

DEPARTMENT OF TRANSPORTATION
INFORMATION COLLECTION SUPPORTING STATEMENT

TITLE OF INFORMATION COLLECTION: Driver Distraction Measurement Research

OMB CONTROL NUMBER: 2127-NEW

INTRODUCTION

This is to request the Office of Management and Budget's (OMB) renewed three-year approved clearance for the information collection entitled, "Driver Distraction Measurement Research." This research is primarily observational in nature, in which members of the public perform driving related tasks and electronic device use tasks while their eye glance and driving behavior is observed. The information collection aspect of this research includes the gathering of information used to screen participants (such as demographic and driving habits information) and a small set of questions used to assess participants' well-being after driving in a simulator. While this collected information will not be analyzed in any way, a Supporting Statement Part B has been prepared and submitted to provide clear information regarding how the information will be used.

Part A. Justification

1. Circumstances That Make The Collection Of Information Necessary. *Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information.*

Subchapter V of Title 49 of the United States Code (U.S.C.) authorizes the Secretary of Transportation to conduct "motor vehicle safety research, development, and testing programs and activities, including activities related to new and emerging technologies that impact or may impact motor vehicle safety." 49 U.S.C. § 30182. Pursuant to Section 1.95 of Title 49 of the Code of Federal Regulations (CFR), the Secretary has delegated this authority to the National Highway Traffic Safety Administration (NHTSA).

In June 2012, U.S. Transportation Secretary Ray LaHood released a "Blueprint for Ending Distracted Driving" summarizing a comprehensive strategy to address the dangerous practice of hand-held cell phone use while driving. The plan outlined steps that NHTSA will take to mitigate driver distraction crashes including the development of nonbinding, voluntary guidelines for minimizing the distraction potential of in-vehicle and portable electronic devices. These guidelines are being developed in three phases. The research outlined here supports the third phase by developing a distraction measurement protocol and task acceptance criteria for auditory-vocal device tasks. The first phase covers visual-manual interfaces of electronic devices installed in vehicles as original equipment and has been completed and published. Phase 2 covers visual-manual interfaces of portable and aftermarket devices.

2. How, By Whom, And For What Purpose Is The Information To Be Used. *Indicate how, by whom, and for what purpose is the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.*

This research involves two information collection aspects and an observational aspect.

First, there is a candidate participant screening process. The screening process serves to ensure that study participants meet certain criteria such that their driving performance will be representative of the general public and testing can be safely accomplished. The study participant criteria relate primarily to driving habits and health. Candidate study participants are reached through the use of an advertisement consisting of the study description and invitation to participate that will be published on print and online newspapers. Individuals interested in participation will respond to the invitation advertisement by visiting a secure website containing a brief study description. Along with the study description, a web link is provided that interested candidate participants can follow to begin the screening process. The screening questions are presented via the secure website and have two parts: The first part is a short set of questions (see Question set 1) used to determine whether the respondents meet the basic qualifications of participation. The form solicits demographic, contact, and driving license and history information. The second set of screening questions (see Question set 2) is sent via e-mail only to respondents who meet qualification criteria and are in age/gender combinations for which additional participants are needed. The second set of questions is used to determine whether the respondents are in good health and likely to satisfactorily and safely complete study participation if selected. NHTSA and its contractors access the response information from both sets of screening questions via secure website and use the information to evaluate individuals' suitability for study participation.

The observational aspect of the research involves two options with each participant assigned to one of the two test venue options, which include a "Driving Simulator" or a "Non-Driving" venue. Both venues involve sitting in a vehicle and performing in-vehicle tasks and a detection response task (DRT). In the driving simulator test venue, in-vehicle tasks and DRT will be performed together with a simulated driving task. In the non-driving venue, the in-vehicle tasks and the DRT will be performed alone, with no driving task.

The second information collection consists of a "simulator sickness questionnaire" (Question set 3) given to participants assigned to drive in a fixed-based driving simulator. Some individuals are susceptible to symptoms of discomfort when driving a simulator. A simulator sickness questionnaire information is used to determine whether participants need rest or assistance getting home after participation in the study. It is also used for planning of future experimental protocols.

3. Extent Of Automated Information Collection. *Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g. permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also describe any consideration of using information technology to reduce burden.*

Electronic collection of recruitment information is facilitated through the use of a secure website. Candidate participants learn of the study through printed and online newspaper advertisements. These advertisements direct the candidate to go to the secure web page address to complete the basic qualifications questions (Question set 1). Information entered by candidate participants is securely

stored in electronic format for review by study staff. Secure web-based collection of recruitment information avoids the need to mail printed question sets to candidates or conduct phone interviews.

In the observational experiments, a data acquisition system will be used to record driving inputs, eye glance locations, and well as to video record the driving scene and the driver's eyes and manual control inputs during in-vehicle tasks. The data acquisition system and its eye tracker and accompanying software are used to automate the determination of eye glance locations and to automatically record other driver actions and driving events.

4. Describe Efforts To Identify Duplication. *Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purposes described in item 2 above.*

The information collected during participant recruitment is specific to the particular individuals that will participate by driving in the experiment. Therefore, similar information collected from other individuals is not relevant or applicable. The agency is also not aware of any other sources of this information.

NHTSA is not aware of any test procedure that currently exists for the purposes of measuring driver distraction during auditory-vocal in-vehicle task performance.

5. Efforts To Minimize The Burden On Small Businesses. *If the collection of information impacts small businesses or other small entities, describe any methods used to minimize burden.*

This collection of information involves individuals only and will not affect small businesses or other small entities.

6. Impact Of Less Frequent Collection Of Information. *Describe the consequence to federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.*

This information collection has only one instance.

If the information is not collected, NHTSA will not be able to conduct the study because the agency would be unable to schedule participants for the study. Further, without collecting candidate information, NHTSA would be unable to confirm that participants have the necessary amount of driving experience and balances of gender and age.

This important research effort consisting of two studies will be conducted one time. The research is critical to NHTSA's ability to respond to the Secretary of Transportation's call to minimize driver distraction. As the agency responsible for maintaining the standards for vehicle safety in the U.S., NHTSA is constantly seeking objective data for use in basing decisions about how to best protect the road traveling public and minimize deaths and injuries associated with car crashes. Timely, accurate information on driver behavior and performance considering modern day vehicle equipment and driver habits is essential to NHTSA determining the most appropriate recommendations and requirements for vehicle equipment and driving safety. With regard to the topic of driver distraction, the rapid rate of development of new and different electronic devices that drivers may want to bring into the vehicle with them warrants frequent examination of the state of contemporary driver behavior and ways to minimize

distraction and mitigate crashes. The agency would have no data-based method and criteria for assessing secondary task safety without the conduct of this research.

7. Special Circumstances. Explain any special circumstances that would cause an information collection to be conducted in a manner:

- Requiring respondents to report information to the agency more often than quarterly;
- requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it;
- requiring respondents to submit more than an original and two copies of any document;
- requiring respondents to retain records, other than health, medical, government contract, grant-in-aid, or tax records for more than three years;
- in connection with a statistical survey, that is not designed to produce valid and reliable results that can be generalized to the universe of study;
- requiring the use of a statistical data classification that has not been reviewed and approved by OMB;
- that includes a pledge of confidentiality that is not supported by authority established in statute or regulation, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use; or
- requiring respondents to submit proprietary trade secret, or other confidential information unless the agency can demonstrate that it has instituted procedures to protect the information's confidentiality to the extent permitted by law.

If one or more of the following applies, please explain in complete detail.

No special circumstances require the collection to be conducted in a manner inconsistent with the guidelines in 5 CFR 1320.6.

8. Compliance With 5 CFR 1320.8(D). If applicable, provide a copy and identify the date and page number of publication in the federal register of the agency's notice, required by 5 CFR 1320.8(d), soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and describe actions taken by the agency in response to those comments. Specifically address comments received on cost and hour burden.

Describe efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.

Consultation with representatives of those from whom information is to be obtained or those who must compile records should occur at least once every 3 years--even if the collection of information activity is the same as in prior periods. There may be circumstances that may preclude consultation in a specific situation. These circumstances should be explained.

In compliance With 5 CFR 1320.8(D), NHTSA published the 60-day Federal Register notice requesting public comment on the proposed collection of information on April 30, 2015, 80FR24314. NHTSA received two comments relating to the test procedures. Comments did not address the questions to be

asked of participants.

First, the Alliance of Automobile Manufacturers (the “Alliance”) expressed concern with NHTSA’s “continued focus on simulator research” as a basis for our driver distraction guidance. Specifically, the Alliance stated “that the study method proposed will not yield the meaningful and reliable metrics that will assist in saving lives and preventing crashes. Instead, such metrics and acceptance criteria should be developed using naturalistic driving data.” The Alliance qualified that this advice would not preclude the use of simulators for conducting development tests, but such tests and any auditory-vocal distraction metrics should be validated and calibrated against real-world data before putting forth recommendations. The Alliance also noted studies on auditory-vocal distraction it believes NHTSA should consider in formulating guidelines.

The objectives of the current work, to develop a low-cost, standardized test protocol and task acceptance criteria for evaluating the distraction potential of tasks performed with integrated systems with auditory-vocal interfaces, cannot be accomplished through naturalistic research. To achieve the greatest degree of repeatability and experimental control, the test protocol will use driving simulator and visual occlusion testing. NHTSA will, however, conduct a separate on-road study supporting the development of driver distraction guidelines that will be discussed in a Federal Register information collection request notice at a later date.

Second, American Honda Motor Company, Inc. (Honda) commented that the quality of the NHTSA's driver distraction measurement research would be enhanced if Honda's “Pedal Tracking and Detection Response Task” (PT-DRT) method was included in this NHTSA research. Honda proposed that NHTSA collect objective data using the PT-DRT method as part of the current research. Honda also indicated that they would like NHTSA to adopt the PT-DRT method as an acceptable alternative to the currently allowed task acceptance protocol in NHTSA's Driver Distraction Guidelines.

NHTSA intends to conduct this research using a method that builds on the protocol developed for our Visual-Manual Driver Distraction Guidelines and incorporates the extensively researched Detection Response Task (DRT). NHTSA intends for our Guidelines test protocol to be complementary and integrated, to the extent possible, to achieve an assessment that is both robust and efficient to conduct. NHTSA believes that the scientific basis for the DRT method being standardized by ISO is strong. Furthermore, the results of research by ISO member organizations have been robust. The DRT will provide an easy to implement, reliable, and well-vetted method for comparing distraction effects of secondary tasks with that of a reference task (i.e., radio tuning).

NHTSA has received briefings and demonstrations of the PT-DRT method by Honda and has been impressed with their scientific, reasoned approach and willingness to share information with NHTSA. However, we feel it is most efficient and cost-effective for us at this point to move forward with investigating the incorporation of the well-vetted DRT into our driving simulator based method and not to add a second, new test method to the planned research. NHTSA wishes to clarify that the research will determine the test methods that we will use in evaluating auditory-vocal secondary tasks performed by drivers, vehicle manufacturers may use whatever method they desire to assess their own vehicles.

9. Payment Or Gifts To Respondents. Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.

NHTSA will provide monetary payment of \$42.00 per hour for study participation. Such compensation is consistent with normal experimental practice to compensate participants for their time and encourage participation in the study. The payment amount is based on an hourly rate corresponding to a non-professional federal government employee (GS-8, Step 1) in the locality (Columbus, OH) in which the study is conducted. Additional pay above the base hourly rate serves to compensate for special participant criteria (e.g., technology experience), test procedure invasiveness (e.g., wearing a heart monitor sensor), and miles traveled to the test site. The compensation rate is reviewed by an independent Institutional Review Board.

10. Assurance Of Confidentiality. *Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy.*

The agency will provide participants with an informed consent form explaining that NHTSA will not release any information regarding their names or medical histories. Any such personal information will strictly be used for the purposes of study recruitment. In order to maintain privacy, test participants will be assigned a subject number which will be used instead of their name to identify all data collected.

11. Justification For Collection Of Sensitive Information. *Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private. This justification should include the reasons why the agency considers the questions necessary, the specific uses to be made of the information, the explanation to be given to persons from whom the information is requested, and any steps to be taken to obtain their consent.*

The test participant screening questions (included in Question sets 1 and 2) are used to ensure that individuals meet study eligibility requirements prior to their enrollment. Age and gender information is collected to permit participants to be assigned to the experimental conditions in a balanced manner. Some questions address topics that are commonly considered private, such as general health information. Health-related questions are posed to ensure that the drivers could be considered of average driving ability, are healthy enough to safely participate in the experimental protocol, are not impaired in any way, and have no episodic health conditions that could manifest themselves during their participation (such as an asthma attack, seizure). Candidates are asked whether they are taking any medications that may affect driving ability.

The specific health-related screening questions are listed in Question set 2. Health information will only be used for determining eligibility; however, the records will not be retained nor analyzed for the study.

12. Estimate Of Burden Hours For Information Requested. *Provide estimates of the hour burden of the collection of information. The statement should:*

- *Indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. Unless directed to do so, agencies should not conduct special surveys to obtain information on which to base hour burden estimates. Consultation with a sample (fewer than 10) of potential respondents is desirable. If the hour burden on respondents is expected to vary widely because of differences in activity, size, or complexity, show the range of estimated hour burden, and explain the reasons for the variance. Generally, estimates should not include burden hours for customary and usual business practices.*
- *If this request for approval covers more than one form, provide separate hour burden estimates*

- for each form and aggregate the hour burdens.*
- *Provide estimates of annualized cost to respondents for the hour burdens for collections of information, identifying and using appropriate wage rate categories. The cost of contracting out or paying outside parties for information collection activities should not be included here. Instead, this cost should be included in item 14.*

Time burden on candidate test participants and confirmed test participants, as well as costs associated with confirmed test participants are summarized below.

Overall Time to Complete all Questions:

Question Set	N	Time Per Respondent (Hours)	Total Time (Hours)	Cost	Total Cost
Candidate Test Participant Screening, Experiment 1	1200	0.0833	100	\$ 42.00	\$4,200.00
Candidate Test Participant Screening, Experiment 2	1000	0.10	100	\$ 42.00	\$4,200.00
Observational Experiment, Experiment 1	192	5.67	1088	\$ 42.00	\$45,696.00
Observational Experiment, Experiment 2	192	5.67	1088	\$ 42.00	\$45,696.00
Simulator Sickness Questionnaire, Part 1 (administered to Test Participants in Observational Experiment, Experiment 1)	150	0.0333	5	\$ 42.00	\$210.00
Simulator Sickness Questionnaire, Part 2 (administered to Test Participants in Observational Experiment, Experiment 2)	150	.0333	5	\$ 42.00	\$210.00
OVERALL TOTAL:		2732	N/A	N/A	\$ 103,068.00

13. Estimate Of The Total Annual Costs Burden. Provide an estimate of the total annual cost burden to respondents or record keepers resulting from the collection of information.

- *The cost estimates should be split into two components: (a) a total capital and start-up cost component (annualized over its expected useful life); and (b) a total operation and maintenance and purchase of services component. The estimates should take into account costs associated with generating, maintaining, and disclosing or providing the information. Include descriptions of methods used to estimate major costs factors including system and technology acquisition, expected useful life of capital equipment, the discount rate(s), and the time period over which costs will be incurred. Capital and start-up costs include, among other items, preparations for collecting information such as purchasing computers and software; monitoring, sampling, drilling and testing equipment; and record storage facilities.*
- *If cost estimates are expected to vary widely, agencies should present ranges of cost burdens and explain the reasons for the variance. The cost of purchasing or contracting out information collection services should be a part of this cost burden estimate. In developing cost burden estimates, agencies may consult with a sample of respondents (fewer than 10), utilize the 60-day pre-OMB submission public comment process and use existing economic or regulatory impact*

analysis associated with the rulemaking containing the information collection, as appropriate.

Generally, estimates should not include purchases of equipment or services, or portions thereof, made (1) prior to October 1, 1995, (2) to achieve regulatory compliance with requirements not associated with the information collection, (3) for reasons other than to provide information or keep records for the government, or (4) as part of customary and usual business or private practices.

There are no additional costs to respondents or record keepers.

14. Estimates Of Costs To The Federal Government. *Provide estimates of annualized cost to the federal government. Also, provide a description of the method used to estimate costs, which should include quantification of hours, operational expenses such as equipment, overhead, printing, and support staff, and any other expense that would not have been incurred without this collection of information.*

Costs incurred by the Federal Government relating to technical support of the conduct of this research are summarized below.

ACTIVITY	LABOR EQUIVALENT	Time (Hours)	Cost (per hour)	Total Cost
Study Design, Experiment 1	GS-14	480	\$57.28	\$27,494.40
Study Design, Experiment 2	GS-14	480	\$57.28	\$27,494.40
PRA Clearance Process	GS-14	200	\$57.28	\$11,456.00
Test equipment	N/A	N/A	N/A	\$150,000.00
Test Preparation, Experiment 1	GS-13 (GS-12, GS-13, GS-14)	2000	\$48.47	\$96,940.00
Test Preparation, Experiment 2	GS-13 (GS-12, GS-13, GS-14)	2000	\$48.47	\$96,940.00
Candidate Participant Screening, Experiment 1	GS-12	700	\$40.76	\$28,532.00
Candidate Participant Screening, Experiment 2	GS-12	700	\$40.76	\$28,532.00
Observational Experiment 1	GS-13 (GS-12, GS-13, GS-14)	3500	\$48.47	\$169,645.00
Observational Experiment 2	GS-13 (GS-12, GS-13, GS-14)	3900	\$48.47	\$189,033.00
Simulator Sickness Questionnaire, Experiment 1	GS-12	5	\$40.76	\$203.80
Simulator Sickness Questionnaire, Experiment 2	GS-12	5	\$40.76	\$203.80
Data Analysis, Experiment 1	GS-13 (GS-12, GS-13, GS-14)	2200	\$48.47	\$106,634.00
Data Analysis, Experiment 2	GS-13 (GS-12, GS-13, GS-14)	2200	\$48.47	\$106,634.00
Report Preparation, Experiment 1	GS-14	1600	\$57.28	\$91,648.00
Report Preparation, Experiment 2	GS-14	1600	\$57.28	\$91,648.00
TOTAL:				1,223,038.40

15. Explanation Of The Program Change Or Adjustments. *Explain the reasons for any program changes or adjustments reported in questions 12 or 13.*

This is a new data collection. Thus, creating a program change of adding 278 burden hours to NHTSA's overall burden hour total.

16. Publication Of Results Of Data Collection. *For collections of information whose results will be published, outline plans for tabulation, and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.*

Personal information will not be published. NHTSA may publish the age and gender results from this data collection in aggregate as part of a research report and future Federal Register published documents. Results will be used to compare protocol refinement options and secondary task effects on dependent metrics only. Results will not be tabulated by recruitment criteria levels (e.g., age, gender).

17. Approval For Not Displaying The Expiration Date Of OMB Approval. *If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.*

NHTSA is not seeking such approval.

18. Exceptions To The Certification Statement. *Explain each exception to the certification statement "Certification for Paperwork Reduction Act Submissions."*

No exceptions to the certification are required for this research plan.