

Abstract

Title

Impact of gear and weaponry on posture in kneeling shooting position

Objectives

The aim of this thesis is to find out the impact of gear and weaponry on posture in the kneeling shooting position. Specifically, this study examines the influence of carried load on posture, aiming stability and balance in the high and low kneeling shooting position variants.

Methods

This thesis has an empirical observational character. The shooting position was tested by Qualisys camera system and Kistler pressure plates. The measurement was performed on 16 Military department students with mean age of 23 years (standard deviation 2,63 years). Measurements were carried out in four levels, with no load, light load of 15 kg, mean load of 30 kg and heavy load of 45 kg. The measurement was performed on high kneeling variant and the low variant with elbow supported by the front knee. Intra-individual comparison of the results of each level was determined by a T-test.

Results:

The load in a form of gear and weaponry had a statistically significant – negative influence on the kneeling shooting position posture. Gear and weaponry used for this study caused a lower trunk position, increased shoulders angle in the low variant, lesser aiming stability and balance control in the position. The bigger was the weight of gear and weaponry, the more negative impact it had on the kneeling posture. The low kneeling shooting position variant had a statistically significant – negative influence only on the shoulders angle with the load of 45 kg. On the contrary, the low variant had an statistically significant – positive influence on aiming stability and balance with 15 and 45 kg load.

Keywords

Posture, stability, aiming, shooting position, Qualisys, Kistler, gear, weaponry