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Determination of the Best Shooting Position for a Soldier

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Author Note: Bheem Kattel has been teaching and doing research in the Department of Industrial and Systems Engineering, Morgan State University (MSU) for the last eleven years. Justin Brown was an undergraduate student in the department. The authors would like to thank ROTC at MSU, ROTC students, and camp Fretterred for their participation and permission to use their training facilities for performing the experiment.

Abstract: Soldiers have to accommodate themselves into various shooting positions based on combat situation and the terrain. Shooting efficiency in those positions can make a difference between hitting the target and getting hit. The objective of this study was to determine the most efficient shooting position to engage a target. Five cadets from ROTC program at Morgan State University were selected as participants for the study. The three shooting positions that were analyzed were the three most commonly used positions; prone supported, prone unsupported, and kneeling positions. These positions were examined by having the soldiers perform a 40 round qualification test, in which the soldiers shot a designated amount of rounds, before and after performing rigorous tasks. The test was performed with Engagement Skills Trainer (EST) 2000, a simulator used for weapon-training events with live-fire individual/crew weapon qualification and other weapon-training events/activities. Data collected were analyzed using a statistical analysis package. The results of the analysis showed, under the conditions of the study, that kneeling position was the best in terms of accuracy. Details of the experiment and the analysis are provided in the text.

Keywords: 40 Round Qualification, Ruck March, EST 2000, Ruck Sack, Full Combat Load, Battle Sight Zeroing