APPENDIX B
VOLUNTEER AGREEMENT AFFIDAVIT
Army Research Laboratory
Human Research and Engineering Directorate
Aberdeen Proving Ground, MD

Title of Project: ANALYSIS OF SOLDIER PERFORMANCE RESULTING FROM THE DESIGN OF SELECTED INPUT CONTROL DEVICES AND VISUAL DISPLAYS FOR WEARABLE COMPUTERS

Principal Investigators: Ronald A. Spencer and Woodrow Barfield, Ph.D. Phone No: (540) 231-3352

Location of Investigation: Ft. Bragg, NC.

Purpose of Study:

The purposes of this study are to: (1) compare soldiers performance while using five different commercial-off-the-shelf (COTS) input devices with two different visual displays; (2) identify soldier s preference for visual displays.

Description of the study

You are invited to participate in a wearable computer study that will allow the investigators to collect data in order to evaluate the usability performance of various input control devices and two visual displays that will be used with a wearable computer.

Procedure. If you decide to participate in this study, the test administrator will describe the details of the procedure to you. A brief description is as follows: It will take approximately 90 minutes to go through a series of pointing tasks. During these tasks you will be asked to manipulate a cursor that will be presented to you on either a head-mounted display (HMD) or a wrist-mounted display (WMD). The weight of the HMD is 0.45 kilograms, and the weight of the WMD is 520g. The manipulation of the cursor will require you to position a pointer using an input control device from a home position to a target.

A brief training period will be provided so that you may become familiar with the input control device and visual display. The computer tasks will be given in-doors in a controlled climate condition during daylight hours.

Upon completion of tasks, participants will be asked to complete a questionnaire.

Rights. Any published data will not reveal your identity. You will be assigned a Participant Identification Number so that we may keep all data collected confidential. In the Interest of public safety, information will be provided to Federal and regulatory agencies as required. If you decide to participate, you are free to withdraw your consent at any time without penalty.

After the study, if you have any questions, we expect you to ask via email or telephone. The investigators will be happy to answer them. Your electronic or real signature indicates that you have read and understand the above information, that your questions have been answered to your satisfaction, and that you have decided to participate based on the information provided on this form.

Risks

The risks that will be encountered in this evaluation are minimal and are typical of the everyday risks encountered by individuals in an office environment.

Benefits

Satisfaction in the knowledge that the data obtained in this study will help identify which input control devices and visual display may best meet the soldiers need when operating a wearable computer. Additionally, SOF soldiers will be exposed to technology that they may someday use on the battlefield.

Alternative treatment.

Not Applicable.

Confidentiality

Confidentiality of personal information identifying the subject will be maintained. This information will be excluded from the test data by the assignment of a participant code at the time of the administration of the test and will only be made available for official purposes.

Points of contact

Ronald A. Spencer, (540) 231 3351.

Subject's rights

Any published data will not reveal your identity. Your participation in this evaluation is voluntary. If you choose not to participate in this evaluation, or later wish to withdraw from any portion of it, you may do so without penalty. Military personnel are not subject to punishment under the Uniform Code of Military Justice for choosing not to take part as human subjects. No administrative sanctions can be taken against military or civilian personnel for choosing not to participate as human subjects.

VOLUNTEER AGREEMENT AFFIDAVIT
(Reverse)

Compensation.

Not Applicable.

Cautions

a. Under unforseen circumstances as deemed appropriate by the test administrator the subject's participation may be terminated by the investigator without regard to the subject's consent.

b. The test participant may withdraw from the study at any time without any resulting consequences.

c. The number of subjects involved in the study will be approximately 20.

d. No precautions are required to be observed by the subject either before and after the study.

e. If photographs are taken during the study each test participant will have the right to be excluded from the photograph or have the photograph view angle adjusted to protect the identity of the subject.

f. The results of the research will be in the public domain, however, direct distribution will not be made to the test participants.

Disposition of Volunteer Agreement Affidavit

The principal investigator will retain the original signed Volunteer Agreement Affidavit and forward it to the chair of the Human Use Committee after the investigation. A copy will be provided to the volunteer by the test administrator. If the volunteer consents, the investigator shall provide an additional copy of this signed Volunteer Agreement Affidavit either to the medical records custodian for inclusion in the volunteer's medical treatment record (**AR 40-66**, para **6-2f**) or when no medical custodian is identified, to the volunteer for his/her primary physician s file.

Any published data will not reveal your identity. Your participation in this evaluation is voluntary. If you choose not to participate in this evaluation, or later wish to withdraw from any portion of it, you may do so without penalty. Military personnel are not subject to punishment under the Uniform Code of Military Justice for choosing not to take part as human subjects. No administrative sanctions can be taken against military or civilian personnel for choosing not to participate as human subjects.

The furnishing of your social security number and home address is mandatory and necessary for identification and locating purposes to contact you if future information indicates that your health may be adversely affected. Failure to provide the information may preclude your voluntary participation in this study. Information derived from this study will be used to document the study, to implement medical programs, to adjudicate claims, and for the mandatory reporting of medical conditions as required by law. Information may be furnished to Federal, State, and local agencies. Collection of this information is authorized by 10 USC 3013, 44 USC 3101, and 10 USC 1071-1087. Under the provisions of AR 40-38 and AR 70-25, volunteers are authorized all necessary medical care for injury or disease which is the proximate result of their participation in this study.

Your signature indicates (1) that you are at least 18 years of age, (2) that you have read the information on this form, (3) that you have been given the opportunity to ask questions and those questions have been answered to your satisfaction, and (4) that you have decided to participate based on the information provided on this form.

<table>
<tr><td>PRINTED NAME OF VOLUNTEER</td><td>DATE</td><td>SOCIAL SECURITY NUMBER</td><td colspan="3">DATE OF BIRTH</td></tr>
<tr><td>SIGNATURE OF VOLUNTEER</td><td colspan="5" rowspan="2">PERMANENT ADDRESS OF VOLUNTEER</td></tr>
<tr><td>TYPED NAME OF TEST ADMINISTRATOR</td></tr>
<tr><td>SIGNATURE OF TEST ADMINISTRATOR</td><td colspan="3">(MILITARY) DO YOU REQUEST A COPY OF THIS VOLUNTEER AGREEMENT AFFIDAVIT TO BE FORWARDED TO THE CUSTODIAN OF YOUR MEDICAL RECORDS? OR (CIVILIAN) DO YOU REQUEST A SECOND COPY FOR YOU TO TAKE TO YOUR PRIMARY PHYSICIAN?</td><td>YES</td><td>NO</td></tr>
</table>

If you have questions concerning your rights on a study-related injury, or if you have any complaints about your treatment while participating in this study, you can contact:

Chair, Human Use Committee
Army Research Laboratory
Human Research & Engineering Directorate
Aberdeen Proving Ground, MD 21005-5425
(410) 278-5800 or (DSN) 298-5800

(OR)

Office of the Chief Counsel
Army Research Laboratory
2800 Powder Mill Road
Adelphi, MD 20783-1197
(301) 394-1070 or (DSN) 290-1070

CERTIFICATION OF EXECPTION OF PROJECTS INVOLVING HUMAN SUBJECTS

Investigator: **Ronald A. Spencer and Woodrow Barfield, Ph.D.**
Department: **Department of Industrial and Systems Engineering**
Project Title: **Evaluation of Input Control Devices with Two Displays Using the U.S. Special Forces Command s Tactical Computer for Pointing Tasks.**
Source of Support: Departmental Research o Sponsored Research o Proposal No.: _____

1. The criteria for exemption from review by the IRB for a project involving the use of human subjects and with no risk to the subject is listed below. Please initial all applicable conditions and provide the substantiating statement of protocol.

o a. The research will be conducted in established or commonly established educational settings, involving normal educational practices. For Example:
(1). Research on regular and special education instructional strategies;

(2). Research on effectiveness of instructional techniques, curricula or classroom management techniques.

o b. The research involves use of education tests: f cognitive: f diagnostic: f aptitude: f Achievement: f and the subject cannot be identified directly or through identifiers with the information.

o c. The research involves survey or interview procedures in which:
o (1). Subjects cannot be identified directly or through identifiers with the information;

o (2). Subject s responses, if known, will not place the subject at risk of criminal or civil liability or be damaging to the subject s financial standing or employability;

o (3). The research does not deal with sensitive aspects of subject s own behavior (illegal conduct, drug use, sexual behavior, alcohol use);

o (4). The research involves survey or interview procedures with elected or appointed public officials, or candidates for public office.

o d. The research involves the observation of public behavior, in which:
o (1). The subjects cannot be identified directly or through identifiers;

o (2). The observations recorded about an individual could not put the subject at risk of criminal or civil liability or be damaging to the subject s financial standing or employability;

o (3). The research does not deal with sensitive aspects of the subject s behavior Illegal conduct, drug use, sexual behavior or use of alcohol;

o e. The research involves collection or study of existing data, documents, recording pathological specimens or diagnostic specimens, of which:
o (1). The sources are publicly available; or

o (2). The information is recorded such that the subject cannot be identified directly or indirectly through identifiers.

2. I further certify that the project will not be changed to increase the risk or exceed exempt conditions(s) without filing an additional certification or application for use by the Human Subjects Review Board.

Note: If children are in any way at risk while this project is underway, the chairman of IRB should be notified immediately in order to take corrective action.

_____
Investigator(s) / Date

_____ _____
Departmental Reviewer / Date Chair, Institutional Review Board / Date

REQUEST FOR APPROVAL OF INVESTIGATION INVOLVING HUMAN SUBJECTS

Investigator: **Ronald A. Spencer and Woodrow Barfield, Ph.D.**
Department: **Department of Industrial and Systems Engineering**
Project Title: **Evaluation of Input Control Devices with Two Displays Using the U.S. Special Forces Command s Tactical Computer for Pointing Tasks.**

Source of Support: Departmental Research o Sponsored Research o Proposal No.: _____

1. The criteria for expedited review by the Institutional Review Board for a project involving the use of human subjects and with minimal risk is one or more of the following. Please initial all applicable conditions and provide a substantiating statement of protocol.

o a. Collection of:
  (1). Hair or nail clipping in a non-disfiguring manner;
  (2). Deciduous teeth;
  (3). Permanent teeth if patient care indicates need of extraction.

o b. Collection of excreta and external secretions: sweat, uncanulated saliva, placenta removed at delivery, amniotic fluid obtained at time of rupture of the membrane.

o c. Recording of data from subjects 18 years or older, using non-invasive procedures routinely employed in clinical practice. Exemption does not include exposure to electromagnetic radiation outside the visible range.

o d. collection of blood samples by venipuncture (not exceeding 150 ml / 8 week period, and no more than twice a week from subjects 18 years or older, in good health and not pregnant).

o e. Collection of supra- and subgingival dental plaque and calculus, provided the procedure is no more invasive than routine sealing of the teeth.

o f. Voice recordings.

o g. Moderate exercise by healthy volunteers.

o h. Study of existing data, documents, records, pathological specimens or diagnostic specimens.

o i. Research on drugs or devices for which an investigational exemption is not required.

2. If the project involves human subjects who are exposed to more than minimal risk and are not covered by the criteria above (a to I), the IRB review must involve the full IRB board. Please check if the research involves more than minimal risk **_ and provide a substantiating statement of protocol.

3. Human subjects would be involved in the proposed activity as either: Minors and / or Children* f Fetuses f Abortuses f Pregnant Women f Prisoners f Mentally Retarded f Mentally Disabled f.

Note that if children are involved in the research as human subjects, they may have to provide consent as well as their parents. Whether or not the project may undergo expedited review or must be reviewed by the full Institutional Review Board, it is necessary that the required informed consent forms also be reviewed. These should be submitted with the proposal. However, if there is insufficient time to meet the sponsor s deadline, submittal can be delayed up to thirty days after submittal of the proposal without jeopardizing the IRB certification to the prospective sponsor.

*Minimal Risk means that the risks of harm anticipated in the proposed research are not greater, considering the probability and magnitude, than those encountered in daily life or during performance of routine physical or psychological examinations or tests.

** Subject at risk is an individual who may be exposed to the possibility of injury as a consequence of participation as a subject in any research, development or related activity which departs from the application of those established and accepted methods necessary to meet his needs, or which increases the ordinary risks of daily life, including the recognized risks inherent in a chosen occupation or field of science.

This is to certify that the project identified above will be carried out as approved by the Human Subject Review Board and will neither be modified nor carried out beyond the period approved below without express review and approval by the Board.

_____

Investigator(s) / Date

The Human Subjects Review Board has reviewed the protocol identified above, as it involves human subjects, and hereby approves the conduct of the project for _____ months, at which time the protocol must be resubmitted for approval to continue.

_____ _____

Departmental Reviewer / Date Chair, Institutional Review Board / Date

APPENDIX C

Subject No.: _____

DEMOGRAPHIC QUESTIONNAIRE

1. Age: _____

2. Gender: Male ☐ Female ☐

3. Experience with computers: _____years _____ months

4. Are you left- or right-handed?

   Left-Handed ☐ Right-Handed ☐

5. Do you wear eyeglasses or contacts?

   Yes ☐ No ☐

6. Have you ever worn a head- or helmet-mounted display (HMD)?

   Yes ☐ No ☐

7. Have you ever worn a wrist- or body-mounted display (HMD)?

   Yes ☐ No ☐

8. Have you ever used an input control device for wearable computers?

   Yes ☐ No ☐

9. How would you rate your ability to use a computer?

Excellent	Good	Neither Good Nor Bad	Fair	Poor	Never Used One
☐	☐	☐	☐	☐	☐

APPENDIX C

Subject No.: _____

DEMOGRAPHIC QUESTIONNAIRE for SOLDIERS

1. Age: _____

2. Rank: _____

3. Military Occupational Specialty (MOS): _____

4. Time in Service: _____years _____ months

5. Time in grade: _____years _____ months

6. Time in MOS: _____years _____ months

7. Are you left- or right-handed?

Left-Handed ☐ Right-Handed ☐

8. Do you wear eyeglasses or contacts?

Yes ☐ No ☐

9. Have you ever worn a head- or helmet-mounted display (HMD)?

Yes ☐ No ☐

10. Have you ever worn a wrist- or body-mounted display (HMD)?

Yes ☐ No ☐

11. Have you ever used an input control device for wearable computers?

Yes ☐ No ☐

12. How would you rate your ability to use a computer?

Excellent	Good	Neither Good Nor Bad	Fair	Poor	Never Used One
☐	☐	☐	☐	☐	☐