
MIGHTY MORPHIN' POWER RANGE-R: THE INTERSECTION
OF THE FOURTH AMENDMENT AND EVOLVING
POLICE TECHNOLOGY

BRITTANY A. PUCKETT*

“[O]ur law holds the property of every man so sacred, that no man can set his foot upon his neighbour’s close without his leave; if he does he is a trespasser, though he does no damage at all; if he will tread upon his neighbour’s ground, he must justify it by law.”¹

–Lord Camden

INTRODUCTION

Often in Fourth Amendment jurisprudence, there are competing contentions among police officers, who are “engaged in the . . . competitive enterprise of ferreting out crime,”² and judges, who assert that, “When the right of privacy must reasonably yield to the right of search is, as a rule, to be decided by a judicial officer, not by a policeman or government enforcement agent.”³ The government’s use of RANGE-R, “a handheld sensor” capable of detecting whether there is a moving, breathing human inside of a home or building,⁴ perfectly exemplifies this dichotomy.

*J.D. Candidate, Class of 2016, Elon University School of Law. I would like to thank Professor Michael L. Rich for serving as my mentor throughout law school and for his guidance in writing this Note.

¹ *United States v. Jones*, 565 U.S. ___, ___, 132 S. Ct. 945, 949 (2012) (quoting *Entick v. Carrington*, 95 Eng. Rep. 807, 817 (C.P. 1765)).

² *Johnson v. United States*, 333 U.S. 10, 14 (1948).

³ *Id.*

⁴ *RANGE-R Theory of Operation*, RANGE-R THROUGH THE WALL RADAR, <http://www.range-r.com/tech/theory.htm> (last visited Apr. 2, 2015).

On the one hand, police allege that this technology “is critical for keeping officers safe.”⁵ On the other hand, the United States Court of Appeals for the Tenth Circuit avers, “[T]he government’s warrantless use of such a powerful tool to search inside homes poses grave Fourth Amendment questions.”⁶ Does the use of this device pose such questions because the Supreme Court already decided this issue in *Kyllo v. United States* when it held that the warrantless use of a thermal imaging device violated the Fourth Amendment?⁷ This is one of the questions that this Note seeks to answer.

First, Part I will describe the RANGE-R device and its capabilities. Part II will discuss generally the protections provided by the Fourth Amendment. Next, Part III will discuss how the public was made aware of the government’s use of RANGE-R. Parts IV and V will illustrate the two cases that are compared in this Note: *United States v. Denson* and *Kyllo v. United States*. Part VI will then consider whether the use of RANGE-R technology comports with the Court’s holding in *Kyllo*. Finally, Part VII will examine whether the use of the RANGE-R device could have resulted in the suppression of evidence in the case of Steven Denson.

PART I: WHAT IS RANGE-R TECHNOLOGY?

RANGE-R is a “through the wall radar” that is capable of detecting people inside of buildings and other structures, such as homes.⁸ The handheld sensor weighs less than one and a half pounds and is held against a wall much like a stud finder.⁹ In order to power the device on, the user simply presses two buttons.¹⁰

Then, using Doppler Radar, the RANGE-R sends a radio frequency signal through the wall, which strikes targets.¹¹ If the target is moving, then the frequency of the signal changes.¹² Through signal

⁵ Brad Heath, *New Police Radars Can ‘See’ Inside Homes*, USA TODAY (Jan. 20, 2015, 1:27 PM), <http://www.usatoday.com/story/news/2015/01/19/police-radar-see-through-walls/22007615/>.

⁶ *United States v. Denson*, 775 F.3d 1214, 1218 (10th Cir. 2014), *cert. denied*, 135 S. Ct. 2064 (2015).

⁷ *Kyllo v. United States*, 533 U.S. 27, 40 (2001).

⁸ *RANGE-R Theory of Operation*, *supra* note 4.

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.*

processing, the amount of motion is determined.¹³ Based on the range of motion, RANGE-R then classifies objects as “movers” or “breathers,” with “breathers” being significantly more active than “movers.”¹⁴ Since the device detects mere breathing, it is nearly impossible for an individual to hide from the device.¹⁵

Additionally, the RANGE-R, with its 160-degree field of view, can penetrate ceilings, floors, and walls.¹⁶ Specifically, the RANGE-R can penetrate a wall of up to one foot of thickness.¹⁷ The device’s 160-degree field of view includes eighty degrees in azimuth and elevation, meaning that the device could detect people on the first and second floors of a two-story home.¹⁸

Further, since the device is essentially resistant to “jamming or interference with other electronics,”¹⁹ there are only limited situations in which the RANGE-R would be ineffective. For example, the device cannot penetrate metal.²⁰ Moreover, if a wall is soaked with water, then the device may also be ineffective.²¹

Originally, the RANGE-R was designed to provide law enforcement and rescue personnel with the information necessary to safely complete law enforcement and search and rescue operations.²² The device can be used in the following ways: (1) by police and SWAT team members to detect the presence of assailants or hostages in a building; (2) by search and rescue teams to locate injured or stranded people; and (3) by firefighters to determine whether people are trapped inside of a burning home or building.²³ The creators of RANGE-R stress that RANGE-R “may make the difference between life and death” for these first responders.²⁴

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *See id.*

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.*

²² RANGE-R THROUGH THE WALL RADAR, <http://www.range-r.com/index.htm> (last visited Apr. 2, 2015).

²³ *Id.*

²⁴ *Id.*

PART II: AGAINST WHAT EXACTLY DOES THE FOURTH
AMENDMENT PROTECT?

The Fourth Amendment protects, in pertinent part, “[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures.”²⁵ By specifically referring to types of property, e.g., houses, the Fourth Amendment makes clear that its purpose is to protect not just people from unreasonable searches and seizures, but also property.²⁶

Because the Framers were explicit about their intent to protect property, Fourth Amendment jurisprudence was closely related to common law trespass until the twentieth century.²⁷ For example, in *Olmstead v. United States*,²⁸ the Court held that the attachment of wiretaps to telephone wires on public streets was not a search for purposes of the Fourth Amendment because “[t]here was no entry of the houses or offices of the defendants.”²⁹ Essentially, this holding meant that surveillance without trespass did not amount to a search under the Fourth Amendment.³⁰

However, in the latter half of the twentieth century, cases abandoned this strictly property-based approach.³¹ In the landmark case, *Katz v. United States*,³² the Court stated, “The Fourth Amendment protects people, not places.”³³ Deviating from the *Olmstead* approach, which it found to be “eroded by [the Court’s] subsequent decisions,”³⁴ the Court held that “the Government’s activities in electronically listening to and recording the petitioner’s words violated the privacy upon which he justifiably relied while using [a] telephone booth and thus constituted a ‘search and seizure’ within the meaning of the Fourth Amendment.”³⁵

²⁵ U.S. CONST. amend. IV., cl. 1.

²⁶ *United States v. Jones*, 565 U.S. ___, ___, 132 S. Ct. 945, 949 (2012). *But see Katz v. United States*, 389 U.S. 347, 351 (1967) (“The Fourth Amendment protects people, not places.”).

²⁷ *Jones*, 565 U.S. at ___, 132 S. Ct. at 949.

²⁸ 277 U.S. 438, 438 (1928).

²⁹ *Jones*, 565 U.S. at ___, 132 S. Ct. at 950 (quoting *Olmstead*, 277 U.S. at 464).

³⁰ *Id.*

³¹ *Id.*

³² 389 U.S. 347 (1967).

³³ *Id.* at 351.

³⁴ *Id.* at 353.

³⁵ *Id.*

Following *Katz*, the Court has consistently applied the analysis identified in Justice Harlan's concurrence, which stated that there is a Fourth Amendment violation when the government violates a person's "reasonable expectation of privacy."³⁶ The Court has gone a step further in applying this test by holding that a Fourth Amendment search does *not* occur, even when the house is the subject of the search, unless "the individual manifested a subjective expectation of privacy in the object of the challenged search" and "society [is] willing to recognize that expectation as reasonable."³⁷

For example, the Court applied this test in holding that it is not a search for the police to use a pen register to determine the phone numbers that were being dialed from a private landline because, by voluntarily conveying this information to the phone company, the user assumes the risk that the phone company will expose the numbers he or she has dialed to the police.³⁸ The Court also used this test to determine that there was no Fourth Amendment violation when the police engaged in aerial surveillance of a defendant's backyard to observe marijuana plants because the officers viewed the plants from publicly navigable airspace and the plants were visible to the naked eye.³⁹ However, is there a Fourth Amendment violation when police use a RANGE-R device to determine that someone is inside of a home?

PART III: HOW DO WE KNOW ABOUT RANGE-R?

According to *USA Today*, which originally publicized the use of RANGE-R, "at least [fifty] U.S. law enforcement agencies [have] quietly deployed radars that let them effectively see inside homes, with little notice to the courts or the public."⁴⁰ Additionally, despite the Supreme Court holding that officers could not use high-tech sensors to reveal information about the inside of a home without a search warrant,⁴¹ the Federal Bureau of Investigation (hereinafter "FBI") and United States Marshals have been using the device for over two years without giving *any* notice to the public or to the courts.⁴²

³⁶ *Jones*, 565 U.S. at ___, 132 S. Ct. at 950 (quoting *Katz*, 389 U.S. at 360 (Harlan, J., concurring)).

³⁷ *Kyllo v. United States*, 533 U.S. 27, 34 (2001).

³⁸ *Smith v. Maryland*, 442 U.S. 735, 745 (1979).

³⁹ *California v. Ciraolo*, 476 U.S. 207, 213 (1986).

⁴⁰ Heath, *supra* note 5.

⁴¹ *Kyllo*, 533 U.S. at 34.

⁴² Heath, *supra* note 5.

Those who support the continued use of RANGE-R contend that the device is necessary for officer safety when officers have to enter buildings or rescue hostages.⁴³ However, privacy advocates, including some judges, find the use of the device to be intrusive and problematic.⁴⁴

Interestingly, law enforcement's use of the device was virtually unknown until December 2014, when the United States Court of Appeals for the Tenth Circuit revealed that officers used a RANGE-R device prior to entering the home of a felon to execute an arrest warrant.⁴⁵ Following that revelation, the Marshals Service has faced harsh criticism about concealing the use of such devices.⁴⁶ According to a former Marshals Service supervisor, law enforcement is not instructed to hide the use of devices, but they know not to advertise such things because "[i]f you disclose a technology or a method or a source, you're telling the bad guys along with everyone else."⁴⁷

PART IV: THE CASE THAT REVEALED IT ALL:
UNITED STATES V. DENSON

Steven Denson, who had been convicted of armed robbery and subsequently stopped reporting to his probation officer as his sentence required, was on the run and thought to be "gone for good" at one point.⁴⁸ However, diligent police officers found his name on a residential Wichita utility account and proceeded to the address listed in hopes of finding Mr. Denson.⁴⁹

Based on information gained from "a handheld Doppler radar device" and other evidence, the officers believed that Mr. Denson was in fact present inside of the home.⁵⁰ The officers then proceeded to enter the home to execute an arrest warrant.⁵¹ While inside of the home, the officers found Mr. Denson, as well as "a stash of guns," which he was not allowed to possess due to his felony conviction.⁵² The

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ *United States v. Denson*, 775 F.3d 1214, 1216 (10th Cir. 2014), *cert. denied*, 135 S. Ct. 2064 (2015).

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² *Id.*

police then charged Mr. Denson with violating 18 U.S.C. Sections 922(g)(1) and 924(a)(2).⁵³

After pleading guilty to a felony firearm charge, Mr. Denson preserved the right to appeal the district court's denial of his Fourth Amendment motion to suppress the evidence found in his home. On appeal, Mr. Denson sought reversal on three grounds: (1) the officers entered his home without reason to believe that he was present inside of the home at that time; (2) the officers lacked a lawful basis to arrest him after they entered the home; and (3) the officers had no right to seize his guns.⁵⁴ The first two issues relate directly to the officers' use of the RANGE-R device.⁵⁵

With respect to the first issue, the court dodged deciding whether "reason to believe" meant probable cause or something less than probable cause.⁵⁶ However, it held that the officers did in fact have probable cause to believe that Mr. Denson was inside of the home, which required "only a fair probability" that he was present.⁵⁷ In assessing the totality of the circumstances, the court held that the officers had probable cause based on the following: (1) Mr. Denson had only recently opened the Wichita utility account, for which he was the primary account holder; (2) Mr. Denson had recently reported no earnings, suggesting that he was likely to be unemployed and more likely to be in the home at 8:30 AM on a weekday; (3) Mr. Denson was hiding from law enforcement, which also made it more likely that he would be inside of the home instead of out in public; and (4) the electric meter was "whirring away," suggesting that someone was present inside of the home using electrical devices.⁵⁸

However, the court did *not* support its holding on this issue with the fact that the RANGE-R detected the presence of a person within the home.⁵⁹ In discussing the officers' use of this device, the court stated the following:

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ *See id.* at 1218–20.

⁵⁶ *Id.* at 1217.

⁵⁷ *Id.*

⁵⁸ *Id.* at 1217–18.

⁵⁹ *Id.* at 1218. Notably, in its appellate brief, the Government's only reference to its use of the RANGE-R device is buried in a footnote, and it represents to the Court that the officers on the scene had already "formed a reasonable belief [that] Denson was in the residence prior to use of the device" before citing to *Kyllo*, in an apparent recognition that such reliance would be unconstitutional under that decision's holding. Brief

It's obvious to us and everyone else in this case that the government's warrantless use of such a powerful tool to search inside homes poses grave Fourth Amendment questions. New technologies bring with them not only new opportunities for law enforcement to catch criminals but also new risks for abuse and new ways to invade constitutional rights. Unlawful searches can give rise not only to civil claims but may require the suppression of evidence in criminal proceedings. We have little doubt that the radar device deployed here will soon generate many questions for this court and others along both of these axes.⁶⁰

Further, the court pointed out that Mr. Denson acknowledged as true all of the facts that it previously outlined as sufficient for establishing probable cause for the police to believe that he was inside of the home and emphasized that those facts “were discovered independently of the potentially problematic radar search—a fact that requires [the court] to defer those questions to another day.”⁶¹ With this, the court avoided the question of whether the use of RANGE-R to see inside of a home without a search warrant is a Fourth Amendment violation.

With respect to the second issue, Mr. Denson argued that the search the officers conducted to discover his guns was unlawful.⁶² However, the court quickly acknowledged that it is permissible for officers to engage in a protective sweep, or a “quick and limited search of the premises . . . if they have reason to worry about someone lurking inside who could pose a danger to them or to others present.”⁶³ The court went on to say that this standard was met because Mr. Denson was a fugitive; the officers knew he had a history of violent crime; the officers knew Mr. Denson was a gang member; and the officers knew there was another person who lived in the home and was wanted on an outstanding warrant.⁶⁴

Here, the court *again* had the opportunity to address the use of RANGE-R because the radar search that the police conducted prior to entering the home indicated that there was only *one* person inside of the home.⁶⁵ However, the court only acknowledged that “the officers’ questionable search outside the home” *could* “paradoxically negate

for Appellee at 4 n.1, *Denson*, 775 F.3d 1214 (No. 13-3329), 2014 WL 2916637, at *4 (citing *Kyllo v. United States*, 533 U.S. 27, 27 (2001)).

⁶⁰ *Denson*, 775 F.3d at 1218 (citation omitted).

⁶¹ *Id.* at 1218–19.

⁶² *Id.* at 1219.

⁶³ *Id.* (emphasis added).

⁶⁴ *Id.*

⁶⁵ *Id.*

their otherwise solid case for a search inside of the home.”⁶⁶ The court further noted, “If radar (or any other investigative technique for that matter) dispels the possibility of a hidden danger, a search predicated on that possibility becomes constitutionally unreasonable.”⁶⁷

Despite the fact that the court seemingly questioned both searches, the court again punted the issue by stating, “Without more facts about the radar, its capacities and how it was used, we just can’t say it ‘dispel[led]’ the officers’ ‘reasonable suspicion of danger in this case.’”⁶⁸ Elaborating on that point, the court raised several questions about the RANGE-R device, which included, “But how far inside the structure could it see? Could the device search the whole house and allow the officers to be sure that they had located every person present? Could it distinguish between one person and several?”⁶⁹ To answer these questions, the court simply noted, “We just don’t know. Our record lacks any answers.”⁷⁰ Therefore, although “the government’s only professed fear was the presence of persons, something its radar was admittedly designed to detect,”⁷¹ “[the court] simply [was not] in a position to say that the radar search negated the officers’ otherwise specific and articulable reasons to worry about a compatriot lurking inside.”⁷² Following this statement, the court again foreshadowed future litigation surrounding the use of the RANGE-R by saying, “We don’t doubt for a moment that the rise of increasingly sophisticated and invasive search technologies will invite us to venture down this way *again—and soon*.”⁷³

On March 26, 2015, Mr. Denson filed a petition for writ of certiorari to the United States Supreme Court.⁷⁴ Unfortunately, the questions raised by the United States Court of Appeals for the Tenth Circuit remain unanswered because the Supreme Court denied certiorari.⁷⁵

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ *Id.* at 1218.

⁷² *Id.* at 1219.

⁷³ *Id.* (emphasis added).

⁷⁴ Petition for Writ of Certiorari, *Denson v. United States*, No. 14-9128 (Mar. 26, 2015).

⁷⁵ *Denson v. United States*, 135 S. Ct. 2064 (2015) (mem.).

PART V: BUT WHAT ABOUT *KYLLO v. UNITED STATES*?

In 1991, Agent William Elliot began to suspect that Danny Kylo, who lived in a triplex in Florence, Oregon, was growing marijuana in his home.⁷⁶ Since marijuana is often grown indoors using high-intensity heat lamps, police sought to determine whether there was an unusual amount of heat emanating from Kylo's home.⁷⁷

In order to determine this, agents used a thermal imaging device to scan the entire triplex.⁷⁸ "Thermal imagers detect infrared radiation, which virtually all objects omit but which is not visible to the naked eye."⁷⁹ This device "operates somewhat like a video camera showing heat images" because it transforms the radiation into images based on relative warmth, e.g., black is cool and white is hot.⁸⁰

The agents scanned Kylo's home from the passenger seat of their vehicle while sitting across the street from it.⁸¹ The scan revealed that the roof covering the garage and the side wall of Kylo's home were warmer than the rest of the home and significantly warmer than the neighbors' homes in the triplex.⁸² This information helped the agents confirm their suspicion that Kylo was growing marijuana inside of his home.⁸³

Based on the thermal imaging results, utility bills, and tips from informants, the agents acquired a warrant to search Kylo's home.⁸⁴ The search of the home revealed that Kylo was growing over one hundred marijuana plants.⁸⁵ As a result, Kylo was indicted for manufacturing marijuana.⁸⁶

When Kylo moved to suppress the evidence found in the home based on the agents' reliance on the thermal imaging device, the Court had to decide whether the agents engaged in a warrantless search of Kylo's home.⁸⁷ In recognizing that "the Fourth Amendment

⁷⁶ *Kyllo v. United States*, 533 U.S. 27, 29 (2001).

⁷⁷ *Id.*

⁷⁸ *Id.*

⁷⁹ *Id.*

⁸⁰ *Id.* at 29–30.

⁸¹ *Id.* at 30.

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Id.* at 31.

draws ‘a firm line at the entrance to the house[,]’⁸⁸ the Court thought it best that the “line . . . must be not only firm but also bright—which requires clear specification of those methods of surveillance that require a warrant.”⁸⁹ Moreover, the Court noted that “[i]n the home, [the Court’s cases] show *all* details are intimate details, because the entire area is held safe from prying government eyes.”⁹⁰

Justice Antonin Scalia, writing for the majority, stated, “While the technology used in the present case was relatively crude, the rule [the Court] must adopt must take account of more sophisticated systems that are already in use or in development.”⁹¹ Based on this forward-looking approach and the recognized sanctity of the home, the Court held 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.”⁹² Thus, the agents’ use of the thermal imaging device was an unlawful search.⁹³

However, Justice John Paul Stevens, writing for the dissent, emphasized that “[w]hile the Court ‘take[s] the long view’ and decides this case based largely on the potential of yet-to-be-developed technology that might allow ‘though-the-wall surveillance’ this case involves nothing more than off-the-wall surveillance by law enforcement officers to gather information exposed to the general public from outside of petitioner’s home.”⁹⁴ Essentially, the dissent disputed the fact that heat emanating from the outside of a person’s home was something deserving of a reasonable expectation of privacy because it was not within the interior of the home and was exposed to the public.⁹⁵

Although the Court has declined to extend its holding several times since its decision on June 11, 2001,⁹⁶ *Kyllo* remains good law.

⁸⁸ *Id.* at 40 (quoting *Payton v. New York*, 445 U.S. 573, 590 (1980)).

⁸⁹ *Id.*

⁹⁰ *Id.* at 37.

⁹¹ *Id.* at 36.

⁹² *Id.* at 40.

⁹³ *Id.*

⁹⁴ *Id.* at 42 (Stevens, J., dissenting) (internal citation omitted).

⁹⁵ *Id.* at 42–43.

⁹⁶ *See, e.g., United States v. Lopez*, 380 F.3d 538, 544 (1st Cir. 2004).

PART VI: DOES THE USE OF RANGE-R COMPORT
WITH THE *KYLLO* DECISION?

While some assert that the holding in *Kyllo v. United States* is limited to its specific facts, they also recognize that *Kyllo* stands for the principle of protecting information about the home that has *always* been protected by the Fourth Amendment.⁹⁷ Professor Orin Kerr opines that the Court in *Kyllo* was merely comparing the intrusiveness of sense-enhancing devices to physical intrusion, and “the Court has fashioned new rules in an effort to retain the traditional protections set by property law.”⁹⁸

Kyllo is most cited for the fact that “the Fourth Amendment offers special protections to the home.”⁹⁹ Although the Court has refused to extend its holding in *Kyllo* to the thermal imaging of commercial buildings,¹⁰⁰ which bolsters the argument that *Kyllo* stands for protecting the sanctity of the home, this is not relevant in the case of Steven Denson. Since the police in *United States v. Denson* used a sense-enhancing device to see inside of Denson’s home without a search warrant,¹⁰¹ its facts appear to fall squarely within the seemingly broad holding of *Kyllo*.

Moreover, it was the goal of the Court in *Kyllo* to protect the privacy guaranteed by the Fourth Amendment against “sense-enhancing technology,”¹⁰² which is defined as “us[ing] sophisticated technology to gather evidence,” as opposed to “the traditional direct physical inspection of evidence by law enforcement agents.”¹⁰³ Certainly the use of a device that allows the police to determine whether there is someone inside of a home, how many people are inside of a home, how far away they are from the device, and on which floor they are located without physically entering the home would fit the definition of sense-enhancing technology.¹⁰⁴ Since the Fourth Amendment protects the home and the RANGE-R device fits the definition of sense-enhancing tech-

⁹⁷ E.g., Orin S. Kerr, *The Fourth Amendment and New Technologies: Constitutional Myths and the Case for Caution*, 102 MICH. L. REV. 801, 835, 837 (2004).

⁹⁸ *Id.* at 835.

⁹⁹ *Id.* at 836.

¹⁰⁰ *Id.* at 837.

¹⁰¹ *United States v. Denson*, 775 F.3d 1214, 1216 (10th Cir. 2014), *cert. denied*, 135 S. Ct. 2064 (2015).

¹⁰² *Kyllo v. United States*, 533 U.S. 27, 47 (2001).

¹⁰³ David E. Steinberg, *Sense-Enhanced Searches and the Irrelevance of the Fourth Amendment*, 16 WM. & MARY BILL RTS. J. 465, 466 (2007).

¹⁰⁴ *RANGE-R Theory of Operation*, *supra* note 4.

nology, it seems that the outcome in Denson’s case was even more likely to have been circumscribed by the holding in *Kyllo*.

Further, the core holding of *Kyllo* emphasizes that police cannot just “explore details of the home that would previously have been unknowable without physical intrusion.”¹⁰⁵ Along the same lines, Justice Scalia, writing for the majority, constantly refers to the “intimate details of the home” throughout the opinion,¹⁰⁶ and he once notes that “[i]n the home . . . all details are intimate details.”¹⁰⁷ Since all details about the home are intimate details,¹⁰⁸ then knowing how many people were present inside of Steven Denson’s home or whether people were present inside of the home at all are certainly intimate details.

Additionally, the details that the police uncovered about the inside of the home would have remained unknown to the police had they not physically entered it. More specifically, the police used the RANGE-R device to determine whether someone was inside of the home in order to articulate a “reason to believe” that Denson was present therein, which would ensure the successful execution of an arrest warrant.¹⁰⁹ Without the use of the RANGE-R device, the police likely could not have known by “a fair probability” that Denson was in the home without entering it without a search warrant. The fact that the Government argued that Denson was most likely home since he was hiding from the police makes this an even stronger argument.¹¹⁰ If Denson were actually hiding in the home, then he very likely took measures to prevent the police or anyone else from seeing him inside of his home from any acceptable vantage point, e.g., by looking from the street into the window.

Furthermore, Justice Stevens, writing for the dissent in *Kyllo*, made several points about the use of the thermal imaging device in concluding that the officers’ use of the device did not constitute a search. First, Justice Stevens argued that heat emanating from the roof and the side wall of a home was not an intimate detail about the *interior* of the

¹⁰⁵ *Kyllo*, 533 U.S. at 40.

¹⁰⁶ *Id.* at 37.

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ *United States v. Denson*, 775 F.3d 1214, 1216 (10th Cir. 2014), *cert. denied*, 135 S. Ct. 2064 (2015).

¹¹⁰ *Id.* at 1217.

home.¹¹¹ However, in Denson's case, the officers were able to determine that one person was *inside* of the home.¹¹²

Furthering his point, Justice Stevens argued that *Kyllo* assumed the risk that someone would discover that there was heat emanating from his home despite the fact that it was not visible to the naked eye.¹¹³ However, the same cannot be said in Denson's case since he was inside of his home where he arguably did not want to be found by the police¹¹⁴ because a person who was allegedly hiding from the police would not assume the risk that someone would see him inside of his own home by making his presence in the home visible through some other means, e.g., an unobstructed window. This is even more unlikely since the police used the RANGE-R device to help them determine that Denson was present inside of the home, giving rise to the inference that this was their only means of determining this without physically entering the home.

Additionally, Justice Stevens argued that the use of the thermal imaging device did not constitute a warrantless search because the police in *Kyllo* made an inference that *Kyllo* was growing marijuana in the home based on the fact that the thermal imaging device determined that there was heat emanating from the exterior surfaces of the home.¹¹⁵ Essentially, Justice Stevens was arguing that the thermal imaging device provided police with insignificant information absent the inference that halogen lamps are often used to grow marijuana and heat emanates from homes where marijuana is being grown with halogen lamps. However, in Denson's case, the RANGE-R determined that there was one person inside of the home.¹¹⁶ While the police arguably made an inference that this person was Denson, it was not as far down the chain of inferences as the inference that Justice Stevens discussed in *Kyllo*.¹¹⁷ Here, the RANGE-R simply told the police there was one person in Denson's home,¹¹⁸ and there was arguably a fifty percent chance that it was Denson since he allegedly lived with one other person.¹¹⁹

¹¹¹ *Kyllo*, 533 U.S. at 43 (Stevens, J., dissenting).

¹¹² *Denson*, 775 F.3d at 1216.

¹¹³ *Kyllo*, 533 U.S. at 43 (Stevens, J., dissenting).

¹¹⁴ *Denson*, 775 F.3d at 1218.

¹¹⁵ *Kyllo*, 533 U.S. at 43 (Stevens, J., dissenting).

¹¹⁶ *Denson*, 775 F.3d at 1218.

¹¹⁷ *See Kyllo*, 533 U.S. at 44 (Stevens, J., dissenting).

¹¹⁸ *Denson*, 775 F.3d at 1218.

¹¹⁹ *Id.* at 1219.

In his dissent, Justice Stevens also pointed to the fact that the thermal imaging device detected heat emanating *off of the wall* of a home, which was unlike a device that detected a detail *through the wall* of a home.¹²⁰ Here, the RANGE-R is literally described as a “through the wall” device by its manufacturer.¹²¹ This is likely because the device sends signals *through* the walls of a home in order to detect whether there are any moving objects in the home.¹²²

Finally, the majority in *Kyllo* stated, “The rule we adopt must take account of more sophisticated systems that are already in use or in development”¹²³ because “[r]eversing that approach would leave the homeowner at the mercy of advancing technology—including imaging technology that could discern all human activity in the home.”¹²⁴ Based on this powerful statement, it seems that the Court in *Kyllo* was creating a broad holding, which would encompass any technology, past or future, that reveals “intimate details” about the interior of the home. Since the RANGE-R is a through-the-wall technology that allows police officers to see inside of the home by determining whether someone is present in the home, how many people are present in the home, how far the person or persons are from the device, and whether they are located on a certain floor of the home,¹²⁵ the RANGE-R seems like just the type of technology that the *Kyllo* Court forbade the government from using.

PART VII: SHOULD THE FRUITS OF THE GOVERNMENT’S USE OF THE
RANGE-R DEVICE HAVE BEEN SUPPRESSED IN ITS
CASE AGAINST DENSON?

A protective sweep “aimed at protecting the arresting officers, if justified by the circumstances, is . . . not a full search of the premises, but may extend only to a cursory inspection of those spaces where a person may be found.”¹²⁶ Furthermore, “the sweep [must] last[] no longer than is necessary to dispel the reasonable suspicion of danger and in any event no longer than it takes to complete the arrest and depart the premises.”¹²⁷ An officer is justified in conducting a protec-

¹²⁰ *Kyllo*, 533 U.S. at 42–43 (Stevens, J., dissenting).

¹²¹ *RANGE-R Theory of Operation*, *supra* note 4.

¹²² *Id.*

¹²³ *Kyllo*, 533 U.S. at 36 (citation omitted).

¹²⁴ *Id.* at 35–36.

¹²⁵ *RANGE-R Theory of Operation*, *supra* note 4.

¹²⁶ *Maryland v. Buie*, 494 U.S. 325, 335 (1990) (citation omitted).

¹²⁷ *Id.* at 335–36.

tive sweep “in conjunction with an in-home arrest when the searching officer possesses a reasonable belief based on specific and articulable facts that the area to be swept harbors an individual posing danger to those on the arrest scene.”¹²⁸

In *United States v. Denson*, the officers used the RANGE-R device prior to entering Denson’s home to execute an arrest warrant, and the device “suggested the presence of one person inside.”¹²⁹ The court itself said that “if [a] radar . . . dispels the possibility of a hidden danger, [then] a search predicated on that possibility becomes constitutionally unreasonable.”¹³⁰ Moreover, the court stated, “The government’s only professed fear was the presence of persons, something its radar was admittedly designed to detect.”¹³¹ Since the government’s only fear was dangerous persons lurking inside of Denson’s home and the RANGE-R device, which the police relied on to justify entering the home to execute a search warrant, indicated that there was only one person inside of the home, it seems that their conducting a protective sweep was constitutionally unreasonable.

However, the court ultimately dodged this issue by stating, “Without more facts about the radar, its capacities and how it was used, we can’t say it ‘dispel[led]’ the officers’ ‘reasonable suspicion of danger in this case.’”¹³² Perhaps the police, like the court, would claim that they were not sure of the device’s effectiveness or accuracy and did not want to risk their safety, but this assertion would be less credible coming from the people who relied on this device throughout this entire process.

Instead, the court in *Denson* justified the protective sweep by stating that the police knew “that a second person lived in the home who was wanted on an outstanding warrant” and that “[c]ollectively, all this supplied reason enough to worry that Mr. Denson might not be alone and that anyone else inside could be dangerous.”¹³³ This justification is troubling because it does not seem likely that the government could be worried about the presence of another potentially dangerous person inside of the home when the device clearly indicated that there was but

¹²⁸ *Id.* at 337.

¹²⁹ *United States v. Denson*, 775 F.3d 1214, 1219 (10th Cir. 2014), *cert. denied*, 135 S. Ct. 2064 (2015).

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² *Id.*

¹³³ *Id.*

one person inside of the home, who the police determined to be Steven Denson.

Had the court in *Denson* not dodged this issue by claiming ignorance about the RANGE-R device's capabilities, the government's use of this device almost certainly would have resulted in the fruits of their search being suppressed. If the police had not engaged in a protective sweep of the premises, then they would not have discovered Denson's stash of guns, which he illegally possessed in violation of 18 U.S.C. Sections 922(g)(1) and 924(a)(2). Furthermore, had the court found that this protective sweep was conducted illegally, i.e., without the requisite articulable suspicion that the arrest area harbored a dangerous individual, then the evidence likely would have been suppressed as a result of a Fourth Amendment violation. Without the guns themselves, there would be no case against Denson.

Unfortunately, since the court in *Denson* avoided this issue and the Supreme Court later denied certiorari,¹³⁴ it remains unknown what would have resulted if this question were addressed.

CONCLUSION

First, *Denson* fits squarely into the holding of *Kyllo* with respect to the fact that RANGE-R was used to determine something about the *interior of the home*. Second, like the police in *Kyllo*, the police in *Denson* used the device to discover intimate details about the home that could not otherwise have been discovered without physically entering the home without a search warrant. Third, *Denson* is arguably an even stronger case than *Kyllo* in that it meets all of the criteria that the dissent in *Kyllo* felt were lacking to make the use of the thermal imaging device a warrantless search. Fourth, since the Court in *Kyllo* sought to create an all-encompassing rule for the future, it seems that *Denson* is certainly the type of technology that the majority had in mind when it referred to "more sophisticated systems that are already in use or in development."¹³⁵ Finally, the use of the RANGE-R device arguably could have resulted in the evidence against Steven Denson being suppressed had the court not been so dubious about the device's capabilities, leading it to dodge the issue of whether the use of the device dispelled the officers' suspicions about someone suspicious lurking in the home. Thus, although Denson's petition for writ of certiorari was

¹³⁴ *Denson v. United States*, 135 S. Ct. 2064 (2015) (mem.).

¹³⁵ *Kyllo v. United States*, 533 U.S. 27, 36 (2001) (citation omitted).

denied, the use of the RANGE-R and similar technologies will certainly be an issue that the Court, and lower courts, will have to address in the near future. In deciding cases involving “sense-enhancing technology,” the courts should rely, at least in part, on the Supreme Court’s decision in *Kyllo*.