

**University of Central Florida Police Department
Narcotics Canine Evaluation**

November 16, 2003

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I Executive Summary

- K9 Bailey reliably detected crack cocaine, powder cocaine, methamphetamine, heroin and marijuana.
- K9 Bailey was able to locate and alert on each of the above mentioned contraband in both small and large amounts.
- K9 Bailey was able to successfully locate contraband in motor vehicles as well as scent boxes.
- K9 Bailey was able to successfully locate contraband when novel odors were present. K9 Bailey did not 'false alert' to the novel odors.
- During negative searches (no contraband present), K9 Bailey did not 'false alert'.
- K9 Bailey did alert on packaging material during one negative search. However, it appears that the baggies were contaminated with the odor of marijuana. When new baggies were introduced, no other alerts to packaging material occurred.
- K9 Bailey's handler, Corporal Dale Dennany, is extremely professional and competent as a narcotics detection canine handler.
- K9 Bailey exhibits strong drive and a high degree of accuracy in overall search performance.

II Introduction

In August of 2003, a particularly damaging piece of case law affecting narcotics detection dogs occurred in the State of Florida (see Appendix A-Matheson v State). This particular case reduced the strength of an exterior canine alert on a motor vehicle as a method for obtaining probable cause for a search. The defense team utilized an expert witness that identified a number of issues in the training of drug dogs. These issues, as a point of fact, have little to do with overall performance but were able to sway the court enough to suppress the evidence. Consequently, it is prudent for law enforcement agencies to take a proactive approach and eliminate these issues prior to their cases ever reaching a courtroom.

This evaluation focuses on the training issues identified in Matheson v State.

These areas were:

1. Search of motor vehicles
2. Drugs in small and large amounts
3. Novel odors
4. Negative testing
5. Extinction training (from the odor of packaging material)

During each phase, Major Randy Mingo maintained visual control over the drugs as prescribed by law under D.E.A. license # RUO 294354. The drugs were contained in scent packs obtained from the Florida Department of Law Enforcement, which insured that substances had been properly tested and were a reliable training aid.

Dr. Charlie Mesloh set up each experimental design and recorded the data.

Additional personnel were utilized as needed in order to prevent contamination of the training aids. Corporal Dale Dennany and K9 Bailey were not present during the set-up of each search, thus preventing any chance that Bailey would be prompted to alert by his handler. All searches were conducted on-lead, which is the manner that Cpl Dennany normally works his dog.

Testing occurred in the parking lot of the University of Central Florida Police Department utilizing marked and unmarked vehicles. Additional tests using scratch boxes were conducted in the same area. Confounding odors included cough drops, cigars, and plastic baggies, which are often used in packaging drugs.

This evaluation focused upon narcotics detection skills of both the handler and trained dog. While K9 Bailey is cross-trained in tracking, evidence recovery, and obedience, these areas and supporting skills were not assessed in this evaluation. Consequently, no summary conclusions or findings will be made in these functions.

III Literature Review

The university campus was once viewed as a haven from the violence and criminal activity of the outside world. However, over time, crime in various forms has begun to appear in this once sacred environment (Trump, 1998). This growing threat has placed increasing responsibilities on campus law enforcement agencies. Violent crime, illegal drug use and the threat of civil litigation against the institution are all very real issues facing college administrators (Wolf, 2001).

The scenting power of dogs has been used by man for thousands of years (Chapman, 1990; Mesloh, 2003). Around the country today, law enforcement agencies use specially trained dogs for a variety of purposes. The primary reason is that they are cost-effective means for crime control (O'block, Doeren, & True, 1979; Lilly & Puckett, 1997).

According to Williams et al (1997), "the dog and its handler remain the most widely used, broadly sensitive, accurate, fast, mobile, flexible, and durable system available for detecting illegal drugs and explosives (p.1). A trained dog's alert can be used as probable cause to search or obtain a search warrant (D.E.A., 1995; Bryson, 2000).

The drug detection ability includes (but is not limited to):

- Marijuana (cannabis sativa)
- Cocaine hydrochloride (C₁₇H₂₁O₄)
- Crack cocaine (cocaine freebase)
- Heroin (C₂₁N₂₃NO₅)
- Methamphetamine (C₁₀H₁₅N)

Prior research in canine scent detection has based their theories on Signal Detection Theory. Green & Swets (1966) found that detection was based on two stages of information processing:

1. Sensory evidence is collected about the presence or absence of the signal,
2. A decision is made regarding whether this evidence indicates a signal or not.

In this model, the canine is offered an odor and then must determine whether or not it is the odor that they were trained to detect prior to indicating through an alert.

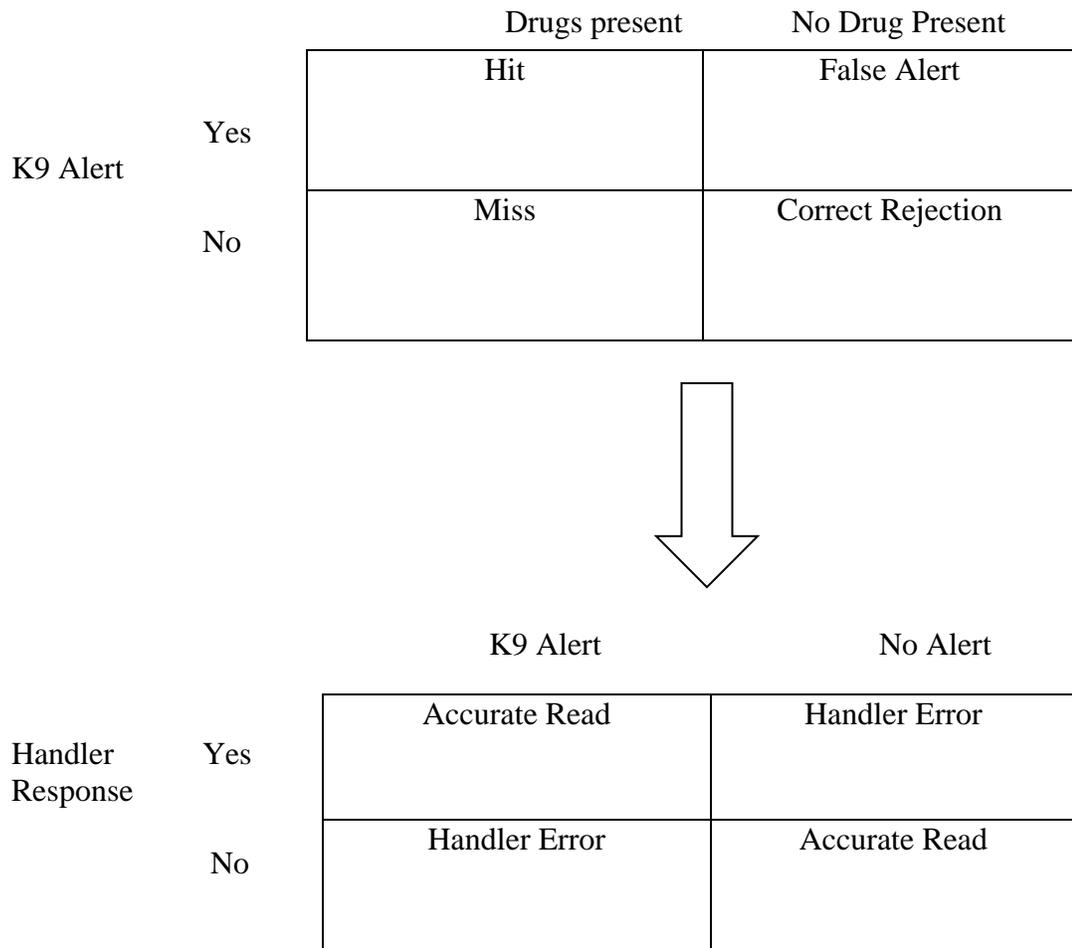
Unfortunately, the canine is not an autonomous unit. The canine handler brings to this equation: experience, training, bias and error. The existing model does not account for these factors and thus does not represent a fair representation of the canine search. As a result, the Scent Detection Paradigm (Mesloh, Henych, & Wolf, 2002) is suggested to account for human as well as canine factors.

The following model (Figure 1) highlights a relatively contemporary scent detection paradigm. As shown below, handler error is added in order to illustrate the realistic events of the sniff test. First, the canine is presented an odor and, based upon the training and the individual ability of the dog, renders an opinion. The opinion regarding the presence controlled substance is articulated through an alert in which the dog is trained.

A hit represents a proper alert when drugs are present, while a miss represents a failure to alert when drugs are present. Conversely, a false alert occurs when the canine indicates an alert when no drugs are present. Handler error occurs when the handler fails to properly interpret the behavior of the dog, leading to misidentification. The response bias on the part of the observer (handler) varies as some are more conservative or liberal

with their interpretations (Wickens & Hollands, 2000). As a result, this additional bias necessitates the second half of the scent detection matrix. The handler is called upon to accurately read the canine for indications of alerts or non-alerts.

Figure 1: Scent Detection Paradigm



Prior Research: Evaluation of the UCF Police Department K9 Unit

Prior research attempted to collect data that would capture the dimensions constituting the factors that may be predictive of student satisfaction with law enforcement services on the University of Central Florida campus.

This research consisted of administering a survey instrument to a large group of students (n = 598) identified in the sampling frame. Questions in this survey relate to perceptions of the pilot canine (K-9) program. For a full review and analysis of these questions, please refer to the UCF Police Department Assessment (2003), specifically *Student Perceptions of Police Dogs at the University of Central Florida* (see Mesloh, Henych, & Pate, 2003).

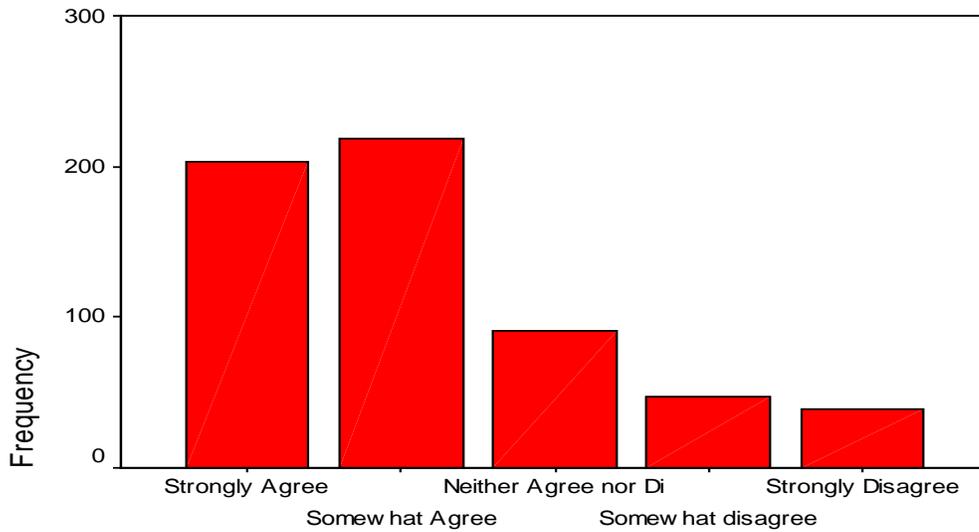
Information collected was used to assess factors that impact perceptions and positive steps could be taken to correct relations between law enforcement and students. Related directly to this evaluation was a series of questions focused on perceptions of narcotics detections canines. Each of these questions is **bolded** on the following pages. Despite the fact that student perceptions of program performance are not tantamount to actual field performance, at the time these findings served as a proxy measure and established a baseline for public opinion for later research comparison. They also serve to reinforce one of the basic tenants of social construction; “*Perception Becomes Reality.*” The social construction and public perception of the UCF K-9 program was equal to if not more important than the actual performance of the K-9 program. However, this evaluation establishes quantifiable performance measures that can be used to support the legal validity of canine alerts and consequential searches.

The presence of a canine unit could be an effective method for deterring drug use on campus.

Presence of K9 effective for deterring drug use

		Frequency	Valid Percent
Valid	Strongly Agree	203	33.9
	Somewhat Agree	218	36.5
	Neither Agree nor Disagree	91	15.2
	Somewhat disagree	47	7.9
	Strongly Disagree	39	6.5
	Total	598	100.0

Presence of K9 effective for deterring drug use



Presence of K9 effective for deterring drug use

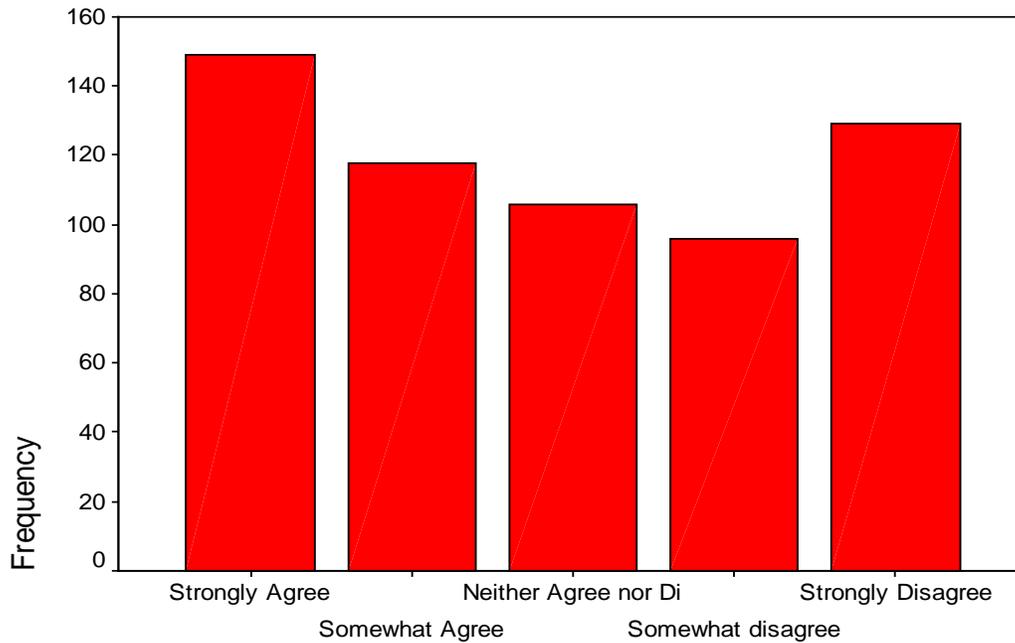
Seventy percent agreed that the presence of a canine unit could be an effective method for deterring drug use on campus.

A police dog sniffing the outside of a car is not considered a search and does not require a search warrant.

k9 sniffing exterior of vehicle

		Frequency	Valid Percent
Valid	Strongly Agree	149	24.9
	Somewhat Agree	118	19.7
	Neither Agree nor Disagree	106	17.7
	Somewhat disagree	96	16.1
	Strongly Disagree	129	21.6
	Total	598	100.0

k9 sniffing exterior of vehicle



k9 sniffing exterior of vehicle

Forty-five percent were aware that a K-9 alert on the exterior of a vehicle did not require a search warrant, while fifty-six percent either disagreed or did not know.

Contingent Valuation of Narcotics Detection Canines

To assess the value students would place on safety and security, this scenario was created to measure the student's willingness to pay for certain services. The following excerpt was drawn directly from the survey instrument:

The following scenario is hypothetical and not real. It is designed to determine the value of a service. No assessment of students or faculty will actually occur. You may assign values in fractions of dollars or whole dollars (i.e. \$10.25).

Drug Detector Dog

Suppose that crime increased dramatically on the University of Central Florida campus. Police dogs have been shown to reduce both drug use and violent crime. However, state funding will not cover this expense. If students and faculty want this service, they will have to pay for it themselves. How much would **YOU** be willing to pay per month to reduce crime on campus \$____.____?

Results (Drug Dog)

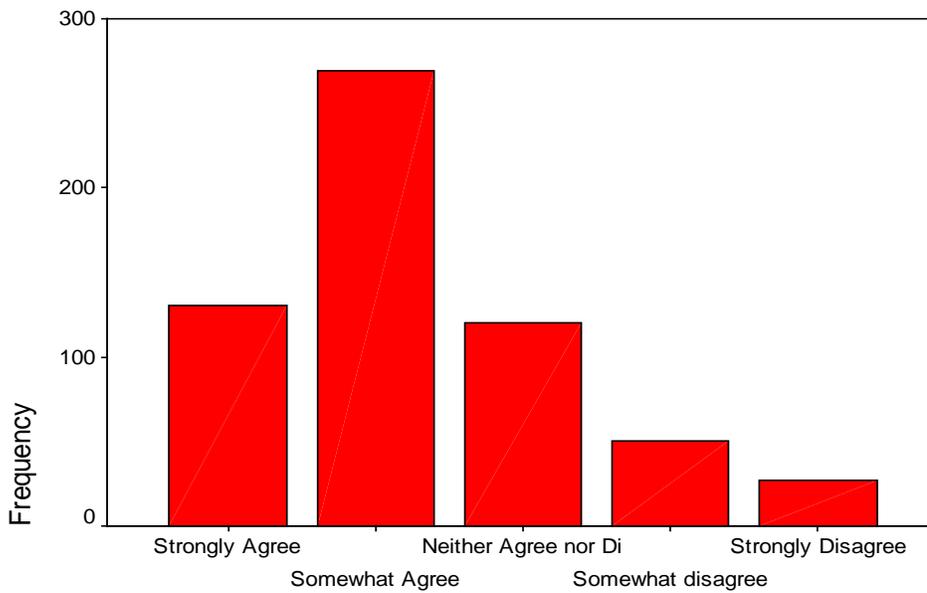
Twenty-five percent stated that they were not willing to fund a drug dog on campus. However, the majority of students (approximately seventy-three percent) were willing to pay a \$1.00 or more per month to fund this program. Approximately thirteen percent of the students were willing to pay ten dollars or more per month for a drug dog on campus.

Police dogs could be beneficial in the college and university setting to reduce crime.

Canines reduce crime

		Frequency	Valid Percent
Valid	Strongly Agree	130	21.8
	Somewhat Agree	269	45.1
	Neither Agree nor Disagree	120	20.1
	Somewhat disagree	50	8.4
	Strongly Disagree	27	4.5
	Total	596	100.0

Canines reduce crime



Canines reduce crime

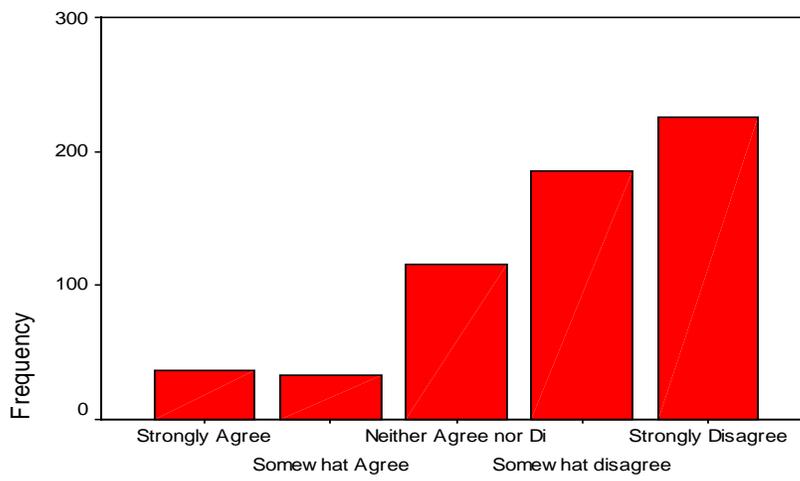
Sixty-seven percent of the students agreed that K-9's reduced crime, less than thirteen percent disagreed.

Canine units are a waste of money regardless of how much they cost.

Canines a waste of money

		Frequency	Valid Percent
Valid	Strongly Agree	37	6.2
	Somewhat Agree	33	5.5
	Neither Agree nor Disagree	116	19.4
	Somewhat disagree	185	31.0
	Strongly Disagree	226	37.9
	Total	597	100.0

Canines a waste of money



Canines a waste of money

Less than twelve percent felt that canines were a waste of money.

Statistical Analysis of Findings from Prior K9 Research at UCF

The following multivariate analysis is pending publication in the Journal of Criminal Justice (see Mesloh, Henych, & James-Mesloh, 2004).

Correlation Between Measures of Police Dog Effectiveness

Variables	Crime Reduction	Deter Drug Use	K9 is Waste of Money
Crime Reduction	1.000		
Deter Drug Use	.625**	1.000	
K9 is Waste of Money	-.465**	-.546**	1.000

Note. **p < .01. (two tailed)

OLS Regression of Student Perceptions of Police Canine Within Three Constructs of Effectiveness

Variable	<u>Crime Reduction</u>			<u>Drug Reduction</u>			<u>K9 is waste of \$</u>		
	B	SE	β	B	SE	β	B	SE	β
Marijuana use	.044	.033	.064	.146	.038	.185***	-.158	.039	-.204***
Underage drinking	-.034	.099	-.016	.085	.114	.035	-.059	.116	-.024
Cocaine use	.062	.102	.027	.054	.117	.021	.017	.120	.007
Perceived ability	.453	.052	.390***	.353	.059	.266***	-.363	.060	-.279***
Legal knowledge	.089	.032	.127**	.113	.037	.141**	-.080	.038	-.102*
Media construction	.149	.042	.151***	.166	.049	.147***	-.033	.050	-.030
Fear of dogs	-.126	.122	-.046	-.221	.141	-.071	.213	.144	.069
Gender	-.089	.096	-.042	-.077	.111	-.032	.192	.113	.080
Major	.016	.097	.008	-.101	.112	-.042	.287	.113	.121*
Fear index	.036	.014	.116*	.027	.017	.077	.006	.017	.020
Police index	.052	.017	.138**	.070	.019	.163***	-.057	.020	-.134**
White	.257	.169	.104	.238	.194	.084	-.071	.198	-.026
Black	.306	.227	.079	.567	.262	.128*	-.121	.266	-.028
Hispanic	.420	.226	.108	.348	.260	.079	-.101	.265	-.023
F	13.17***			12.15***			9.61***		
R	.569			.554			.509		
R ²	.324			.306			.259		
Adjusted R ²	.299			.281			.232		

Note. B = unstandardized coefficient, SE = standard error, β = standardized coefficient. *p < .05 **p < .01 *** p < .001. (two tailed)

While complex statistical analysis is not the basis of this evaluation, certain relationships between variables may be useful in developing later policy decisions. In the above correlation table, three measures of perceived police dog effectiveness are highly correlated and significant at the .01 level. In layman's terms, these variables measure similar if not identical concepts. Canines are perceived by many students as a mechanism to reduce both crime and drug use. Consequently, those that take this view tend to believe that police dogs are not a waste of money. Conversely, those that believe police dogs are not reducing crime and drug use believe them to be a waste of money. Regardless, there is strong linkage between the concepts of drugs and crime in respondent answers.

Using OLS regression, specific key independent variables are examined to determine their affect on the three measures of perceived police effectiveness. While a full discussion of these relationships would be impossible in this evaluation (see *Law Enforcement Canine Units on University Campuses: An Examination of Student Perceptions* by Mesloh, Henych, & James-Mesloh, pending publication), certain variables need to be addressed.

Race, gender, major in college, fear of dogs, underage drinking, hard drug use, and fear of crime are poor indicators of outcomes in perceptions. This is a positive sign in a time where racial profiling news stories have become commonplace. At this point, these issues do not appear to be burdening the university environment.

Proxy measures for perceived ability of K9's, legal knowledge, media construction, marijuana use, and perceptions of the campus police department have significant values in these models. Marijuana users tend to not support the canine program, as do those who do not highly rate campus police officers. Stronger support was also noted in those with more knowledge regarding canine ability and the case law involving search and seizure.

IV Evaluation and Findings

In search 1, rock cocaine in various amounts was concealed on the exterior of five vehicles (along with confounding odors) which were parked side by side. The actual amount of the drug or the confounding odor is listed under the vehicle



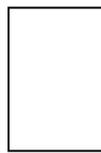
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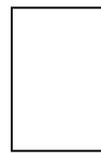
.1 g



Cigar
Tube



Cough
Drops



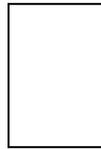
Baggies

K9 Bailey successfully located both the large and small amounts of rock cocaine. He did not alert on the cigar tube or the cough drops (nor did he show any particular interest). However, he did alert on the empty baggies. It was originally thought that this was a false alert and would require additional elimination training to correct this problem. However, after some investigation, it was determined that the baggies had come from the evidence packaging area of the police station and could have become contaminated. Fresh baggies were introduced and no further alerts to packaging occurred.

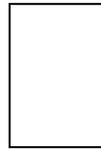
In search 2, powder cocaine in various amounts was concealed on the exterior of five vehicles (along with confounding odors) which were parked side by side. The actual amount of the drug or the confounding odor is listed under the vehicle.



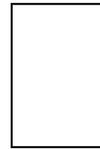
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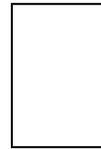
2 g



.2 g



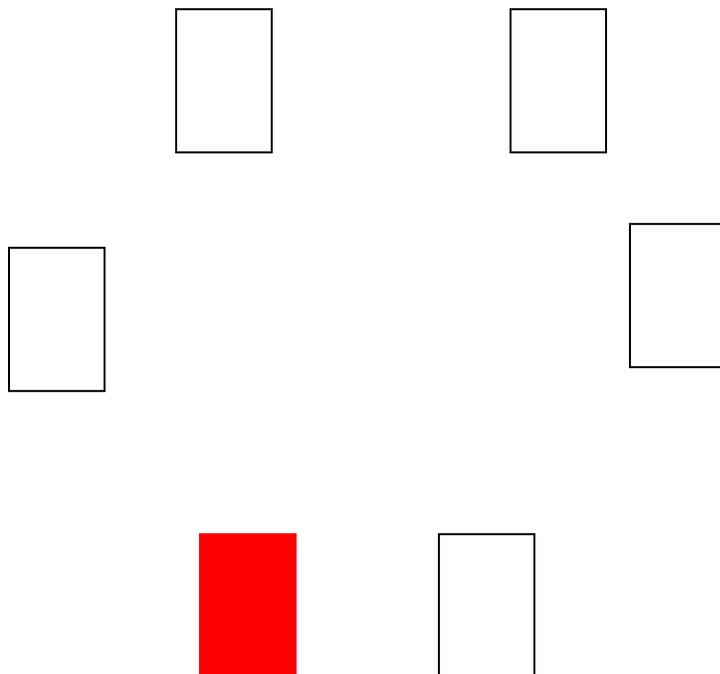
Baggies



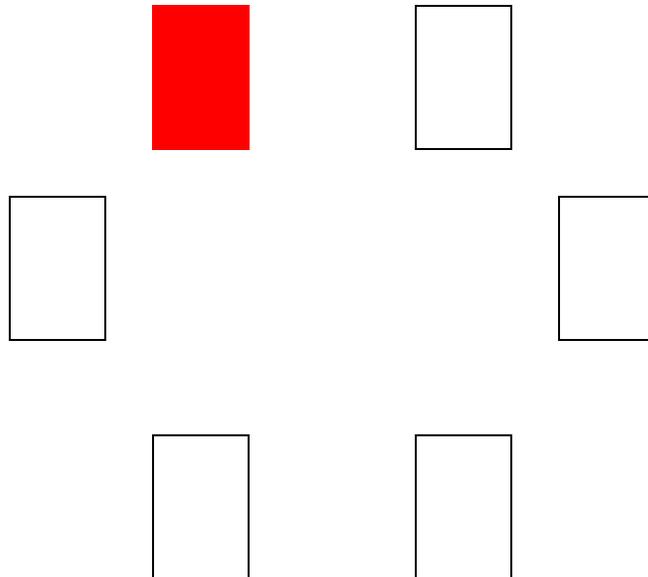
Blank

K9 Bailey successfully located both the large and small amounts of powder cocaine. He did not alert on the baggies or the blank vehicle.

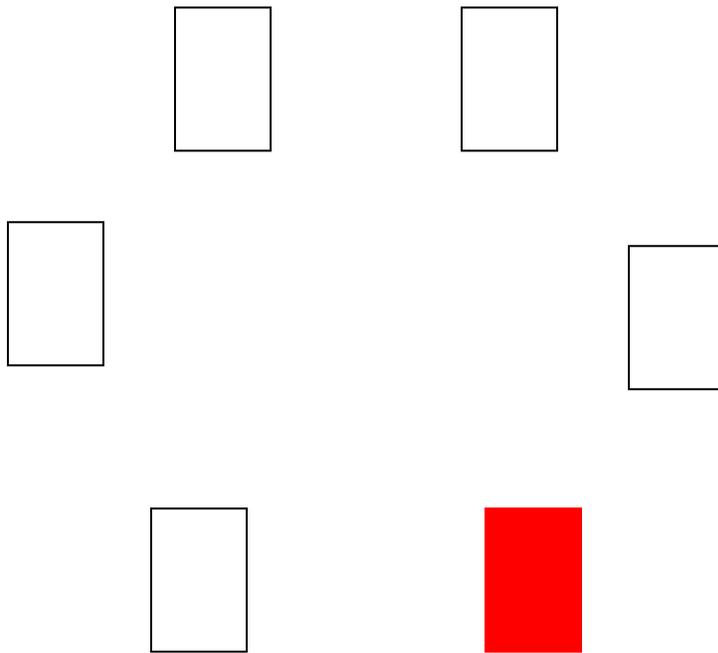
In search 3, scent boxes were used in a six position format. The target odor was marijuana and is indicated by the red box. The amount was twenty eight (28) grams. Empty baggies were placed in two of the other boxes and three boxes were blanks. K9 Bailey successfully identified the box containing the marijuana and did not alert on any of the other boxes.



In search 4, heroin was placed in one of the six boxes. The amount was five (5) grams. Empty baggies were placed in two of the other boxes and three boxes were blanks. K9 Bailey successfully identified the box containing the heroin and did not alert on any of the other boxes.



In search 5, methamphetamine was placed in one of the six boxes. The amount was 5.1 grams. Empty baggies were placed in two of the other boxes and three boxes were blanks. K9 Bailey successfully identified the box containing the methamphetamine and did not alert on any of the other boxes.



Interview and Observations

Corporal Dale Dennany is a white male, 35 years of age. He is married with no children. He has been employed with the UCF Police Department for 11 years. He has attended a number of continuing education courses since becoming employed as a law enforcement officer.

Cpl Dennany exhibits the positive traits that an agency would want in a dog handler. He expresses sincere affection for his canine partner, while realizing that K9 Bailey is not just a family pet (although he is allowed to sleep in the bed). At the time of this evaluation, Cpl Dennany was up to date in the case law regarding narcotics detection dogs and had developed his own forms to capture data in cases where K9 Bailey was utilized.

Cpl Dennany would probably rank in the top 1% of all dog handlers. He appears to have a natural temperament that is conducive to positive interaction with a canine partner. The interaction between this human-canine team has produced a highly effective tool for the University of Central Florida Police Department. No false alerts or training deficiencies were noted during this evaluation. The performance observed was at the highest level. As a result, several recommendations follow:

1. Cpl Dennany and K9 Bailey should join one of the national canine associations and compete at one of their field trials. Their high levels of performance are likely to produce recognition at the national level and add credibility to the pilot program.
2. Cpl Dennany and K9 Bailey should develop a working relationship with the Department of Homeland Security (i.e. the former U.S. Customs Service) with the goal of periodic deployment at the Orlando International Airport. This would allow both members of this K9 team to get exposure to a variety of different investigations and the opportunity to make large, high profile cases.

Appendix A: Supporting Case Law
Matheson v. State of Florida
2nd District Court of Appeal
C#2D00-1611

Opinion filed August 1, 2003.
Appeal from the Circuit Court for Hillsborough County;
Barbara Fleischer, Judge.
James Marion Moorman, Public Defender,
Celene Humphries, Special Assistant Public Defender, Bartow, for Appellant.
Charles J. Crist, Jr., Attorney General, Tallahassee, and
Susan M. Shanahan, Assistant Attorney General, Tampa, for Appellee.

NORTHCUTT, Judge.

Gary Alan Matheson maintains the State failed to prove that an alert by Razor, a narcotics detection dog in service to the Hillsborough County Sheriff's Office, furnished probable cause to search his vehicle. He advanced that position during his -2- prosecution for drug offenses in a motion to suppress the contraband discovered and seized during the search. When the circuit court denied the motion, Matheson pleaded no contest to three counts of possessing a controlled substance and one count of possessing drug paraphernalia. He reserved his right to appeal the denial of his dispositive motion to suppress. We reverse.

PROCEEDINGS BELOW

At the suppression hearing it was related that in May 1999 Razor was called upon to sniff Matheson's car after deputies stopped Matheson for a traffic infraction. During the traffic stop the deputies had made what they described as a routine request for permission to search Matheson's car. Matheson had declined; hence, the deputy called for Razor's assistance.

The State offered the testimony of Razor's handler, Deputy Greco, who recounted that he arrived at the scene as another deputy was writing Matheson a traffic citation. Deputy Greco testified that he followed his normal routine by taking Razor to the driver's side door of Matheson's car and quickly walking the dog around the car in a clockwise direction. Razor did not alert on this first pass. Deputy Greco then walked Razor slowly around the car, allowing him to linger at the "seams." This time, Razor scratched and bit at the edge of the car's hatchback, which Deputy Greco recognized as Razor's alert behavior. Deputy Greco advised his colleagues that Razor had alerted. They then

entered Matheson's car and searched it. In the rear of the car they discovered a bag containing drug paraphernalia, including syringes and spoons. In the glove -3-compartment the deputies found hydrocodone tablets, morphine tablets, and methamphetamine.

On the evening that Deputy Greco walked Razor around Matheson's car, he had been a canine handler for about twenty-one months. He testified that he had taken training both in canine patrol handling and in narcotics detection. He and Razor had been assigned to each other since both began their services in canine patrol in August 1997. Prior to Razor's sniff of Matheson's car, he had been certified to detect marijuana, cocaine and heroin. He subsequently was certified to detect methamphetamine.

On cross-examination, Deputy Greco acknowledged that he had not maintained a record of Razor's false alert rate. In fact, he often left the scene of a sniff after advising deputies that Razor had alerted, and thus never learned whether the alert had led to the discovery of contraband.

At the conclusion of Deputy Greco's testimony, the State rested. The circuit court agreed that the State had made a prima facie showing that the search of Matheson's car was supported by probable cause.

The defense then presented the testimony of Razor's trainer, Sergeant Olive. He testified that Razor completed a thirty-day course of training by the Hillsborough County Sheriff's Office in October 1997 and a one-week program under the auspices of the United States Police Canine Association in June 1998. During questioning about the specifics of the HCSO and USPCA training regimens, Sergeant Olive testified that Razor had received no training to discourage him from alerting to "dead scents," those being residual odors of drugs that are no -4- longer present. Sergeant Olive also confirmed that the Sheriff's Office did not maintain records of Razor's success rate. When explaining this, he maintained that it would be impossible to assess a dog's reliability "in the street" because the dog might alert on dead scents. Sergeant Olive asserted that he would not consider an alert on a dead scent to be a false alert because the dog had done what he was conditioned and certified to do, i.e., alert to the odor of contraband.

The defense submitted the expert testimony of Dr. Dan Craig, a veterinarian and animal behavior specialist whose background included extensive consultation with the United States military and other agencies regarding their detection dog programs. Dr. Craig testified that the HCSO training procedures used with Razor were too simplistic to make him reliable at detecting narcotics for six reasons. First, Razor received inadequate training for searching vehicles. Second, Razor was not trained with small quantities of drugs. Third, training officers failed to plant novel odors during Razor's training searches. Fourth, Razor was not subject to controlled negative testing, in which all objects or locations have no drugs present. Dr. Craig said that this type of testing indicates a false response rate and reveals whether the handler or the

dog is guessing. He added that preventing the handler from knowing whether drugs will be present during a training exercise reveals whether the handler is consciously or unconsciously prompting the dog to alert. Dr. Craig asserted that this type of testing is essential and should be performed periodically on a random basis. Fifth, Razor was not given extinction training, which would have discouraged him from alerting to common items that are sometimes associated with drugs, such as plastic bags used for packaging. Sixth, there was no evidence that Razor's training included "stimulus -5- generalization," which conditions a dog trained on one class of drugs to detect all drugs in that class. Addressing Razor's USPCA certification, Dr. Craig testified that there were a number of flaws in the USPCA certification procedures that rendered this certification insufficient evidence of Razor's reliability. First, the USPCA did not perform controlled negative testing. Second, the USPCA limited the dog's search time to ten minutes, which is shorter than "real world" searches. Third, the USPCA required only a seventy percent proficiency, which Dr. Craig considered insufficient. Fourth, the USPCA failed to focus on the dog's ability to detect narcotics, but analyzed the ability of the dog and handler as a team. Therefore, according to Dr. Craig, the USPCA could not truly certify the dog's individual ability to detect narcotics. Fifth, Razor was not certified to detect methamphetamine, and his training did not prepare him to reliably detect this substance.

DISCUSSION

Under the Fourth Amendment, a law enforcement officer may not search a place within the ambit of a person's legitimate expectation of privacy unless the officer has probable cause to believe that a search of that place at that time will uncover evidence of a crime. See *Pagan v. State*, 830 So. 2d 792, 806 (Fla. 2002), cert. denied, 123 S. Ct. 2278 (2003). Whether applying for a search warrant beforehand or justifying a warrantless search after the fact, it is the State's burden to show that the search will be or was justified by probable cause. See *Doorbal v. State*, 837 So. 2d 940, 952 (Fla.), cert. denied, 123 S. Ct. 2647 (2003); *Doctor v. State*, 596 So. 2d 442, 445 (Fla. 1992).-6-

In this case the State contends that it met its burden based on the testimony of Deputy Greco. It maintains that by proving Razor was trained and certified, it established prima facie that Razor's alert gave the deputies probable cause to believe Matheson's car contained contraband. This position finds support in several courts, including the United States Sixth Circuit Court of Appeals and the Georgia Court of Appeals. Those courts have held that a certification that a dog has been trained is prima facie proof of the dog's reliability which then may be rebutted by the presentation of evidence regarding the dog's performance or training. See *United States v. Hill*, 195F.3d 258, 273 (6th Cir. 1999); *United States v. Diaz*, 25 F.3d 392, 395 (6th Cir. 1994); *Warren v. State*, 561 S.E.2d 190, 194-95 (Ga. Ct. App. 2002); *Dawson v. State*, 518 S.E.2d 477, 481 (Ga. Ct. App. 1999). "Although the dog's 'credibility' may be

undermined by evidence of its lack of training or past unreliability, the ultimate determination as to whether the dog is sufficiently reliable to support a determination of probable cause is for the trial court as the trier of fact.” Dawson, 518 S.E.2d at 480. When the evidence presented, whether testimony from the dog’s trainer or records of the dog’s training, establishes that the dog is generally certified as a drug detection dog, any other evidence, including the testimony of other experts, that may detract from the reliability of the dog’s performance properly goes to the “credibility” of the dog. Lack of additional evidence, such as documentation of the exact course of training, similarly would affect the dog’s reliability.

As with the admissibility of evidence generally, the admissibility of evidence regarding a dog’s training and reliability is committed to the trial court’s sound discretion. Diaz, 25 F.3d at 394. “Prima facie” means that the proponent has fulfilled his duty to produce evidence and there is sufficient evidence for the court to consider the issue. Charles W.-7- Ehrhardt, Florida Evidence § 301.2 (2002). Thus, the proposition advanced by the State is that the fact that a dog has been trained and certified to detect narcotics, standing alone, justifies an officer’s reliance on the dog’s alert to establish probable cause to search. But our review of the record and of pertinent literature convinces us that this is not enough. Law enforcement use of narcotics detection dogs has become commonplace. And, generally, a trained dog’s alert on a vehicle may constitute probable cause to search. See State v. Russell, 557 So. 2d 666, 667 n.1 (Fla. 2d DCA 1990); Denton v. State, 524 So. 2d 495, 498 (Fla. 2d DCA 1988). The reason, of course, is the dog’s keen sense of smell. A dog’s nose is uniquely equipped to detect the faintest of odors. Dogs possess potentially billions of chemical receptors called olfactory cells. These receptors are located among large supports inside the dog’s nose named turbinate bones. Turbinate bones form numerous cylindrical passages that allow air exposure to millions more cells than is possible with simple tubular nasal passages, such as those found in human beings. Laid out, the surface area of these cells would cover a space the area of the skin on the dog’s body. In comparison, the surface area of human olfactory cells would cover no more than a postage stamp. The effect of the dog’s olfactory cells is not entirely clear. Some experts claim the result is an enhanced ability to detect minute levels of odorous material. Others assert that a canine’s strength lies in its ability to discriminate among odors. Scientists supporting the discrimination theory believe that each olfactory receptor responds to a different odor; the more receptors, the greater the power to distinguish between scents. The answer most likely lies somewhere between the two opposing theories.

* * *-8- Little doubt exists that dogs have the ability to detect the smallest traces of odors and to perceive these scents much better than human beings. Robert C. Bird, An Examination of the Training and Reliability of the Narcotics Detection Dog, 85 Ky. L.J. 405, 408-09 (1997). Certainly, the olfactory superiority of dogs recommends their use by law enforcement. But, when determining probable cause to search, it can also be a weakness. Many times the possibility

of a false alert will be overlooked by a handler as will the dog's inability to differentiate between a "live" scent and a "dead" scent. Each dog will also vary in its ability to ignore detractors and masking agents.

Max A. Hansen, *United States v. Solis: Have the Government's Supersniffers Come Down With a Case of Constitutional Nasal Congestion?*, 13 San Diego L. Rev. 410, 416 (1976). Indeed, in this case Razor's trainer acknowledged the tendency of narcotics detection dogs to alert on the residual odors of drugs that are no longer present. This underscores one of three central reasons why the fact that a dog has been trained, standing alone, is not enough to give an officer probable cause to search based on the dog's alert. Razor's trainer acknowledged that a trained dog, doing what he has been conditioned to do, imparts to the officer merely that he detects the odor of contraband. To be sure, as the trainer maintained, this may not be a false alert when assessing the success of the dog's conditioning. But for Fourth Amendment purposes it is neither false nor positive. The presence of a drug's odor at an intensity detectable by the dog, but not by the officer, does not mean that the drug itself is present. An officer who knows only that his dog is trained and certified, and who has no other information,-9- at most can only suspect that a search based on the dog's alert will yield contraband. Of course, mere suspicion cannot justify a search. See *Coney v. State*, 820 So. 2d1012, 1014 (Fla. 2d DCA 2002). It follows that proof of facts that could justify only a suspicion cannot prima facie establish probable cause. Another problem with predicating a finding of probable cause solely on the fact that a dog has been trained stems from inherent variables in the training endeavor. Although we commonly refer to the "training" of dogs, manifestly they are not trained in the sense that human beings may be trained. It is not a process of imparting knowledge and skills that dogs want or need. However much we dog lovers may tend to anthropomorphize their behavior, the fact is that dogs are not motivated to acquire skills that will assist them in their chosen profession of detecting contraband. Rather, dogs are "conditioned," that is, they are induced to respond in particular ways to particular stimuli. For law enforcement purposes, the ideal conditioning would yield a dog who always responds to specified stimuli in a consistent and recognizable way, yet never responds in that manner absent the stimuli. But this does not happen. While dogs are not motivated in ways that humans are, neither can they be calibrated to achieve mechanically consistent results.

As our record demonstrates, conditioning and certification programs vary widely in their methods, elements, and tolerances of failure. Consider, for example, the United States Customs Service regime:

The Customs Service puts its dog and handler teams through a rigorous twelve-week training course, where only half of the canines complete the training. Customs Service dogs are trained to disregard potential distractions such as food, harmless drugs, and residual scents. Agents present -10- distractions during training, and reward the dogs when those diversions are ignored. The teams must complete a certification exam in which the dog and handler must detect marijuana, hashish, heroin, and cocaine in a variety of environments. This

exam and the following annual recertifications must be completed perfectly, with no false alerts and no missed drugs. If a dog and handler team erroneously alerts, the team must undergo remedial training. If the team fails again, the team is disbanded, and the dog is permanently relieved from duty. Bird, 85 Ky. L.J. at 410-11. In contrast, the testimony below disclosed that Razor and his handler had undergone just one initial thirty-day training course and one week-long annual recertification course. In neither course was Razor conditioned to refrain from alerting to residual odors. Whereas the Customs Service will certify only dogs who achieve and maintain a perfect record, Razor's certification program accepted a seventy percent proficiency. These disparities demonstrate that simply characterizing a dog as "trained" and "certified" imparts scant information about what the dog has been conditioned to do or not to do, or how successfully.

Finally, dogs themselves vary in their abilities to accept, retain, or abide by their conditioning in widely varying environments and circumstances. "[E]ach dog's performance is affected differently by working conditions and its respective attention span. There is also the possibility that the handler may unintentionally or otherwise prompt his dog to alert." Hansen, 13 San Diego L. Rev. at 416. The Customs Service monitors its dogs' performance in the field. Recognizing that a dog's ability can change over time, it maintains records for only thirty to sixty days, then discards them because older records are not probative of the dog's skills. Bird, 85 Ky. L.J. at 415. The -11- Hillsborough County Sheriff's Office maintained no records of Razor's performance, and his handler had not kept track.

For these reasons, we conclude that the fact that a dog has been trained and certified, standing alone, is insufficient to give officers probable cause to search based on the dog's alert. One Florida case has recited additional factors that must be known in order to conclude that an alert by a narcotics detection dog is sufficiently "reliable" to furnish probable cause to search. In *State v. Foster*, 390 So. 2d 469 (Fla.3d DCA 1980), the Third District identified these factors as the exact training the detector dog has received; the standards or criteria employed in selecting dogs for marijuana detection training; the standards the dog was required to meet to successfully complete his training program; the "track record" of the dog up until the search (emphasis must be placed on the amount of false alerts or mistakes the dog has furnished). *Foster*, 390 So. 2d at 470 (quoting Hansen, 13 San Diego L. Rev. at 417). We agree with this list of factors, and we especially join in the *Foster* court's emphasis on the dog's performance history. A dog's alert can give an officer probable cause to search only if the officer reasonably believes that the dog would not exhibit the alert behavior unless contraband was present. Given the "language barrier" between humans and canines—thus, for example, preventing the officer from questioning the dog further for corroborative details, as he might a human informant—the most telling indicator of what the dog's behavior means is the dog's past performance in the field. Here, the State did not present any

evidence of Razor's track record. Accordingly, we conclude that the State did not meet its burden to establish that the deputies had probable cause to search Matheson's car.

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We note that, even if we were to accept the State's position that it made a prima facie showing of probable cause founded solely on the fact that Razor was trained and certified, that showing was rebutted as a matter of law. The deputies' own undisputed testimony at the suppression hearing established that they knew that Razor's reliability for detecting the presence of contraband in the field was ungauged and that it could not be predicted based on his particular conditioning. In light of these facts, Razor's alert could not have given the deputies probable cause to search under any test.

We reverse the denial of Matheson's motion to suppress and remand with directions to discharge him.

FULMER and STRINGER, JJ., Concur.

Appendix B: Original Press Release for Narcotics Canine

UCF Police Department Drug Dog Information Sheet

Drug dog's name: Bailey

Breed: Chocolate Labrador Retriever

Age: 2 years

Cost to University: None. He was donated by Phi Delta Theta fraternity who purchased him from the Labrador Retriever Rescue of South Florida.

K9 Handler: Corporal Dale Dennany.

Training: Currently training in tracking and evidence searches. Begins narcotics detection training in two weeks. Cadaver training will commence later in the semester.

Drug Odors Detected: Marijuana, crack cocaine, powder cocaine, methamphetamine, hashish, heroin & ecstasy.

Shift Assignment: Night shift but available for call-out 24 hours a day.

Deployments: Primary duties are patrol oriented search functions. However, public relations demonstrations and partnerships within and outside the University are expected. As a non-aggressive tracking dog, Bailey will be able to be used in a search and rescue function should the need arise. Additionally, he will be used within the classroom environment to enhance lectures in criminal justice and forensics.

Miscellaneous information: The model that our program is based upon is known as K9 Lite. It involves few start-up expenses and relies heavily upon community support, donations, creative financing, and grant funding. It is projected that the drug dog program will operate completely cost-free to the University. Training costs, the canine vehicle, the kennel that the dog rides in, and the officer's computer were all procured at no cost.

For more canine related information, please contact:

VII Photo



Corporal Dale Dennany (left), K9 Bailey (center), a representative of Phi Delta Theta (right)

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