The Study of Adverse Weather Conditions on Soldiers Wearing Personal Body Armor in Combat and the Introduction of Mitigating Factors Through the Use of Integrated Microclimate Systems

Weather conditions are the main controlling factors that decrease combat effectiveness for the military.

combat effectiveness. This research presents a design to help soldiers decrease the chances of heat injury by modifying the personal body armor worn. By using phase change material integrated into the armor, the soldier

In order to appropriately design a model the modified armor, a one-dimensional heat flow, implicit finite difference method was used to test the effects of an unmodified and modified armored vest. Human testing was also used to measure the heat flow characteristics of the body while wearing the typical combat load. This was