

Abstract ID: 11239

Title: Effects of Motion Cueing on Components of Helicopter Pilot Workload

Subcommittee: Human Performance

Abstract Text: Research into the effect of motion cueing on workload in flight simulation has resulted in conflicting conclusions. Some researchers provide evidence of that motion cueing technology affects pilot workload (e.g. Schroeder, 1999), whereas others found no effect (e.g. Go, 2000). This study examined data from a recent helicopter flight simulation experiment to determine how different motion cueing technologies affected the components of workload. 24 Canadian Forces pilots performed eight ADS – 33E mission task elements and 3 emergency manoeuvres in a simulated medium-weight helicopter configurable with a 6 degree of freedom motion platform, a motion cueing seat, or no motion cueing. Each pilot performed all the manoeuvres in two of the three motion cueing conditions (NOTE: Data collection will be complete in March 2011 and the analysis will be complete for inclusion in the IITSEC paper for April). Detailed workload measures (NASA TLX) captured after each manoeuvre will be examined to determine how the individual components of workload are differentially affected by the different cueing technologies. The results are important in that they suggest that pilots may perform, and potentially learn, the task differently, depending on the motion cueing technology employed in the simulator.

Will this paper have one or more authors from outside the U.S.? Yes

Discussion Points:

1. Workload
2. Simulator
3. Motion Cueing
4. Helicopter

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Biography:

Jolie Bell is a PhD Candidate in cognitive science at Carleton University, currently working on her 3rd year in the Advanced Cognitive Engineering Lab under the supervision of Dr. Chris Herdman. Her thesis topic is the effects of cognitive fatigue on working memory. She has a Master's of Science in General Experimental Psychology from Shippensburg University where she investigated process of encoding degraded stimuli into recognizable memory cues in working memory. She obtained a BA in psychology from Bloomsburg University.

Status: APPROVED

I/ITSEC ABSTRACT SCORING FORM

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Human Performance: Work that addresses the role of the human as an integral component within systems and in mission accomplishment.

This subcommittee seeks papers that address the application of theories, methods, tools, performance measurement and principles of Human Performance Design, Human Systems Integration (HSI), and Human Factors. Specifically, the committee seeks papers that address human performance as the explicit desired outcome, enabled through the on-demand availability of structured knowledge, task and decision-aiding, human in-the-loop design, and meaningful support resources. Papers have addressed topics such as usability/user experience, community of practice, organizational effectiveness, interactive electronic technical manuals (IETM), electronic performance support systems (EPSS), job aids, performance centered design, human-computer interface (HCI), maintenance mentoring, decision support systems, knowledge management tools, immersive stimulation techniques, situational awareness, human performance assessment, and the application of HSI. Papers supported by human performance data gathered from innovative, scientifically valid experiments are especially valued.

Evaluation

Substance. The controlling idea and the support for it. The total concept the author wants to present. A good idea can survive mechanical flaws, but perfect spelling and grammar can't save poor ideas.

Originality. A new concept that furthers the evolution of the committee's subject area. A repeat of past theories that add nothing to the community of knowledge are generally unacceptable, unless the prospective abstract/paper promises to impart knowledge that may be of substantive value to a novice audience.

Acceptance

Accept Reject Discuss Sales Pitch Similar Abstract
International Abstract (Specify ID Ref No.) Transfer to

Key Words or Concepts

Other Comments/Remarks