

Modeling Physiological Stress Effects on Perception and
Task Accomplishment within Combat Simulations

Cadet Ian S. Morrison
Cadet Eric Mancik
Cadet Josh McCaskill
United States Military Academy
West Point, New York

ABSTRACT:

For many years the United States Army has used combat simulators in order to train and prepare soldiers for the rigors of real life combat. One of the main points of simulations is to allow soldiers to practice different aspects of the tasks they may perform in combat. However, the realism of the agents operating in the simulation has a major impact on the transfer of lessons learned in the virtual world to behaviors in the real world. One element of realistic agent behavior is the physiological response to stress. Agents that are able to run two virtual miles at top speed and perform tasks with no degradation do not reflect the real effect of exertion on performance. In this experiment series, we seek empirically, to develop a model of combat tasks after varying degrees and types of physical exertion. These models can then be applied to agent behavior in simulations such as Operation Flashpoint or America's Army.

KEYWORDS: combat simulators, agents, physiological response, stress

CONTACT: CDT Ian S. Morrison, United States Military Academy, West Point, NY,
Tel: (845) 515-2042, Email: Ian.Morrison@usma.edu

CDT Eric Mancik, United States Military Academy, West Point, NY, Tel:
(845) 515-2582, Email: Eric.Mancik@usma.edu

CDT Josh McCaskill, United States Military Academy, West Point, NY,
Tel: (845) 515-3945, Email: Joshua.McCaskill@usma.edu