The New Paradigm:

Police Trends Toward More Powerful Handguns

and the Mental Aspects of Combat Survival and Training

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Handguns have been a vital part of the American police arsenal since law enforcement's inception in this country. Through its glorification in Hollywood movies and its actual application by such legendary lawmen as Wyatt Earp and Charles Askins, the handgun's position in American culture and policing has been secured. Despite its portrayal as the primary police arm, the mission of the handgun is actually quite different. Its role is purely defensive. The handgun lacks sufficient power to provide any form of offensive force. The handgun's mission is to provide a police officer with the means by which to regain control of his or her immediate environment when attacked, quickly and with as few shots fired as possible (Taylor, 1999, p. 19). It must also be powerful enough to incapacitate, though not necessarily kill, the attacker. It is in this role that we explore the handgun's strengths and shortcomings, and analyze how those attributes, or the lack thereof, have resulted in a decade-long, nationwide transition to more powerful duty weapons for police officers in the United States.

Law enforcement's literal overnight switch to more powerful and higher capacity handguns has been loosely paralleled by the birth of the "officer survival movement" during the decade of the 1970s, when officer murders

reached the highest levels ever recorded. Subsequent drops in total numbers took place in spite of an escalating number of attacks on officers. It was not that that there were fewer gunfights. It was that the police were surviving more of them (Ayoob, 2000, p. 105). Police firearms trainers had discovered that pre-programming officers to train on the range for realistic combat conditions on the street had hardwired them for successful resolutions of deadly force encounters. The addition of role-playing, video training and the use of simulated paintball ammunition in training scenarios likely to be encountered by officers in the line of duty enabled them to successfully deal with the incredible physiological and psychological stressors associated with gunfights and surviving urban combat with dangerous, violent felons.

In this examination of police deadly force training and firearms trends, the correlation between the adoption of more powerful handguns and realistic training will demonstrate that the officer survival movement has greatly increased the odds that police officers will not only survive, but thrive, against armed and remorseless criminals.

Since the 1960s, American police officers have carried .357 Magnum revolvers made primarily by Smith and Wesson, Colt, and later, Ruger. Bullet-weights are measured in grains, and a .357 Magnum could launch a 125-grain jacketed hollowpoint (JHP) at 1450 feet per second (FPS). This incredible

ballistic performance led to a legendary reputation for the .357 Magnum on the mean streets of America's largest and most dangerous cities. According to Massad Ayoob (1999), a nationally recognized expert in the police application of deadly force, "The Indianapolis Police Department had gone to the cartridge [.357 Magnum] after a series of stopping failures with less effective .38 Special rounds that had led to tragedy. During the first ten shootings with the [125-grain JPH] .357 Magnum, there were ten instant, one-shot stops, including at least three which were arm and leg hits" (p. 72).

The .357 Magnum cartridge provided American police officers with unparalleled stopping power, yet it had many drawbacks. The round has too much flash at night, when most police firefights occur, and it could temporarily blind officers with its muzzle signature. The Magnum's report was deafening, and the revolvers themselves had to be extremely heavy to tame its recoil, which was considerable. Yet, the .357 Magnum round was not replaced in American police use for any of the aforementioned reasons. Rather, it was replaced because of its firing platform; a revolver holds only six rounds, and by the time gang-warfare erupted in U.S. cities, police officers had abandoned the .357 Magnum revolver literally overnight in favor of higher-capacity semiautomatic pistols chambered for the far less powerful nine-millimeter (9mm) round.

By the mid-1980s, places such as Los Angeles and Miami were experiencing major outbreaks of gang-related crimes of violence. A police officer armed with a .357 Magnum carried eighteen (18) rounds total on his or her person. Conversely, a gang-banger armed with a Glock Model 17 high-capacity semiautomatic pistol would often have fifteen to eighteen rounds in the weapon's magazine alone. American police refused to tolerate the "superior firepower" of criminals and this change in strategy sounded the death knell for the low-capacity revolver in law enforcement circles.

The cartridge of choice in all branches of United States law enforcement became the nine-millimeter (9mm) parabellum, a round of German origin designated in that country as the 9 x 19. Weighing an average of 115 grains, a standard 9mm bullet could be fired for a semiautomatic pistol at approximately 1100 feet per second (FPS). Though it was ballistically inferior to the highly regarded .357 Magnum, the 9mm offered the benefits of high-capacity and low recoil. Officers who were accustomed to carrying a total of eighteen (18) rounds of revolver ammunition could now carry forty-six (46) rounds of 9mm on their persons. The Illinois State Police were the first troopers in the nation to adopt semiautomatic pistols, Smith and Wesson's Model 39, chambered for the 9mm, in 1967 (Ayoob, 2000, p. 28). By the late 1980s, the revolutionary and immediate replacement of revolvers would be complete, with almost every major municipal, county, state, and federal law enforcement agency having

retired their trusted wheel guns in favor of the "wonder-nines." The case for high-capacity handguns in police holsters was considerable and valid. In 1977, firearms authority Massad Ayoob was given unlimited access to the gunfight files of the Illinois State Police, as aforementioned, the first law enforcement agency in the nation to adopt high-capacity semiautomatic 9mm pistols. He was also allowed to interview Illinois troopers who had been in gunfights. Echoing the views of the law enforcement community as a collective whole, Ayoob's (2000) findings supported the conclusion that the revolver was an expendable tool in the armories of American police departments:

> I was able to identify 13 men who had survived with the auto and probably would have perished had they been armed with six-shooters. Four of these were firepower saves. Two troopers had dropped their attackers with the seventh or eighth round in their guns, and neither would have had time to reload a revolver during the attack. Two more had survived because fast reloading had allowed them to sustain fire (p. 105).

The remainder had been saved in gun-grab attempts, either because the felon who gained control of their semiautomatic pistols could not find the manual safety lever, or because in the struggle the trooper had deliberately punched the magazine release button, activating the magazine disconnector safety and rendering the pistol unshootable. Moreover, Ayoob (2000) concluded that, due to the semiautomatic's greater "shootability" under stress, hit potential had risen from approximately twenty-five percent (25%) with the revolver to sixty-five percent (65%) with the pistol (p. 105). American law enforcement agencies throughout the United States subscribed to the belief that cartridge

capacity was to be considered an aspect of handgun effectiveness and stopping power (Thompson, 1999, p. 19).

The United States Federal Bureau of Investigation, in keeping with the nationwide retirement of revolvers, began to remove them from the armament inventories as well. In following the lead of police agencies across the country, the FBI's revolvers were replaced with 9mm semiautomic pistols, loaded with standard 9mm 115-grain jacketed hollowpoints. The remaining .357 Magnum revolvers in FBI service were loaded with far less potent 158-grain .38 Special rounds, which propelled a lead hollowpoint from a barrel at approximately 880 feet per second (Thompson, 1999, p. 17). Because of its aforementioned drawbacks, the FBI had avoided the full-power, 125-grain .357 Magnum.

As the 1980s drew to a close, the 9mm semiautomatic pistol reigned supreme. In addition to its dominance in American policing, the 9mm gained even more credibility after the adoption of this caliber by the United States armed forces (Thompson, 1999, p. 19). Officers around the country were unsettled about its limited ballistic performance capabilities, but the sheer number of rounds contained in the magazines of semiautomatic pistols pacified their misgivings. This was soon to change, and the end result would be yet

another nationwide transition in police handguns. However, this time, the 9mm round would be vilified in such a way that its dominance in the police market would be effectively over by the end of the 1980s.

Historically, police departments and officers are resistant to alterations and relish the status quo. Once a type of firearm, tactical response, or training practice has become accepted as a part of the agency's regimen or identity, administrators, trainers, and officers are fiercely loyal and extraordinarily resistant to change, even if improvements would result. A philosophy of change only after a critical incident has occurred permeates the law enforcement firearms community, and only the worst of catastrophes can spawn new directions in thinking and tactical practices. In the history of American policing, there have occurred seminal and cataclysmic events that have resulted in a revamping of firearms training philosophies and weaponry. Through years of police experience, personal research, and conversations with firearms trainers and gunfight survivors, two (2) events exist that have proven pivotal in the implementation of high-capacity, powerful firearms and the shift in doctrinal thinking about tactics and the dynamics of gunfight survival. Without question, the FBI's firefight in Miami is the single event that has lead to the paradigm shift toward more powerful handguns and was revolutionary in its impact on police tactical practices and the adoption of realistic training curriculums. The other event, though less significant in impact upon the law enforcement

firearms community than the Miami gunfight, is nonetheless an event that helped awaken firearms trainers and police agencies from their slumber and propelled changes in police armament and training to new heights of effectiveness. An examination of these tragedies and the lessons learned by police in the aftermath is merited. These deadly force episodes are as follows:

1. Newhall Tragedy
2. FBI Firefight

Newhall Tragedy

In the history of American law enforcement, no other tragedy has been more ignored, and more utterly violent, than the Newhall incident. Seemingly, the deaths of four (4) California Highway Patrolmen in 1970 during a single traffic stop were virtually ignored by the law enforcement community until years later. Bad training practices, poor police armament, and utter fear and chaos contributed to a massacre of officers not seen until that time or since. The manner in which the events of Newhall unfolded deserves to be studied thoroughly and the lessons learned from the sacrifices of these dead patrol officers passed on to all, thereby ensuring that their deaths were not in vain. This is their story.

On April 5, 1970, in Newhall, California, two armed suspects in the parking lot of a small restaurant gunned down four California Highway Patrolmen shortly before midnight. This happened while they were in the process of making a traffic stop on a vehicle whose occupants were wanted for brandishing a firearm at a passing motorist. This fatal shooting was the worst tragedy ever suffered by the California Highway Patrol since it was formed in 1929 (Remsberg, 1986, p. 1). The four officers, Walter C. Frago, 23; Roger D. Gore, 23; James E. Pence, Jr., 24; and George M. Alleyn, 24, were all from the Newhall, California area and had been on the job less than two years (Ayoob, 2000, p. 14).

The first suspect of this shooting incident was Bobby Davis, age 27. Davis had prior arrests and convictions of bank robbery, aggravated robbery, assault on a federal officer and attempted escape. During his time in prison, Davis made many statements to the effect that he hated policemen and would kill any who tried to arrest him again. After his arrest in 1964 for bank robbery, he recounted to a police detective that an Arizona Highway Patrolman stopped him who did not recognize him and was not aware that he was wanted. When asked what he would have done if the officer had recognized him, Davis looked at the detective in the eye and said, “I’d have killed him deader than hell” (Remsberg, 1986, p. 2).

The second suspect was Jack Wright Twining, 35 years of age. Twining was first arrested at the age of fifteen for burglary in Pennsylvania. Numerous arrests followed, with charges including the attempted murder of a police officer and bank robbery.

During the afternoon of the murders, the two suspects drove to the Newhall area to practice shooting and to try out two walkie-talkies. Later that same night, Jack Tidwell and his wife, Pamela, were en route to a vacation stop in northern California. Tidwell saw the suspect's car make a reckless, illegal turn across the center divider and directly into his path. Tidwell had to swerve into the left lane to avoid a serious collision.

The suspect vehicle pulled to the right side of the road and stopped. Tidwell pulled alongside the driver's side of the vehicle and his wife rolled her window down. Tidwell told the driver of the other vehicle that he did not like the way he was driving and would like to "kick his ass." (Ayoob, 2000, p. 15). He further told the driver he had his license number and was going to turn him in to the California Highway Patrol. The driver, alone in the vehicle, cursed Tidwell and pointed a revolver at him. Pamela Tidwell became hysterical and her husband, observing a truck approaching from the rear, told the suspect as a ruse that the California Highway Patrol was right behind him. The suspect looked back over his shoulder, and seeing headlights approaching, waved at

the Tidwells with the revolver, indicating that they should leave. The Tidwells fled.

Shortly thereafter, Tidwell stopped at a nearby pay-telephone and notified the California Highway Patrol in Newhall. Tidwell provided a description of the suspect and vehicle. Officers Gore and Frago were north of the location and set up to intercept the suspect vehicle. A few minutes after Tidwell signed his complaint against the suspect, Officers Gore and Frago spotted the suspect vehicle and radioed that they were behind it. Officers Gore and Frago requested backup in order to make a safer felony traffic stop. Assisting Officers Pence and Alleyn, who were nearby, observed the suspect vehicle as it exited the freeway and notified dispatch. As the suspects left the freeway, they were aware that officers of the California Highway Patrol were behind them. Later, during a telephone conversation with Twining, he indicated that it was at this point that they decided to take on the officers rather than submit to arrest (Remsberg, 1986, p. 2).

When the suspect vehicle entered a local restaurant parking lot, Officers Gore and Frago turned on both red and white spotlights. When the suspect vehicle came to a stop, both officers exited the patrol car and moved up front. Officer Gore had drawn his service revolver and was lying over the fender.

He had extended his arm and the revolver toward the suspects, who were still seated inside their car. Officer Frago, with a California Highway Patrol 12-gauge shotgun in a port arms position, stood near the right front fender behind the headlights of the patrol car.

Gore ordered the suspect out of their car approximately three times saying, "Get out of the car with your hands up!" (Remsberg, 1986, p. 2). Both suspects were clearly visible to witnesses a short distance away. The area was well lighted and the patrol car headlamps and white spotlight further illuminated the interior of the suspect vehicle. It is a generally accepted conclusion amongst students of police deadly force incidents that the officers were aware that there were two occupants.

The driver of the suspect vehicle, Davis, got out of the vehicle. Davis raised his hand and Officer Gore order him to spread his legs and lean against the left side of the suspect vehicle. Davis complied. Officer Gore advanced from his position of nominal cover at the left front fender of the patrol car. Officer Frago also advanced to the right side of the suspect vehicle. The passenger door was still closed. As Frago approached the right door, he was seen with the shotgun in a port arms position and reaching for the door handle with his left hand. It is not known whether he had chambered a round in the shotgun or not, but it is believed that he had.

At that moment, the door was opened and Officer Frago began to swing his shotgun down. The second suspect, passenger Twining, turned in his seat and suddenly fired two shots from a .357 Magnum revolver. Both bullets struck Officer Frago in the chest, inflicting non-survivable wounds. Officer Frago collapsed and died almost instantly.

Twining jumped out of the car and began firing at Officer Gore across the rear deck lid of the suspect vehicle. Officer Gore, attracted by the shots that were fired at Officer Frago, turned to his right and fired at him. His shots missed. With Officer Gore's attention diverted, Davis turned and drew the revolver from his waistband that he had earlier aimed at complainant Tidwell. Davis fired at Officer Gore, who was struck in the chest with two bullets, traversing at an angle from left front to right back and the officer collapsed (Remsberg, 1986, p. 3). According to witnesses, death was instantaneous.

As Officer Gore fell to the pavement, Officers Pence and Alleyn arrived, coming to a stop parallel to the first police car. No sooner had they stopped than the officers were met with concentrated gunfire from both suspects, who had rearmed with new weapons from their car just prior to the arrival of Officers Pence and Alleyn. Davis emerged with a 12-gauge pump shotgun and

Twining a .45 caliber semiautomatic pistol. As the suspects exited their vehicle, Davis moved to the front and fired one round from the shotgun across the hood of the second patrol car. Twining fired one round from the .45 semiautomatic and the pistol jammed. It was later found in the back of the suspect vehicle, with seven unfired cartridges in the magazine and the slide locked to the rear (Remsberg, 1986, p. 4). Officer Pence stepped out of the driver's door of his patrol car and began returning fire with his .38 caliber revolver from a position behind the left front door. Officer Alleyn exited with his shotgun and chambered a round. Met by heavy gunfire and in an exposed position, he moved back between the patrol cars and around the rear of the first patrol vehicle. At this point, Officer Alleyn apparently again operated the slide mechanism of the shotgun, forgetting that he had done so already as he emerged from his patrol unit. Massad Ayoob's (2000) research found that one live and three spent shotgun shell casings were found next to where Officer Alleyn had been standing (p. 15). When the .45 caliber semiautomatic pistol had jammed, Twining reentered the suspect vehicle for still a third weapon. While he was in the car, one of Officer Alleyn's three shotgun blasts shattered the rear window of the suspect vehicle. One pellet struck Twining in the forehead, inflicting a minor but painful wound. Twining exited the suspect car on the driver's side and began firing at Officer Pence with the second .45 caliber semiautomatic pistol. In the meantime, Davis advanced to a position in front of and between the patrol cars, still armed with a shotgun. When Officer

Alleyn realized his shotgun was empty, he retreated to the rear of his patrol car, dropped the shotgun and began firing with his .38 caliber revolver. Officer Alleyn moved to the left rear corner of the car and rose up. Davis then fired at him with the shotgun, striking the officer in the face and chest. Mortally wounded, Officer Alleyn tried to hold himself up by leaning on the patrol car's trunk. Davis fired another round, which also struck Officer Alleyn in the upper body. At this point, Officer Alleyn collapsed on the parking lot and expired.

When Officer Pence ran out of ammunition, he kneeled at the left rear of his unit and started reloading. Twining moved out of the left side of the suspect vehicle, where he had a clear shot at Officer Pence. Twining fired at least four shots with the .45 caliber semiautomatic pistol, striking Officer Pence twice in the lower chest and twice in the upper legs. One of the rounds struck his leg bone and caused a compound fracture. Badly wounded, Officer Pence fell to the ground. Twining then approached along the left side of the patrol car to a position near the left rear fender and fired point blank into the back of the officer's head. Just before he fired the fatal shot, the suspect was hear to yell, "I've got you now!" (Remsberg, 1986, p. 3). In little more than four minutes, four members of the California Highway Patrol, perhaps the most prestigious state law enforcement agency in the United States, were martyred at the hands of illiterate ex-convicts in the parking lot of a small country restaurant, the

victims of inferior weaponry and ineffective tactical training. The modern officer survival movement had its catalyst for change.

Aftermath

During the short-lived gunfight at Newhall, a total of forty (40) shots were exchanged between the suspect and the four officers. According to Remsberg (1986), the officers fired fifteen rounds, while the suspects fired twenty-five (p. 3). It is significant to note that in the Newhall firefight, none of the four officers involved were able to incapacitate Twining or Davis with accurate return fire. This was to become a horribly predictable trend that has only recently seen a measure of rectification thanks in no small measure to the lessons learned in this and other bloody police firefights. The suspects were heavily armed, but the advantage was not so great as to have resulted in the slaughter of four officers. The revolvers utilized by felon Davis held six rounds, the same as those issued to the officers. Suspect Twining's .45 caliber semiautomatic pistol had a seven round capacity in its magazine, an advantage of only one round over the revolvers utilized by the highway patrolmen. The difference, later reflected in revamped and modernized training, was in the disparity of tactics. In this critical component of gunfighting, the criminals held the clear advantage. Only Officer Alleyn moved with any clarity of purpose; however, he was unable to defeat multiple suspects because his fellow officers had proven ineffectual in combat.

At least one of the officers was found clenching fired and spent .38 caliber casings in his cold, dead hand, the result of an instinctive reversion to range training during the firefight. During range training, cadets were required by firearms instructors to “pick up their brass” before moving on to the next stage, where they would fire at stationary targets, not ones that simulated movement as exhibited by Twining and Davis. The California Highway Patrol demanded a clean, static range at the expense of training its officers to utilize cover, movement, and quick reloading of weapons. Officers Gore, Alleyn, Frago, and Pence paid the ultimate price for the California Highway Patrol’s inadequate firearms training practices. Simply put, officers of the era were not equipped, either with the weaponry, realistic training or mental conditioning, to deal with well-armed, aggressive and motivated felons.

FBI Firefight

Outside of the 1963 Kennedy assassination, no modern homicide by gunfire has been more extensively examined and caused more speculation than what has come to be known as the FBI Miami firefight of April 11, 1986 (Speir, 2000, p. 74). It was this four-minute massacre, and the perceived failure of the FBI’s 9mm ammunition to stop a very skilled and aggressive felon, that would result in the almost immediate, national move away from the caliber.

During the summer of 1985, Michael Platt and William Matix, both United States Army veterans, had robbed many Miami-area banks, killing several security guards in the process. During a stakeout of the area where the robberies had been occurring, two FBI agents spotted Platt and Matix in their Monte Carlo. Once six agents in multiple vehicles converged on the still-mobile felons, Supervisory Special Agent Gordon McNeill saw Platt loading a high-capacity magazine into a Ruger Mini-14 assault rifle (Speir, 2000, p. 75).

Though no FBI agents were armed with any firearms remotely as capable as the Mini-14 assault rifle in Platt's hands, McNeill ordered that a felony traffic stop be conducted. The ensuing crash was devastating. One agent lost his glasses and two others lost control of their six-shot revolvers, which were downloaded with FBI-issue .38 Special 158-grain lead hollowpoints rather than full-power .357 Magnum rounds. Though the numerical odds were in favor of the FBI, who had six agents at the scene, the two military-trained felons began firing immediately and with devastating effect.

Platt, firing the Mini-14 assault rifle from his wrecked Monte Carlo and directly in the face of his partner Matix, killed an FBI agent before he could even exit his vehicle. As Platt dove from his car, he was immediately shot in the side with a 115-grain 9mm Winchester Silvertip hollowpoint fired by

Special Agent Ben Grogan in what has been referred to as the “million dollar shot” (Speir, 2000, p. 75). The 9mm Silvertip hollowpoint penetrated his arm, then his chest, and finally came to rest [almost fully expanded] in Platt’s right-lung, failing to reach the heart (www.evanmarshall.com). The bullet worked exactly as designed, except that it did not penetrate far enough to reach any vital organs.

Matix, who had taken a .38 Special round to the face early on, was effectively out of action. However, Platt continued to fire his Mini-14 assault rifle while moving from point to point behind cover. During the encounter, Platt absorbed two more rounds, one from a .38 Special and another from a Smith and Wesson semiautomatic pistol, again loaded with 115-grain 9mm Winchester Silvertips. What he [Platt] would almost certainly have been unaware of was that he was already a dead man (Speir, 2000, 75). However, since he had not been shot in the central nervous system of his body, he was able to continue fighting effectively for several more minutes while his blood pressure gradually dropped.

Platt, sensing escape, climbed into an empty FBI vehicle, where he was joined by his accomplice Matix, who was still alive and functioning despite his massive head-wound. As the murderous felons prepared to flee, gravely wounded FBI agent Ed Mireles began firing at their car. Using one hand to

manipulate the slide-action on a Remington Model 870 12-gauge pump shotgun, Mireles began shooting buckshot at Platt and Matix. When the shotgun was emptied, Mireles resorted to his six-shot Smith and Wesson revolver. Two .38 Special rounds killed Matix, yet it took four more to stop Platt, who had already absorbed the aforementioned three earlier in the firefight. This incident marked the bloodiest day in the history of the FBI. When it was finally over, Platt, armed with the Mini-14 rifle, had killed two special agents and wounded five (www.evanmarshall.com).

Aftermath

A few months following that infamous Friday morning, the FBI convened its first Wound Ballistics Workshop on September 15-17, 1987, to see what direction the Bureau should pursue to more effectively arm its agents (Speir, 2000, 78). John Hall, then the head of the FBI's Firearms Training Unit, had made the startling pronouncement, "All else aside, Miami was an ammunition failure" (www.evanmarshall.com).

During this seminar, the FBI concluded that the 115-grain 9mm Winchester Silvertip had failed to immediately stop a rampaging felon and that it would no longer be considered a viable police round for duty use and issuance to field agents. Additionally, the FBI correctly determined that, except for hits to the central nervous system (CNS), reliable and reproducible instant incapacitation

is not possible with any handgun bullet; however, the single most important factor in assessing the effectiveness of any caliber is penetration (www.evanmarshall.com). It was this capability that the 9mm, specifically the 115-grain jacketed hollowpoint, was found to be lacking. Furthermore, the FBI concluded that, given equal penetration, a bigger and heavier bullet would disrupt more tissue and hopefully cause greater bleeding, the primary factor in incapacitation excluding a shot to the central nervous system.

Lastly, the FBI concluded that there were four components of projectile wounding that are as follows: penetration, permanent cavity, temporary cavity, and fragmentation (www.firearmstactical.com). Using the data collected from previous law enforcement deadly force incidents, the FBI concluded that a larger, more powerful bullet would be needed in order to provide field agents with handguns capable of meeting the criteria set forth during the 1987 Wound Ballistics Workshop.

Ever vigilant, the FBI went about developing its own cartridge, a ten-millimeter (10mm) bullet that could launch a 180-grain jacketed hollowpoint at a sizzling 1250 feet per second (www.clede.com). The 10mm proved to be too powerful and wrecked the Smith and Wesson pistols built to fire it. An ill-fated attempt was also made by the FBI to produce a redesigned, heavier 9mm bullet, a 147-grain “subsonic” hollowpoint traveling at 990 feet per second that

would penetrate an offender's vital organs yet still be more comfortable to fire for smaller male and female officers than the powerful 10mm. The 147-grain subsonic was an abysmal failure because it lacked sufficient velocity and kinetic energy to expand and was horribly overpenetrative. According to noted stopping power authority Ed Sanow (2001), "By the late 1980s, the 9mm caliber was so linked with the FBI shootout in Miami and the 147-grain subsonic round, when these hollowpoints failed on the street, police viewed this as a failure of the entire caliber" (p. 77).

Overnight Revolution Toward Power

During 1990, in response to requests from the FBI and law enforcement agencies across the America, Smith and Wesson and Winchester jointly introduced the .40 caliber cartridge (Ayoob, 2000, p. 27). This cartridge was initially loaded with a 180-grain jacketed hollowpoint that was propelled to a velocity of 950 feet per second. The .40 caliber was dimensionally identical to the failed FBI 10mm. Although much slower than the 10mm, the .40 was easier to control and quickly established itself as the premier law enforcement round. In a southern shooting featuring the new .40 caliber round, two agents with Glock pistols shot a felon at the same time. One hit the heart and the other the brain. The aggressor was dead before his corpse dropped the .38 revolver he had aimed at the officers (www.clede.com).

Other advantages began to emerge. The FBI's 10mm was a long cartridge that required a large handgun, whereas the shorter .40 caliber could work in existing pistols with 9mm dimensions (Ayoob, 2000, p. 28). Using the .40 caliber round, police could increase their stopping power enormously yet retain the treasured fifteen-round capacities of their now defunct 9mm pistols. The legendary .357 Magnum had been around for decades before it was adopted by police; however, conditions were so unique and its attributes so positive that in the early 1990s the .40 caliber round became an instant success.

In an unprecedented transition, police departments throughout the United States began retiring their 9mm pistols in favor of more powerful handguns chambered for the new .40 caliber. Police agencies on the West Coast led the .40 caliber charge. The California Highway Patrol adopted the Smith and Wesson Model 4006 in the new caliber, and the Berkley, California, Police Department became the first municipal agency to issue the .40 utilizing Glock pistols (Ayoob, 2000, p. 28). The East Coast was not far behind. South Carolina ignored the 9mm altogether and went directly from their beloved .357 Magnum revolvers to Glocks chambered for the .40 caliber round (Ayoob, 2000, p. 28).

As the .40 caliber gained nationwide prominence and popularity, experiments began which saw the weights of the bullets decrease in

an attempt to replicate the street-proven performance of the .357 Magnum while meeting the FBI's desired levels of penetration. The resultant .40 caliber bullet would feature hollowpoints weighing 135, 155, and 165 grains. The .40 155-grain Federal Classic hollowpoint was the United States Border Patrol's choice when it replaced the 9mm and that agency's success with it in actual gunfights has led to comparisons with the .357 Magnum (Petty, 1998, p. 83).

Though the .40 has achieved prominence in police circles, the century-old .45 cartridge has also received a new lease on life. Designed in the early twentieth century, the .45 caliber round pushes a very large 230-grain bullet at 880 feet per second. Though it lacks the speed of the .357 Magnum and the .40, the .45 more than makes up for it in sheer size of caliber and bullet cross-section. A round proven in actual military combat, the .45 has been reborn with departments such as Chicago and Los Angeles. Even the FBI, whose testing results following the Miami disaster were the catalyst for the nationwide transition to the .40 caliber, allows its elite Hostage Rescue Team to arm themselves with high-capacity .45-caliber semiautomatic pistols (Ayoob, 1999, p. 76).

As we enter the new century, another promising round has been developed whose makers hope will directly duplicate the stopping power of the .357

Magnum but in a high-capacity semiautomatic pistol. Ted Rowe, Chief Executive Officer for firearms manufacturer Sigarms, designed the .357 Sig cartridge in response to police fondness for the performance of the old .357 Magnum round (Ayoob, 2000, p. 29). The new .357 Sig round is comprised of a .40 caliber casing necked down to 9mm dimensions. The new cartridge's 125-grain hollowpoint launches from pistol barrels at a blistering 1450 feet per second, exactly replicating .357 Magnum ballistics but in a package that is lighter and holds nearly three times as many rounds as the old revolver with less recoil. Delaware, Texas and Virginia state troopers have all been issued pistols in the .357 Sig caliber and no one has any complaints (Ayoob, 2000, p. 29).

During the fifteen years which have passed since that tragic day in Miami, municipal, state, and federal law enforcement agencies all across the United States have followed the lead of the FBI in upgrading the power of their handguns. In fact, the trend toward power and high-capacity has been so completely thorough that not a single American state police agency issues revolvers to its troopers. According to Cameron Hopkins (2001), the guns of the state police are illustrated below (p. 128).

Guns of the State Police

State	Caliber	State	Caliber
Alabama	.40 S&W	Montana	9mm
Alaska	.40 S&W	Nebraska	.40 S&W
Arizona	.357 Sig	New Hampshire	.45 ACP
Arkansas	.45 ACP	Nevada	.40 S&W

State	Caliber
California	.40 S&W
Colorado	.40 S&W
Connecticut	.40 S&W
Delaware	.357 Sig
D.C.	9mm
Florida	.40 S&W
Georgia	.40 S&W
Hawaii	9mm
Idaho	.45 ACP
Illinois	.40 S&W
Indiana	9mm
Iowa	.40 S&W
Kansas	.45 ACP
Kentucky	.40 S&W
Louisiana	.40 S&W
Maine	.45 ACP
Maryland	.40 S&W
Massachusetts	.40 S&W
Michigan	9mm
Minnesota	.40 S&W
Mississippi	.40 S&W
Missouri	.40 S&W
New Jersey	9mm
New Mexico	.357 Sig
New York	9mm
North Carolina	.40 S&W
North Dakota	.45 ACP
Ohio	.40 S&W
Oklahoma	.40 S&W
Oregon	.40 S&W
Pennsylvania	9mm
Rhode Island	.40 S&W
South Carolina	.40 S&W
South Dakota	9mm
Tennessee	.40 S&W
Texas	.357 Sig
Utah	.40 S&W
Vermont	.357 Sig
Virginia	.357 Sig
Washington	9mm
West Virginia	.40 S&W
Wisconsin	9mm
Wyoming	9mm

State Police Calibers

Caliber	Count
.40 S&W:	27
9mm:	12
.45 ACP:	6
.357 Sig:	5

Training for Realism in Combat

Police combat training has evolved more in the last thirty years than in all of history before that, and mirroring the search for more effective handguns, has been driven by the senseless and avoidable slaughters of law enforcement officers in places like Waco, South Carolina, Newhall and Miami. Incredible discoveries are continually being made in the fields of police psychological and physiological reactions to deadly force encounters and what happens to the human body, both voluntarily and involuntarily, during the incredible stresses associated with lethal combat. Post-traumatic stress disorder (PTSD) and the long-term effects of the police use of deadly force by officers are finally

starting to be understood. These remarkable breakthroughs in law enforcement's understanding of deadly force dynamics are being applied to the training of police officers for survival in street combat. The addition of realism to the police firearms training curriculum has been the key (Ayoob, 2000, p. 42). Not to be ignored are the additions of moving hostile targets and photographic targets showing armed offenders rather than standard silhouette targets showing a non-photographic humanoid shape. Officers are being taught to shoot while moving to cover and to reload quickly under stress. The results on the street have been nothing short of remarkable. According to noted self-defense trainer and firearms authority Clint Smith (2003) of the Thunder Ranch training facility, "More police gunfights are occurring than ever before and fewer officers are being killed because of the implementation of realism in training scenarios" (p. 24). Influenced by the aforementioned killings of police officers at the hands of violent felons, the alterations and improvements in police firearms training can be readily identified and are as follows:

1. Systemized Training
2. Modern Techniques
3. Visualization Training
4. Role Playing
5. Into the Future

Systemized Training

Murders of American police in the line of duty peaked during the 1970s (Ayoob, 2000, p. 105). However, as training improved and more powerful armament was issued to officers, police began not only surviving deadly force encounters, but also winning.

Several factors were simultaneously at work here. For the first time, thanks to a few progressive companies, police had soft concealable body armor designed to be constantly worn and to defeat lethal threats from shotguns and handguns.

In 1975, Kansas City Police Academy Instructor Jim Lindell began teaching the first structured handgun retention system (Remsberg, 1997, p. 34). This, coupled with the rapid development of grab-resistant holsters, may have saved as many police lives as body armor. During that time, a disproportionate number of officers were slain with their own weapons during gun-grabs by homicidal criminals. By the late 1990s, that figure was down below ten percent (10%), cut by more than half from the previous two decades (Remsberg, 1997, p. 35). The systemized concept of gun retention, the selection of secure holsters and reliable weapons, and an emphasis on sighted fire and quick draws proved extremely effective in saving police lives.

Modern Techniques

Massad Ayoob (2000) states emphatically that, “Had it not been for Colonel Jeff Cooper, our police might yet be taught in the academy to shoot from hip level in a crouch at distances of 7 yards or closer, and would still be likely to miss” (p. 105). Colonel Jeff Cooper, a legendary figure in the self-defense community, developed what is known as “The Modern Technique of the Pistol.” The Los Angeles Police Department, upon adopting Cooper’s methods of firearms usage, saw officers’ hit rates soar (Ayoob, 2000, p.106). Officers instructed in Cooper’s technique learned to raise their sidearms in both hands and to look for their gunsights, particularly the front sight, when they fired in self-defense. So influential is Cooper’s “Modern Technique of the Pistol” that it has been adopted by police and military units around the world.

Visualization Training

Visualization training, a concept first popularized in sports, found its way into police and military combat training. It was explained that when an individual strongly visualizes himself performing a technique, the neurons in his body are firing as if he was actually performing it (Ayoob, 2000, p. 105).

While not as useful for developing long-term muscle memory, which would allow physical combat techniques to be carried out as complete repetitions in

practice, visualization worked well between training sessions. Programming the minds of police officers with successful resolutions to deadly force encounters has proven remarkably successful. Many police and citizens who have survived gun violence have given partial credit for their survival to having visualized their responses beforehand.

Role-Playing

Role-playing, by all accounts, has been enormously beneficial. Training simulations, such as the old "Hogan's Alley," have been supplanted by more modern methods. Man-on-man acting out, now commonly known as "force on force simulation," is perhaps the greatest instructional discovery in the history of police firearms training. It began with toy guns, quickly progressing to the military's MILES (Multiple Integrated Laser Engagement Systems) vests and guns, then paintball guns, and finally, actual service weapons modified to fire paintball projectiles from cartridges (Ayoob, 2000, p. 107).

Interactive video, such as the Firearms Training Simulator (FATS), have now reached a level of sophistication that allows the action on a very large screen to branch in response to police officers' actions and hits. Officers are equipped with non-lethal handguns, shotguns, and pepper-spray canisters that simulate the gear they carry daily while on duty. Such virtual reality training has enhanced the odds of survival for those officers fortunate enough to be

immersed in the training. In no way is the impact of this revolutionary role-playing training secondary to the recent police transition to more powerful handguns and calibers. Experience is absolutely the greatest teacher, and training of this kind is as close to authentically replicated experience as can be attained.

Into the Future

The lessons of Newhall and Miami did not die with the slain officers. Without question, and based on its proven success, the American law enforcement community will continue to see mental and emotional preparation for conflict becoming a greater focus of training in the future.

Lieutenant Colonel Dave Grossman's groundbreaking book *On Killing* has been read and endorsed by many of the nation's finest firearms instructors, police officers, and military personnel. Grossman emphasizes the mental preparation of the police officer and soldier to use deadly force if necessary, without losing their status as a well-adjusted person of values and character. If ever a book was written for officers on the front-lines in the deadly war on crime, *On Killing* is it and should be required reading for every police academy in the United States and abroad.

Many trends will emerge in the near future as police firearms instructors and self-defense experts continue to expand their base of knowledge. Some will quickly be exposed as junk science and discarded. Other will follow prior discoveries and lessons learned from Newhall and Miami, and increase the likelihood that police officers will survive violent armed encounters forced upon them by remorseless, homicidal criminals.

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