VIOLATOR MOVEMENT TIMES VS. OFFICER RESPONSE TIMES IN ARMED ENCOUNTERS

by Raymond P. Rheingans

June 1998

The use of deadly force against another human being is one of the most crucial and widely debated actions taken by law enforcement officers. Usually, this action involves the use of the officer's firearm to defend himself or a third party. In many cases, the officer is confronted with a spontaneous threat and is forced to make split-second decisions, which affect his survival or the survival of another. This decision will be based upon many things including case law, laws of the state or jurisdiction in which he serves, department policy, training, experience and personal values. The decision of this officer will then be reviewed by his department, the public, the media and the prosecutor for correctness.

With so many factors involved in this critical decision, there always seems to be room to criticize the officer's actions. To some, it would seem that this decision would be obvious. However, those who would simplify this decision have probably been influenced, at least to some degree, by the less than realistic portrayal of the deadly force encounter viewed many times each evening on television across America. These portrayals are not only staged, but they give the public and sometimes police officers themselves, unrealistic expectations about the abilities of police officers and the criminal element. The decision to use deadly force ultimately becomes subjective in nature. It is the perception of reality as portrayed by television and the movies, which then can become a standard by which the officer is judged. To those who regularly observe the police on television shoot weapons from the hands of assailants, or disarm subjects with knives, the harsh reality of actual police involved deadly force encounters can seem excessive. It is these types of misconceptions and problems that can add to complicate an already critical decision by a police officer. To assist the police officer with this decision, definition must be given to the question of time and or the distance at which a subject who is armed becomes an actual deadly threat to the officer.

A review of the most recent FBI Law Enforcement Officers Killed and Assaulted Summary (1994) reveals the gravity of these problems. This document reports that during the ten year period 1985-1994, 426 officers were killed with handguns, excluding those taken from the officer and used to kill him. These were instances where the suspect had a handgun on or near him when contacted by the officer, and that weapon was subsequently used to kill the officer. During 1994, 64,912 police officers were assaulted, but not killed; 3168 with firearms, 1513 with knives and 7210 with other deadly instruments. In 1994 alone, a police officer was assaulted or killed with a firearm every 2.6 hours. Consequently, less than every three hours a police officer and his agency were faced with a deadly force encounter and the aftermath that such a decision ultimately brings.

The problem for the law enforcement community involves the requirement to justify, account and explain to the public that their use of deadly force was proper and necessary. This is complicated by the perceptions mentioned above and the complex nature of most combat situations. Historically, the bulk of this justification and explanation has fallen to the intuition of the police officer and their training as provided by their firearm instructors. Few would argue that a gun pointed at the officer is a deadly threat and justifies a deadly force response by the officer. But, if a subject with a gun in his hand simply points at the ground, when does this subject become a deadly threat, how far must the gun move, if at all, before the officer is in jeopardy? What quantitative data does the police agency have to validate their answers to these questions? To address these issues, this research was undertaken.

Methodology

A timing device was constructed by wiring a PACT shooting timer to a normally closed switch that passes 110 volts. This allowed the PACT timer to activate a light mounted to a target frame at the instant the PACT timer began timing. Since police officers are normally alerted to a deadly force threat through the sense of sight, which stimulates a deadly force response by the officer, it was decided that it would be more appropriate to use a visual start signal, in place of

the auditory start signal the PACT timer normally uses. The audible signal was deactivated.

For this project, one test was utilized for the officer portion of the testing. In this test, the officer shot a total of eight rounds, one round per trial, from a distance of five yards. The target, a large (8 x 14 inch) yellow piece of paper, was placed on a white background on the target frame, the yellow paper representing center body mass. The test started with the officer's gun in the holster. The officers were instructed to draw and fire one round at the target when they saw the light come on. The officers were instructed to complete this task as quickly as possible, but carefully enough to guarantee a hit on the yellow paper. Any shots that did not impact in the designated yellow are were not used to calculate the times, but were recorded to determine hit ratio. A total of 45 officers participated in this test.

In the suspect portion of the testing a broadcast quality video camera was utilized to record various suspect actions. By using the time generator it was possible to measure the time it took for these actions to be completed. This portion of the test involved three actions, which were a raise and fire of a handgun being held muzzle down along the pant seam of the suspect (raise and fire), a draw from the waistband (belly draw) in the front of the pants, a draw from the waistband (rear draw) in the small of the back.

Results and Findings

The results of the tests are shown below:

Officer Test

Draw from holster   1.90 seconds

Suspect Tests

Front Draw   1.09 seconds
Rear Draw   .78 seconds
Raise and Fire   .59 seconds

Statistical analysis was conducted on the data collected to determine its statistical significance. The results of the offender test were compared to the results of the officer test for statistical significance using one and two tailed t-Tests. In each instance, statistical significance was found.

Conclusions

The results of this study have some strong implications for the teaching of firearms to law enforcement personnel. The general belief is that a police officer is not justified in shooting an armed subject until the subject's weapon begins to move to be pointed at the officer or another person. However, in many situations, the officer is going to lose if he waits that long to engage the suspect. Compare, for instance, the officer's time for shooting at one large target with the weapon being drawn form the holster (1.90 seconds) with the offender's movement time for an inside the pants (belly) draw (1.11 seconds). This means that an officer who is unaware of a subject's weapon could be behind by .79 seconds or more if the subject suddenly drew his weapon. The suspect could, therefore, fire one and maybe more rounds at the officer before the officer could return fire.

This can be explained by the relationship between the mental process of reaction time to the physical process of movement time. The suspect's mental processing is not visible by the officer. The intentions of the suspect will not be actually visible until the suspect begins the actual physical movement of the assault. It is at that time that the officer can begin the mental and physical process of responding the specific threat. These processes are known to sport psychologists as reaction time, movement time, and response time.

Specific to the situations studied, this project provides some scientific data to explain the gray areas of when a suspect becomes an actual threat to the officer or a third party. It confirms what many police officers and firearms instructors have, from intuition, known and gives them a basis for explaining those beliefs. The study also reveals that officers may be more at risk that generally believed before. If, for instance, an officer waits to see the gun in the hand of a suspect move before he takes action, he will not be able to prevent the suspect from shooting. Consequently, many of the techniques that have been designed and taught to help officers remain safe take on renewed importance and significance. Additionally, this hard data will help officers make more appropriate decisions on the use of deadly force and allow administrators to offer rational explanations to the communities they serve.