

# Stressed and Unstressed Shooting Performance

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Today, police recruits in the United States and Canada face courses of fire as a requirement in their police academy curriculum and in-service officers encounter periodic qualification and training courses. Firearm qualification is a well-established and apparently credible manner that departments and law enforcement agencies attest to officer competence. *"The universal acceptance of both the process and product of handgun qualification today strongly implies that officers exceeding the prescribed minimum performance standards are proficient"* (Morrison and Vila, 1998, p.510).

Police managers who rely on officer's qualification scores as an indicator of their ability to function in a critical incident in the field are making the assumption that the firearms training program rests upon apparently defensible content and practices. Caution should be used in drawing such an inference. Studies have indicated the hallmarks of marksmanship and firearm qualification; stance, breath control, trigger squeeze, etc, are not the factors that generally characterize deadly force encounters (Baratta, 1999).

The purpose of this study was to determine the impact of prior stress on shooting performance in qualified police recruits.

## Methods:

Twenty one police recruits performed a 20 round course of fire under two experimental conditions: no physical exertion, no time constraint, and following the POPAT with time constraints. *Unstressed*: optimal conditions with no physical exertion, no time limits: *Stressed*: following a sub 4:00 Peace Officer Physical Abilities Test (POPAT); all shots within 2:00 minutes.

Course of fire included five rounds fired at standard 20x32 inch targets at 3, 7, 15 and 25 meters. Heart rates were collected using Polar Heart Rate Monitors during both conditions. Targets were scored as a distance from centre of mass in inches. Significance ( $p < 0.05$ ) was explored using paired t-tests.



## Results:

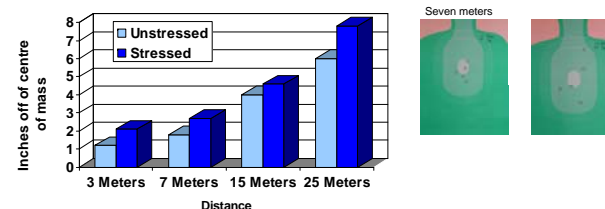
Heart rates were significantly higher in the stressed shooting condition. Shooting performance was significantly worse at 3, 7 and 25 meters in the stressed, as compared to the unstressed condition.

**Table 1:** Average distance from centre of mass.

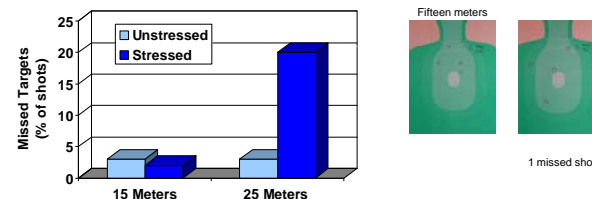
Target Distance	Unstressed Shooting Score	Stressed Shooting Score	Significance
3 Meter	.8	1.2	.00
7 Meters	1.8	2.6	.04
15 Meters	3.6	4.4	.28
25 Meters	5.5	7.6	.02

Differences between stressed and unstressed shooting results can be observed in Figure 1 (average distance from centre of mass) and Figure 2 (number of missed targets).

**Figure 1:** Average distance from centre of mass.



**Figure 2:** Number of missed targets.



## Discussion:

Annual firearms training and qualifications vary greatly across North America for general duty police officers, as there are many different firearms requirements distinctive to the specific assignments in policing. However, despite this training, low field-shooting accuracy by police in deadly force situations has been repeatedly reported. This is in accordance to the present results that found significant decrements in shooting performance following a physical stress, in a time-limited shooting qualification. The increased hit off centre of mass ranged from 67 – 82% with an increase in the number of missed targets in the stressed condition.

The liability factor associated to police constables missing their intended target can lead to both financial and public relation issues to the departments involved. Weller (2003) suggests that requiring, or even training officers to fire at distances beyond 15 meters with a handgun is tactically unsound as the weapon is intended for sudden, unexpected threats at close proximities. As the probability of missing the intended target increases dramatically at greater distances, especially in highly dynamic encounters involving movement, low light and survival stress, using a handgun at these distances may become a serious liability issue.

## Conclusion:

Research is critical of present firearms training and qualifying standards globally. Like Morrison and Vila (1998) the present study suggests there are biological limits to handgun-shooting accuracy that substantially limit performance in stressed conditions. There is a need to develop new and valid criteria for police firearms training and qualification.

## References:

- Morrison, B.G. and Vila, J. B. (1998). "Police handgun qualification: practical measure or aimless activity?" *Policing: An International Journal of Police Strategies & Management*. 21, 3:510-33.
- Weiler, J. (2003, April). "Canadian police need patrol carbines". *Blue Line Magazine*. 15 4: 14.