

Aviation-Associated Spatial Disorientation and Incidence of Visual Illusions Survey in Military Pilots

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Abstract

The lack of information on active military pilots has led to the present study, which aimed to analyze the sense of aviation-associated spatial disorientation and the incidence of visual illusions of fighter and transport military pilots through a post-flight survey. The advance of aeronautics has led to further aircraft developments, increasing heights and speeds which increase the psychophysiological demands, thus leading to greater incidence of spatial disorientation and visual illusions. 60 male pilots with large professional experience ($1012 \text{ h} \pm 250$ accumulated flying hours) between 7 and 18 years in their respective units and experience in international missions in the current conflict areas as Lebanon, Afghanistan, Bosnia, Kosovo, and Iraq, were subjected to a post-flight visual experience questionnaire. Our findings suggest that transport pilots tend to present significant higher disorientation situations than fighter pilots, while fighter pilots presented greater sense of aviation-associated spatial disorientation but experimented more visual illusions. These differences are related with the demands of the different aircrafts used by each pilot, thus specific, individualized and larger simulated training sessions in simulated environments are suggested. Further research should focus on the analysis of peripheral and central fatigue as constructs that may help to the appearance of greater spatial disorientation and visual illusions.

Keywords

Spatial disorientation; Aviation; Visual illusions; Military pilots