

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Information Sheet for Participants of Investigative Projects

Title of Project: Top Gun

Investigators: Sheldon Russell and Myra Blanco

I. The Purpose of this Research/Project

The purpose of this project is to study the use of Head-Up Displays. We are asking you to assist us with this study. If you participate you will be asked to drive a passenger vehicle on public roads as well as on our test track while performing tasks involving Head-Up Displays. The results from this study will be used to improve the design and safety of Head-Up Displays.

II. Procedures

During the course of this experiment you will be asked to perform the following tasks:

- 1) Read this Information Sheet and sign it if you agree to participate.
- 2) Complete a W-9 form.
- 3) Show your valid driver's license.
- 4) Complete a vision test.
- 5) Complete a short demographics questionnaire.
- 6) Drive a passenger vehicle at normal highway speeds on US-460 for about 12 miles, while following an experimenter in a separate vehicle. During the drive, you will be asked to perform tasks that require reading information from the Head-Up Display (such as read current speed) while driving. An experimenter will sit in the passenger's seat while you are driving and provide instructions throughout the public road portion. A video recording with audio will be made to allow for later analyses.
- 7) Afterwards we will proceed to the test track and complete six test trials. Five of the test trials will include performing tasks that require reading information from the Head-Up Display (such as read current speed and read cardinal direction) while driving.
- 8) Complete a questionnaire by providing ratings following each task you have completed.

We are not evaluating you or your performance in any way. You are helping us evaluate new technology. Any opinions you have will only help us do a better job of designing the systems. Therefore, we ask that you perform to the best of your abilities. Any feedback that you provide is very important to this project. The experiment will last about 2 hours

III. Risks

There are risks or discomforts to which you may be exposed in volunteering for this research. They include the following:

- 1) The risk of an accident normally associated while driving a passenger vehicle under normal operating conditions.
- 2) Possible fatigue due to the length of the experiment.
- 3) The risk of accident while viewing displays used in the experiment.
- 4) The risk of driving an unfamiliar vehicle on a test track at 35 mph.

- 5) The risk of events that require evasive maneuvers, such as swerving or hard braking. Braking forces are not expected to exceed .5g.

While the risk of participation in this study is considered to be no more than that encountered in everyday driving, if you are pregnant you should talk to your physician and discuss this information sheet with them before making a decision about participation.

Please be aware that events such as conditions on the public road, equipment failure, changes in the test track, stray or wild animals entering the road, and weather changes may require you to respond accordingly. The appropriate response may or may not involve rapid deceleration or acceleration.

In the event of an accident or injury in a vehicle owned or leased by Virginia Tech, the vehicle liability coverage for property damage and personal injury is provided. The total policy amount per occurrence is \$2,000,000. This coverage (unless the other party was at fault, which would mean all expense would go to the insurer of the other party's vehicle) would apply in case of an accident for all volunteers and would cover medical expenses up to the policy limit. For example, if you were injured in a vehicle owned or leased by Virginia Tech, the cost of transportation to the hospital emergency room would be covered by this policy.

Participants in a study are considered volunteers, regardless of whether they receive payment for their participation; under Commonwealth of Virginia law, worker's compensation does not apply to volunteers; therefore, if not in the vehicle, the participants are responsible for their own medical insurance for bodily injury. Appropriate health insurance is strongly recommended to cover these types of expenses. For example, if you were injured outside of the vehicle owned or leased by Virginia Tech, the cost of transportation to the hospital emergency room would be covered by your insurance.

The following precautions will be taken to ensure minimal risk to you:

1. You may take breaks or decide not to participate at any time.
2. An experimenter will be present in the passenger's seat. We ask that you drive as you would normally drive.
3. On public roads, we will not ask you to exceed the posted speed limit.
4. On public roads, the lead vehicle driver you will be asked to follow is a VTTI employee that has been trained on the experiment protocols and procedures.
5. On the test track, we will not ask you to exceed 35 mph.
6. The driver of the other experimenter vehicle present on the test track is a VTTI employee that has been trained in test track procedures and protocols.
7. All data collection equipment is mounted such that, to the greatest extent possible, it does not pose a hazard to you in any foreseeable case.
8. You are required to wear a seat belt restraint system while in the passenger vehicle.
9. The vehicle is equipped with a fire extinguisher and first aid kit.
10. A pre-trip inspection has been performed on the vehicle prior to your test session.
11. The experimenter will end the experiment if inclement weather occurs. This includes any weather that results in the use of the windshield wipers, wet or icy road surfaces, and reduced visibility due to fog.

12. You do not have any medical condition that would put you at a greater risk, including but not restricted to neck/spine injury, epilepsy, balance disorders, and lingering effects of head injuries and stroke.
13. In the event of a medical emergency, or at your request, VTTI staff will arrange medical transportation to a nearby hospital emergency room. You may elect to undergo examination by medical personnel in the emergency room.

IV. Benefits of this Project

While there are no direct benefits to you from this research, you may find the experiment interesting. No promise or guarantee of benefits is made to encourage you to participate. Participation in this study may contribute to the improvement of in-vehicle systems.

V. Extent of Anonymity and Confidentiality

The data being collected in this experiment includes:

- o Personal information, including Social Security Number. This is personally identifiable information. This is required for payment purposes and is not for use in any analysis, nor will it be reported or shared in any way.
- o Video recordings collected during the experiment. These recordings will include your face as well as audio. This data is personally identifiable (which means it is linked or can be linked to you).
- o Driving measures, such as following distance, GPS data, lane keeping, and vehicle speed: These are collected by recording instruments in the vehicle. This data will not be personally identifiable.
- o Subjective responses to questionnaires: You will be asked questions at specified times during your participation. This data will not be personally identifiable.

We will treat all of the data gathered in this experiment with confidentiality by separating your name from the data and replacing it with a number (e.g., Driver 001). Nobody but the lead VTTI researchers involved in the project will have access to the document that correlates your name/contact information with study data. It is possible that the Institutional Review Board (IRB) or study sponsor may view this study's collected data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

All video and other data recorded in this study will be encrypted and stored on secure servers in a physically secure area at Virginia Tech. Access to the data files will be under the supervision of the Principal Investigator and lead VTTI researchers involved in the project, except to the extent that the research sponsor may view or obtain video or other data files for authorized agency purposes. All data will be encrypted at the time of data collection and will be decrypted only for approved analyses. It is possible that, after data collection is complete one copy of study data will be transferred to the project sponsor (the U.S. Department of Transportation) for permanent storage and oversight. Please note that they will follow the same procedures for protecting participant confidentiality. The secure data will be stored at VTTI for as long as it is useful for research purposes, for this study the data will be stored for 10 years.

Authorized project personnel and authorized employees of the research sponsors will have access to the study data that personally identifies you or that could be used to personally identify you.

As explained below, other qualified research partners may also be given limited access to your driver, vehicle, and driving data, solely for authorized research purposes and with the consent of an IRB. This limited access will be under the terms of a data sharing agreement or contract that, at a minimum, provides you with the same level of confidentiality and protection provided by this document. However, even these qualified researchers will not be permitted to copy raw study data that identifies you, or that could be used to identify you, or to remove it from the secure facilities in which it is stored without your consent.

The sponsor of this project, NHTSA, may publicly release data, in final reports or other publication or media for scientific, educational, research or outreach purposes. Additionally, NHTSA may be required to release data due to Freedom of Information Act (FOIA) or other Open Government Initiative request. Data will not be released in raw form. Any data released under FOIA will not be linked to your name or contact information, and any personally identifying information will be redacted, edited, or removed. This includes editing of video and or audio files to remove personally identifying information if necessary in final reports or other publication or media for scientific, educational, research or outreach purposes.”

VI. Compensation

You will be paid \$70 for your full participation. You will be paid at the end of this session in cash. Expected participation time will be for one visit, lasting approximately two hours. If the session ends early for any reason, you will be paid at the rate of \$30 per hour, rounded to the nearest ½ hour, and a minimum of \$15.

VII. Freedom to Withdraw

Participants in this study are free to withdraw at any time. There is no penalty for withdrawing. If you choose to withdraw, you will be compensated for the portion of time of the study for which you participated. Furthermore, you are free not to answer any question or respond to experimental situations without penalty. If you choose to withdraw while you are operating the vehicle on public roads, please inform the experimenter of this decision and he/she will direct you to return to VTTI and safely park the test vehicle. If you choose to withdraw while you are operating the vehicle on the test track, please inform the experimenter of this decision and he/she will direct you off of the test track and have you safely park the test vehicle.

VIII. Approval of Research

Before data can be collected, the research must be approved, as required, by the Institutional Review Board for Research Involving Human Subjects at Virginia Polytechnic Institute and State University and by the Virginia Tech Transportation Institute. You should know that this approval has been obtained. This form is valid for the period listed at the bottom of the page.

IX. Subject’s Responsibilities

If you voluntarily agree to participate in this study, you will have the following responsibilities:

1. To follow the experimental procedures as well as you can.

2. To inform the experimenter if you have difficulties of any type.
3. To wear your seat belt while operating the vehicle.
4. To abstain from any substances that will impair your ability to drive.
5. To obey traffic regulations when on public roads, including the posted speed limit.
6. To adhere to the 35 mph speed limit on the test track, and maintain safe operation of the vehicle at all times.
7. To treat the driving task as the primary task and perform other tasks only when it is safe to do so.

X. Participant's Acknowledgments

Check all that apply:

- I am not under the influence of any substances which may impair my ability to safely participate in this experiment.
- If I am pregnant I acknowledge that I have either discussed my participation with my physician, or that I accept any additional risks due to pregnancy
- I do not have a history of neck or back injury or pain.
- I do not have uncontrolled diabetes
- I do not have advanced osteoporosis
- I do not have a history of a heart condition
- I have not have had any major surgery in the last 6 months.
- I have not had an epileptic seizure or lapses of consciousness within the past 12 months.
- I do not have chronic migraines or tension headaches.
- I will inform the experimenter of any concerns or questions I have about this study.

XI. Consent to Use Video/Audio Data for Research Reporting Purposes

Digital video cameras will be used to record you while driving, including your face. These digital video files could be used to clarify the experimental methods and to help report findings at technical conferences and other presentations. These video files may also be shown to the research sponsors who may use the video/audio data, which will not be linked to your name or contact information, in final reports or other publication or media for scientific, educational, research or outreach purposes. This includes editing of video and or audio files to remove personally identifying information if necessary in final reports or other publication or media for scientific, educational, research or outreach purposes. By signing this document, you are giving your permission for us to show portions of video when useful for research reporting purposes and as specified by the research sponsor (in final reports or other publication or media for scientific, educational, research or outreach purposes).

XII. Participant’s Permission

I have read and understood the Information Sheet and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent for participation in this project. **If I participate, I may withdraw at any time without penalty. I agree to abide by the rules of this project.**

Participant’s Name (Print)	Signature	Date
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Experimenter’s Name (Print)	Signature	Date
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Should I have any questions about this research or its conduct, I may contact:

Myra Blanco	mblanco@vtti.vt.edu	(540) 231-1500
Sheldon Russell	srussell@vtti.vt.edu	(540) 231-1500

If I should have any questions about the protection of human research participants regarding this study, I may contact: Dr. David Moore, Chair of the Virginia Tech Institutional Review Board for the Protection of Human Subjects, telephone: (540) 231-4991; email: moored@vt.edu.