

Effects of Command and Control Vehicle (C2V) Operational Environment on Soldier Health and Performance

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Abstract: The purpose of this project was to use NASA technology to assist the US Army in the assessment of motion sickness and performance of soldiers in the Command and Control Vehicle (C2V). Three different vehicle configurations were tested: oblique, (3 seats at a 20-degree angle from the direction of travel); perpendicular, (3 seats at a 90 degree angle); and 4-forward, (all seats faced forward). In all vehicles, the front seat faced forward. Sixteen men and eight women participated for 15 days: 2 days of classroom instruction; 12 days of field tests in the C2V, and 15 minutes of post-field test performance measures. Conditions for field tests were: an initial Park; four Moves (i.e., travel over a mixed terrain); and four Short-halts following movement. NASA task batteries, mood and symptom scales, and physiological data were collected during field tests. Motion sickness symptoms ranging from slight to severe were reported for all subjects. Conclusions were: (1) there was no difference between vehicle configurations; (2) there was a negative impact on crew performance and health when subjects attended to visual screens during vehicle movement; and (3) symptoms and performance degradation were not mitigated by intermittent short-halts.