by respondent Dunn; the ranch encompassed approximately 198 acres and was completely encircled by a perimeter fence, as well as numerous interior fences.³² Accompanied by officers from the Houston Police Department, DEA agents made a warrantless entry onto the defendant’s property on November 5, 1980.³³ The officers and agents proceeded to examine a barn located on the property, using flashlights to observe through windows what was believed to be a phenylacetone laboratory inside the barn.³⁴ On November 6, 1980, a federal magistrate judge issued a warrant authorizing a search of the defendant’s ranch.³⁵ Pursuant to the execution of the warrant on November 8, 1980, officers arrested the defendant and seized chemicals, equipment, and multiple bags of amphetamines.³⁶

Respondent Dunn filed a motion to suppress the evidence gathered at his residence, arguing that the barn lay within the curtilage of his home and the officer’s original viewing of the contents of the barn violated his Fourth Amendment rights.³⁷ However, the district court disagreed, and Dunn was convicted.³⁸ The Court of Appeals for the Fifth Circuit reversed the conviction holding that the search warrant issued by the federal magistrate

³⁰ *Id.*

³¹ *Id.*

³² *Id.*

³³ *Id.*

³⁴ *Dunn*, 480 U.S. at 298.

³⁵ *Id.*

³⁶ *Id.* at 298-99.

³⁷ *Id.* at 299.

³⁸ *Id.*

judge was based on information obtained during the officers' unlawful, warrantless entry onto the defendant's property; therefore, all evidence seized pursuant to the warrant should be suppressed.³⁹ The Supreme Court reversed the Fifth Circuit's findings, holding that the barn was not within the curtilage of the respondent's property, officers lawfully viewed the interior of defendant's barn, and when issuing the search warrant, the federal magistrate judge properly considered the officers' observations.⁴⁰ Further, the Court touched upon the use of flashlights to view the interior contents of the barn, relying on the plurality opinion stated in *Texas v. Brown*.⁴¹ In *Brown*, the Court noted it is "beyond dispute" that the action of a police officer in shining his flashlight to illuminate the interior of a car, without probable cause, to search the car while manning a driver's license checkpoint "trenched upon no right secured . . . by the Fourth Amendment."⁴² Extending the ruling to the instant case, the *Dunn* Court held "the officers' use of the beam of a flashlight, directed through the essentially open front of respondent's barn, did not transform their observations into an unreasonable search within the meaning of the Fourth Amendment."⁴³

Courts have consistently held that a police officer does not conduct a protected search under the Fourth Amendment when the officer observes objects in plain view, from a location where the officer has a legal right to be, and utilizes a flashlight to illuminate the area where an object is located.⁴⁴ However, certain courts have

³⁹ *Id.* at 299.

⁴⁰ *Dunn*, 480 U.S. at 305.

⁴¹ *Texas v. Brown*, 460 U.S. 730, 732 (1983).

⁴² *Id.* at 739-40.

⁴³ *Dunn*, 480 U.S. at 305.

⁴⁴ See *United States v. Smith*, 456 F. App'x 200, 208 (4th Cir. 2011); *United States v. Wright*, 449 F.2d 1355, 1357 (D.C. Cir. 1971) (holding that no search occurred where an officer shined flashlight into garage through eight-inch slit); *People v. Glick*, 250 P.3d 578, 584-85 (Colo. 2011) (holding that police officers' use of a flashlight to illuminate defendant's residence did not constitute a search, where officers approached defendant's home for the purpose of investigating a telephone call for emergency assistance, officers were lawfully on defendant's front doorstep, defendant left door "wide open," it was very early in the morning, officers used their flashlights to illuminate the area, and officers observed in plain view

limited the use of flashlights if law enforcement takes extraordinary measures to facilitate a viewing as part of a probing examination and not merely an observation of an object or activity in open view.⁴⁵

In *United States v. Smith*, the Fourth Circuit held that a law enforcement agent did not conduct a search of a tractor trailer, and thus avoided violating Fourth Amendment protections against unreasonable searches and seizures, when the agent stood outside of the trailer and pointed his flashlight into an open gap in the rubber stripping, exposing illegal liquor jugs inside the conveyance.⁴⁶ Federal courts utilized the same analysis with respect to binoculars, holding that an officer's use of binoculars to magnify an object or occurrence, from a location where the officer is authorized to be, does not constitute a search under the Fourth Amendment.⁴⁷ The court in *United States v. Grimes* examined circumstances where an investigator observed, through binoculars, a known liquor violator place two large cardboard boxes, each containing six gallons of untaxed whiskey, into an automobile.⁴⁸ The investigator was located in an adjacent field when the illicit activity was viewed.⁴⁹ The U.S. court of appeals stated the special

drug paraphernalia on the table inside the home); *State v. Harris*, No. COA11-14, 2011 N.C. App. LEXIS 2301, at *7 (N.C. Ct. App. Nov. 1, 2011) (holding that defendant opened the door to police and engaged in a discussion with the officers. The officers shined their flashlights through the open front door while standing outside of the house. Officers were lawfully at the residence investigating a dog biting incident and used their flashlights for safety when the resident turned off the lights. No search invoking the Fourth Amendment occurred).

⁴⁵ See *Raettig v. State*, 406 So. 2d 1273, 1274, 1278 (Fla. Dist. Ct. App. 1981) (holding that an unlawful search was conducted when a police officer knelt on a roadway and shined a flashlight into a one-half inch wide "crack between the truck bed and the base of the camper top"); *State v. Tarantino*, 368 S.E.2d 588, 592 (N.C. 1988) (holding that a defendant's legitimate expectation of privacy was infringed when an officer bent over and peeked through a narrow crack in the wall of a closed store).

⁴⁶ *Smith*, 456 F. App'x at 208.

⁴⁷ See generally *U.S. v. Lacey*, 669 F.2d 46 (2d Cir. 1982), cert. denied, 459 U.S. 854 (1982).

⁴⁸ *United States v. Grimes*, 426 F.2d 706, 708 (5th Cir. 1970).

⁴⁹ *Id.*

investigator's use of binoculars and subsequent observation did not constitute an illegal search under the Fourth Amendment.⁵⁰

When an officer is lawfully present in an area, the use of binoculars and flashlights to enhance an officer's view and gather intelligence does not violate the Fourth Amendment's protections against unreasonable searches. Binoculars and flashlights do not allow law enforcement to view something previously hidden, blocked or protected; rather, both tools allow law enforcement to enhance their already existing view of an event or object. It is also noteworthy that binoculars and flashlights are tools readily available to the general public.

Technology has advanced beyond the capability of binoculars and flashlights, affording law enforcement with more sophisticated products to assist in surveillance.⁵¹ Two such advances are thermal imaging devices and NVGs. A number of courts have analyzed the warrantless use of thermal imaging devices and NVGs by law enforcement under the Fourth Amendment. As the following legal analysis will show, NVGs are most closely analogous to binoculars in use, technical capabilities, availability, and legal consequences.

IV. THERMAL IMAGING DEVICES

Kyllo v. United States was a pivotal U.S. Supreme Court case regarding vision-augmenting devices.⁵² In *Kyllo*, a federal agent

⁵⁰ *Id.*

⁵¹ For a discussion of the Fourth Amendment implications of aerial surveillance, see *Dow Chem. Co. v. United States*, 476 U.S. 227, 229-39 (1986). Dow Chemical refused the Environmental Protection Agency's (EPA) request for an on-sight inspection of its facility. *Id.* at 229. Subsequently, the EPA employed an aerial photographer, who used a standard aerial-mapping camera to take photographs of the facility from airspace. *Id.* Upon discovering the aerial activity, Dow Chemical brought suit, alleging the EPA violated the Fourth Amendment. *Id.* at 230. The district court granted summary judgment for Dow Chemical, but the court of appeals reversed. *Id.* The Supreme Court held the use of aerial observation and photography was within the EPA's authority and that their warrantless taking of aerial photographs of the facility from an aircraft lawfully in public airspace was not a search prohibited by the Fourth Amendment. *Id.* at 234. Usage of a high-powered camera in over-flight surveillance may become more common as drone capabilities expand.

⁵² 533 U.S. 27 (2001).

became suspicious that marijuana was growing in petitioner Danny Kyllo's home.⁵³ Indoor cultivation of marijuana typically requires high intensity lamps.⁵⁴ The agent used a thermal imaging device to determine if the level of heat emanating from the petitioner's home was consistent with heat levels produced by high intensity heat lamps.⁵⁵ The agent conducted the warrantless scan of the home from his vehicle, which was parked across the street.⁵⁶ The scan indicated that certain portions of the petitioner's home were relatively hot and the home itself was "substantially warmer" than neighboring homes in the area.⁵⁷ Based on the data provided by the thermal imaging device, as well as tips from confidential informants and utility bills, a federal magistrate judge issued a warrant for the search of the petitioner's home.⁵⁸ Pursuant to the execution of the search warrant, the agents found an indoor marijuana growing operation consisting of more than 100 plants.⁵⁹

In its decision, the Court affirmed the lawfulness of visual surveillance of a home, stating that "[t]he Fourth Amendment protection of the home has never been extended to require law enforcement officers to shield their eyes when passing by a home on public thoroughfares."⁶⁰ However, the majority opinion distinguished the use of a thermal imaging device from "naked-eye" surveillance of a home.⁶¹ The Court held that the use of the thermal imager, directed at a residence, was a search subject to the protections of the Fourth Amendment.⁶² The use of the thermal

⁵³ *Id.* at 29.

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ *Id.* at 30.

⁵⁸ *Kyllo*, 553 U.S. at 30.

⁵⁹ *Id.*

⁶⁰ *Id.* at 32 (quoting *California v. Ciraolo*, 476 U.S. 207, 213 (1986)).

⁶¹ *Id.* at 33.

⁶² *Id.*

imaging device provided information regarding the interior of the home that agents could not have otherwise discovered without physically entering into the home.⁶³ Furthermore, the Court relied on the fact that thermal imaging devices were not available to the general public, so an expectation that they would not be commonly used was reasonable.⁶⁴ Delivering the Court's opinion, Justice Scalia concluded that: "[w]here, as here, the Government uses a device that is not in general public use, to explore details of the home that would previously have been unknowable without physical intrusion, the surveillance is a 'search' and is presumptively unreasonable without a warrant."⁶⁵

V. NIGHT VISION GOGGLES

There is a dearth of reported decisions applying the Fourth Amendment to the use of NVGs. Early legal opinions considered the use of "night scopes" or "startrons," technology that evolved into present-day NVGs.⁶⁶ The court in *Commonwealth v. Williams* noted that evidence obtained by use of a "device that 'sees' through darkness" need not always be suppressed.⁶⁷ However, it nonetheless concluded that the warrantless use of night-scope technology for a nine-day period to observe a third floor private apartment frequented by persons other than those sought by the police violated the Fourth Amendment.⁶⁸ The court

⁶³ *Id.* at 34.

⁶⁴ *Kyllo*, 533 U.S. at 34.

⁶⁵ *Id.* at 40.

⁶⁶ See, e.g., *Newberry v. State*, 421 So. 2d 546 (Fla. Dist. Ct. App. 1982), *appeal dismissed*, 426 So. 2d 27 (Fla. 1983) (holding the use of a night-scope to aid surveillance of criminal activities in rear yard was not a search); *State v. Wacker*, 856 P.2d 1029 (Or. 1993) (holding a police officer's use of a night-scope to look into a car parked in the corner of a public parking, is not a search subject to Fourth Amendment protections); *State v. Cannon*, 634 S.W.2d 648 (Tenn. Crim. App. 1982) (holding no search occurred when police used a night-scope to observe activities occurring on the outside of the defendant's dwelling).

⁶⁷ 431 A.2d 964, 966 (Pa. 1981).

⁶⁸ *Id.*

found that the defendant's failure to use curtains or blinds to shield the inside of his apartment did not eliminate his reasonable expectation of privacy in activities viewable through a third-floor window.⁶⁹

*People v. Katz*⁷⁰ was one of the first cases to consider the use of present-day NVGs by law enforcement in light of the ruling in *Kyllo*. In *Katz*, officers entered onto the grounds of the defendant's properties twice without a search warrant.⁷¹ Using NVGs, the officer observed an intense bright light emanating from cracks in window coverings.⁷² These observations, along with additional information (data indicating above average power usage for the residence, land contract payments for the property paid with money orders, and sporadic presence of individuals at the property) supported the issuance of a search warrant for the property.⁷³ While executing the warrant, officers discovered an indoor marijuana grow operation.⁷⁴ The Michigan Court of Appeals distinguished the use here of NVG technology from the thermal imaging technology used in *Kyllo*.⁷⁵ Here, the officer did not use the NVGs to measure heat emanating from the house.⁷⁶ Rather, the officer "simply used the night vision binoculars to perceive, or to enhance his perception of, that light."⁷⁷ The court went further in highlighting the factual differences:

Unlike the agents' use of the Thermovision device in *Kyllo*, Officer Woods did not use the night vision

⁶⁹ *Id.*

⁷⁰ No. 224477, 2001 WL 1012114 (Mich. Ct. App. Sept. 4, 2001) (per curiam), *appeal denied*, 640 N.W.2d 877 (Mich. 2002).

⁷¹ *Id.* at *1.

⁷² *Id.*

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ *Id.* at *2.

⁷⁶ *Katz*, 2001 WL 1012114, at *2.

⁷⁷ *Id.* at *6.

binoculars to compare various areas of the house with other houses. Nor did the binoculars give him any information about the relative intensity of the light emanating from different areas in the house. While the night vision binoculars may have enhanced Officer Woods' visual surveillance, it was still simply visual surveillance.⁷⁸

In *Baldi v. Amadon*, a New Hampshire Department of Fish and Game conservation officer utilized a night scope to conduct surveillance of plaintiff Baldi's property on four separate occasions.⁷⁹ The surveillance was conducted from his neighbor's land, approximately 150 yards from the plaintiff's house.⁸⁰ The plaintiff alleged the officer's usage of NVGs to observe his property and residence violated his Fourth Amendment rights.⁸¹ The court found the plaintiff failed to produce any evidence that the officer looked inside his residence with the NVGs.⁸² Furthermore, the plaintiff did not substantiate his claim that the use of the NVGs allowed the officer "to see something inside that he could not have seen simply by looking from a point that did not involve a physical intrusion into a constitutionally protected area."⁸³ The court determined that the officer's use of NVGs from a neighbor's property, to observe the property and the exterior of the plaintiff's home, did not constitute a search under the Fourth Amendment, as all of the details obtained with the NVGs could have been obtained without the use of such a device during daylight hours.⁸⁴

⁷⁸ *Id.*

⁷⁹ No. Civ. 02-313-M, 2004 WL 725618, at *1 (D.N.H. Apr. 5, 2004).

⁸⁰ *Id.* at *6.

⁸¹ *Id.*

⁸² *Id.*

⁸³ *Id.* at *2.

⁸⁴ *Id.* at *4.

The following year, the court in *United States v. Dellas* rendered a published opinion on the use of NVGs.⁸⁵ In May 2003, a local resident informed the police that diesel fuel was stored on the defendant's property and expressed her concern regarding its effect on the environment.⁸⁶ Additionally, the informant indicated she walked onto the property and observed a 70-kilowatt diesel generator supplying power to an indoor marijuana growing operation.⁸⁷ Several weeks later, deputies travelled to the property and using NVGs, observed an "extremely bright light" coming from the structure where the informant stated marijuana was grown.⁸⁸ In June 2003, a search warrant was issued for the property, partially based on the information obtained when the officers viewed the property through the NVGs.⁸⁹ Defendant Timothy Dellas claimed that he was the caretaker of the property, which was utilized as a marijuana collective.⁹⁰ Pursuant to the search, officers seized 2,412 marijuana plants and 21 pounds of packaged marijuana.⁹¹ In a separate building on the parcel of land, officers found 1,651 marijuana plants, a diesel generator, high intensity grow lights, and miscellaneous equipment typically used in an indoor marijuana grow operation.⁹²

The defendant moved to suppress the evidence from the warrantless search, claiming in part that the use of the NVGs violated his reasonable expectation of privacy at the residence.⁹³ The court examined the *Dunn* factors to assess whether or not the defendant had a personal, legitimate expectation of privacy in the

⁸⁵ 355 F. Supp. 2d 1095 (N.D. Cal. 2005), *aff'd*, 267 F. App'x 573 (9th Cir. 2008).

⁸⁶ *Id.* at 1098.

⁸⁷ *Id.*

⁸⁸ *Id.* at 1098-99.

⁸⁹ *Id.* at 1099.

⁹⁰ *Id.* at 1097-98.

⁹¹ *Dellas*, 355 F. Supp. 2d at 1099.

⁹² *Id.*

⁹³ *Id.* at 1100.

area searched.⁹⁴ Applying previous case law, the court limited the zone of privacy to the curtilage: “the land immediately surrounding and associated with the home.”⁹⁵ The court found the officers’ search was beyond the curtilage and in “open fields,” which may be entered without Fourth Amendment constraints.⁹⁶

Conceding that the officers were beyond the curtilage, the defendant subsequently argued the utilization of the NVGs violated the Fourth Amendment.⁹⁷ Unlike the officers in *Kyllo*, the officers in *Dellas* utilized NVGs to conduct surveillance of a non-residential building concealing a marijuana growing operation, not a home or structure functioning as a personal residence.⁹⁸ Consequently, the holding in *Dellas* hinged on the diminished expectation of privacy in the property’s commercial character compared with the private residence in *Kyllo*, which Justice Scalia viewed as subject to a bright-line standard of privacy expectations.⁹⁹ Additionally, the *Dellas* court distinguished the technical capabilities of thermal imaging devices from NVGs, noting that unlike a thermal imaging device, the NVG merely amplifies “ambient light to allow the wearer to see in relative darkness.”¹⁰⁰ Accordingly, *Kyllo* is not necessarily applicable to surveillance employing NVGs.¹⁰¹

The next case to examine the constitutionality of NVGs addressed the use of NVGs in an alien smuggling investigation. In *United States v. Vela*, a Border Patrol agent pursued a vehicle on an interstate.¹⁰² While viewing the vehicle through NVGs, the

⁹⁴ *Id.* at 1102-07.

⁹⁵ *Id.* at 1101.

⁹⁶ *Dellas*, 355 F. Supp. 2d at 1106.

⁹⁷ *Id.* at 1107.

⁹⁸ *Id.* at 1108.

⁹⁹ *Id.*

¹⁰⁰ *Id.* at 1107.

¹⁰¹ *Id.* (citing *Baldi v. Amadon*, No. Civ. 02-313-M, 2004 WL 725618, at *3 (D.N.H. Apr. 5, 2004); *People v. Katz*, No. 224477, 2001 WL 1012114, at *2 n.4 (Mich. Ct. App. Sept. 4, 2001)).

¹⁰² 486 F. Supp. 2d 587, 588-89 (W.D. Tex. 2005).

agent noticed a “bulge” in the back seat of the vehicle, which he believed to be a passenger attempting to conceal himself.¹⁰³ Based on this observation, and knowledge that alien smuggling was prevalent on the interstate travelled by the vehicle, the agent executed a traffic stop.¹⁰⁴ When the vehicle pulled over, the passenger in the front seat exited and attempted to flee.¹⁰⁵ After the apprehension, the agent discovered four undocumented aliens hiding in the car.¹⁰⁶

Citing *Kyllo*, the defendant claimed the agent’s observations with the NVGs constituted an impermissible “search” in violation of the Fourth Amendment.¹⁰⁷ The defense counsel suggested a greater expectation of privacy exists when “traveling in the dark.”¹⁰⁸ The court disagreed and concluded that NVGs do not intrude into constitutionally protected space.¹⁰⁹ The *Vela* court distinguished the facts of the case from those in *Kyllo*, noting the agent observed a vehicle operating on a heavily trafficked interstate in public view, not a home where there is an established expectation of privacy.¹¹⁰

The court also distinguished the technical capabilities of NVGs from thermal imaging and remarked the goggles merely “amplify light” and are widely available for public purchase.¹¹¹ The court likened the NVGs to a flashlight or binoculars and stated that the goggles are used to see something that is already exposed to public

¹⁰³ *Id.* at 589.

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ *Vela*, 486 F. Supp. 2d at 590 n.2 (citing *United States v. Ward*, 546 F. Supp. 300, 310 (W.D. Ark. 1982), *aff’d in part, rev’d in part*, 703 F.2d 1058 (8th Cir. 1983)).

¹⁰⁹ *Id.* at 590.

¹¹⁰ *Id.* at 589-90. “There is a clear distinction between the expectation of privacy behind the walls of one’s home and the expectation of privacy behind the windows of a vehicle.” *Id.* at 589 (internal citations and quotations omitted).

¹¹¹ *Id.* at 590.

view.¹¹² “This type of technology is no more ‘intrusive’ than binoculars or flashlights, and federal courts have routinely approved the use of binoculars and flashlights by law enforcement officials.”¹¹³ Relying on judicial precedent, the *Vela* court concluded the agent’s use of NVGs under these circumstances was not a search protected by the Fourth Amendment.¹¹⁴

In the most recent published challenge to the warrantless use of NVGs, Richard Lieng appealed his conviction for felony cultivation of marijuana, and Tony Lieng appealed his conviction for felony cultivation of marijuana and felony possession of marijuana for sale.¹¹⁵ In the early morning hours of March 27, 2008, investigators on foot entered a driveway shared by several residences and approached a metal building.¹¹⁶ Electric fans were heard running inside the building and the odor of marijuana emanated from the structure.¹¹⁷ The building was not protected by a locked gate or fence, and the officers did not observe any signage indicating trespassing was prohibited.¹¹⁸ Passing the first building, the officers continued up the driveway to a residence.¹¹⁹ An officer heard additional fan noise, detected the smell of marijuana, and noticed light emanating from within the attached garage.¹²⁰ The officers made two subsequent visits to the property in the following weeks and made similar observations.¹²¹ On these occasions, the officers utilized NVGs to enhance their view of the

¹¹² *Vela*, 486 F. Supp. 2d at 590.

¹¹³ *Id.* at 590 (internal citations omitted).

¹¹⁴ *Id.*

¹¹⁵ *People v. Lieng*, 119 Cal. Rptr. 3d 200, 203 (Ct. App. 2010).

¹¹⁶ *Id.* at 204.

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ *Lieng*, 119 Cal. Rptr. 3d at 206.

property and structure.¹²² Thereafter, the officers secured a warrant to search the property.¹²³

The appellants relied on *Kyllo* to assert that the utilization of the NVGs violated their Fourth Amendment rights.¹²⁴ The court disagreed, noting that unlike a thermal imaging device, NVGs are widely available and the respective devices have “significant technological differences.”¹²⁵ The *Lieng* court found that the NVGs do not have the detection capability to penetrate walls or make any observations that would otherwise require physical intrusion.¹²⁶ Analogous to binoculars and flashlights, NVG capability is limited to amplifying ambient light, enabling a user to make observations in conditions which would otherwise be too dark for the naked eye.¹²⁷ NVGs are incapable of detecting or revealing anything within a building (behind closed doors). Consequently, their usage does not expose what is otherwise private and, therefore, does not constitute a search in violation of the Fourth Amendment.

VI. CONCLUSION

NVGs were once limited in availability to military and law enforcement operations. However, technological advances and public demand spurred the economical mass production of NVGs. Continuing advances may soon enable the same night vision enhancing capabilities in cell phones, cameras, eyeglasses, and car windshields.¹²⁸ The potential prevalence of night vision technology, embedded into a variety of devices, will likely raise questions about the legal limits imposed by the Fourth

¹²² *Id.*

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ *Id.* at 211.

¹²⁶ *Id.*

¹²⁷ *Lieng*, 119 Cal. Rptr. 3d at 211.

¹²⁸ See Eric Bland, *Night Vision Coming Soon to Cell Phones, Eyeglasses*, DISCOVERY NEWS (Apr. 26, 2010, 3:00 AM), <http://news.discovery.com/tech/night-vision-cell-phone-eyeglasses.html>.

Amendment on technology. As night vision devices become more widely available, and their capabilities advance to the point of being able to detect activities within a residence or structure, courts will be faced with re-analyzing the constitutional limits on sense-enhancing technology.¹²⁹ Although the court rulings in *Vela* and *Dellas* clearly distinguish thermal imaging devices from NVGs, the opinions are limited to specific fact patterns and do not explicitly authorize the constitutionality of warrantless searches assisted by NVGs.¹³⁰ While state and federal case law proffers some indication that NVGs may be permissible as sense-enhancing surveillance tools when lawfully used by officers, changing fact patterns may result in contrary case law. Should NVG technology be deployed over a long period of time or be used without accompanying routine visual surveillance, the determination of whether such use infringes upon a reasonable expectation of privacy may change.

Public policy may influence the future of warrantless use of NVGs. For example, in early June 2005, Maryland State Troopers conducted a three-hour test for a pilot program using NVGs for traffic enforcement.¹³¹ The troopers were testing the effectiveness of enforcing Maryland's seat belt law after dark.¹³² According to news reports, a local state police barracks commander borrowed NVGs from a military source for an evening seat belt check; during this time period, 111 citations for seatbelt violations were issued.¹³³

¹²⁹ See, e.g., Kate Taylor, *MIT Radar Gives Real-Time Video Through Concrete Walls*, TG DAILY (Oct. 19, 2011, 5:31 AM), <http://www.tgdaily.com/general-sciences-features/59134-mit-radar-gives-real-time-video> (MIT researchers recently developed a device which provides real-time video of movements behind a solid wall up to 60 feet away).

¹³⁰ See *United States v. Vela*, 486 F. Supp. 2d 587 (W.D. Tex. 2005); *United States v. Dellas*, 355 F. Supp. 2d 1095 (N.D. Cal. 2005), *aff'd*, 267 F. App'x 573 (9th Cir. 2008).

¹³¹ See Press Release, Md. Office of the Gov., Gov. Ehrlich Ends Use of Night Vision Goggles (June 6, 2005), available at <http://msa.maryland.gov/megafile/msa/speccol/sc5300/sc5339/000113/001000/001017/unrestricted/20052289e.html>.

¹³² *Id.*

¹³³ See Andrew A. Green, *Governor Drops Curtain on Night Sight Experiment*, BALT. SUN, June 7, 2005, http://articles.baltimoresun.com/2005-06-07/news/0506070155_1_seat-belts-belt-laws-safety-belt.

Within a week, former Maryland Governor Robert Erlich ordered the state police to discontinue the use of NVGs for seat belt enforcement.¹³⁴ Once he learned of the operation, the former Governor quickly stated NVGs may not be subsequently used for the purpose of enforcing seat belt regulations after dark.¹³⁵ Previously, former Governor Ehrlich stated his objection to using cameras to monitor citizens “in the absence of extraordinary circumstances.”¹³⁶ A spokesperson for the Governor opined the “Governor feels the police, not technology, should enforce our safety belt laws.”¹³⁷

Provided a law enforcement officer is in a location where he or she has a legal right to be, the warrantless use of NVGs does not violate the Fourth Amendment. In current form, NVGs cannot pierce the physical zone where an individual possesses a reasonable expectation of privacy. If an officer infringes upon protected space (such as entering a person’s property without a warrant or a judicially recognized, justifiable reason), his presence and any evidence he gathers is likely considered prohibited by the Fourth Amendment. The probable cause requirements and the Fourth Amendment restrictions on a warrantless search are not expanded or otherwise modified by the use of NVGs. Technologically speaking, NVGs are simply visual enhancers. NVGs allow an officer to see in the dark what his eyes could otherwise see in broad daylight. Keys to an analysis of the legality of NVG usage are the specific circumstances surrounding the officer’s presence in a location and the facts surrounding the investigation of an alleged wrongdoer. Accordingly, it is the location and circumstances from which a NVG is deployed, not strictly the mere use of the NVG, that triggers a Fourth Amendment examination.

As with all Fourth Amendment challenges, the continued legality of warrantless use of NVGs will depend on the unique factual circumstances surrounding usage and the degree of intrusiveness resulting from the technological capabilities. As

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ *Id.*

¹³⁷ *Id.*

increasingly sophisticated technologies enhance law enforcement surveillance capabilities, courts will continue to confront the issue of intrusion into the privacy rights protected by the Fourth Amendment.