

EASE OF USE



DEXTERITY TESTS



FIELD OF VIEW

GONIOMETER/
RANGE OF MOTION



MISSION SIMULATION



US ARMY NSRDEC
WARFIGHTER SCIENCE, TECHNOLOGY &
APPLIED RESEARCH DIRECTORATE
Human Systems Integration & Science Division

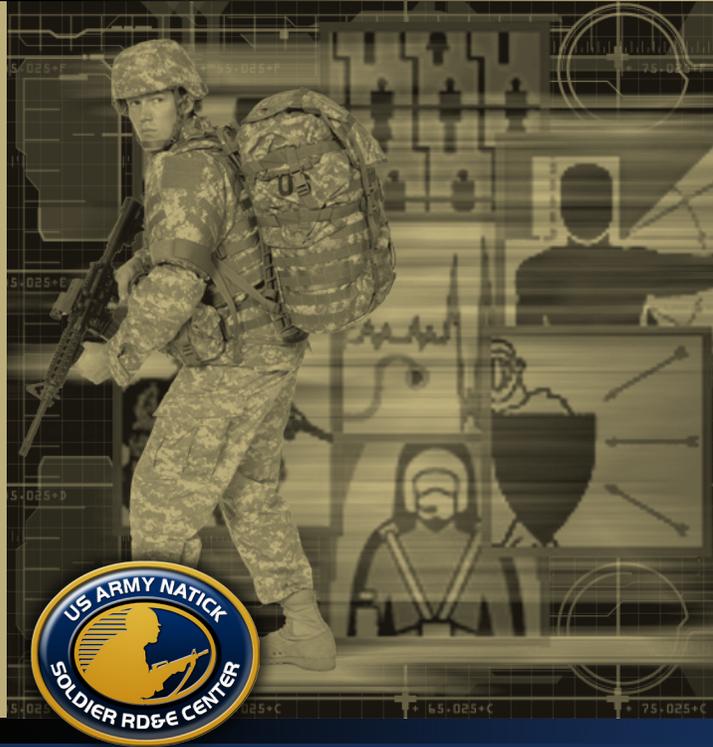
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HUMAN SYSTEMS INTEGRATION (HSI) LABORATORY

Human Factors Engineering & Anthropology





HUMAN SYSTEMS INTEGRATION (HSI) LABORATORY

FOCUS

Through the systematic application of ergonomic principles to product design, ensure that Warfighter-oriented clothing and individual protective equipment (CIE), tents, shelters, field services equipment, airdrop equipment, food & food services equipment are:

- Compatible with the intended users and the users' physical environment
- Maintain users' health & safety
- Enhances users' functional effectiveness

LABORATORY FACILITIES

- The Laboratory is a newly modernized, 1000 square foot facility, maintained and operated by Human Factors Engineers (HFE) and Anthropology Subject Matter Experts (SMEs).



HUMAN FACTOR ENGINEERING ROLES

Contribute to a product's RDT&E to ensure the User can perform his/her mission safely, efficiently and effectively by:

- **Providing design recommendations to enhance Warfighter-system interfaces by utilizing:**
 - HFE criteria found in relevant standards and Handbooks
 - Heuristic HF evaluation techniques
 - Extensive SME experience
- **Conducting laboratory and field evaluations of:**
 - Initial prototypes
 - Developmental items
 - Commercial off-the-shelf products
 - Source selection candidates
- **Utilizing subjective & objective test methodologies, assess equipment for:**
 - Compatibility of equipment with the User, gear, platform and environment
 - Ease of Use & Safety
 - Comfort
 - User/Mission Acceptability
 - Fit and Accommodation
 - Equipment/system's impact on the user's
 - *Dexterity / Tactility*
 - *Vision*
 - *Hearing and communication*
 - *Range of Motion*
 - *Mission Performance*

ASSETS:

- **Test Participants — Active duty military personnel**
- **Approved Human Use Protocol**
- **Access to other NSRDEC Facilities:**
 - Outdoor Obstacle/MOUT Course
 - 3D Anthropometric Scanning Lab
 - Biomechanics Lab
 - Cognitive Performance Lab
- **Specialized tools & test equipment:**
 - Dexterity/tactility tests (fine/gross)
 - Vision tests (field of view, color/depth perception)
 - Environmental gauges: humidity, temperature, noise & light levels
 - Physical & physiological measuring devices: goniometers anthropometers, digital scale, heart rate monitors, force gauges
- **Extensive selection of legacy and developmental Warfighter-oriented ancillary gear and equipment:**
 - Body armor, helmets, eye/ hand/ footwear, uniforms, cooling garments, mock weapons, load bearing gear
 - Multi-service Chem-Bio ensembles & masks

