



**DEPARTMENT OF TRANSPORTATION**

**National Highway Traffic Safety Administration**

**[Docket No. NHTSA-2024-0096]**

**Agency Information Collection Activities; Notice and Request for Comment; Factors That Influence the Effectiveness of Hazard Anticipation and Attention Maintenance Training**

**AGENCY:** National Highway Traffic Safety Administration (NHTSA), Department of Transportation (DOT).

**ACTION:** Notice and request for comments on a request for approval of a new information collection.

**SUMMARY:** The National Highway Traffic Safety Administration (NHTSA) invites public comments about our intention to request approval from the Office of Management and Budget (OMB) for a new information collection. Before a Federal agency can collect certain information from the public, it must receive approval from OMB. Under procedures established by the Paperwork Reduction Act of 1995, before seeking OMB approval, Federal agencies must solicit public comment on proposed collections of information, including extensions and reinstatement of previously approved collections. This document describes a collection of information for which NHTSA intends to seek OMB approval on Factors that Influence the Effectiveness of Hazard Anticipation and Attention Maintenance Training.

**DATES:** Comments must be submitted on or before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

**ADDRESSES:** You may submit comments identified by the Docket No. NHTSA-2024-0096 through any of the following methods:

- Electronic submissions: Go to the Federal eRulemaking Portal at <http://www.regulations.gov>. Follow the online instructions for submitting comments.
- Fax: (202) 493-2251.

- Mail or Hand Delivery: Docket Management, U.S. Department of Transportation, 1200 New Jersey Avenue SE, West Building, Room W12-140, Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except on Federal holidays.

*Instructions:* All submissions must include the agency name and docket number for this notice. Note that all comments received will be posted without change to <http://www.regulations.gov>, including any personal information provided. Please see the Privacy Act heading below.

*Privacy Act:* Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the *Federal Register* published on April 11, 2000 (65 FR 19477-78), or you may visit <https://www.transportation.gov/privacy>.

*Docket:* For access to the docket to read background documents or comments received, go to <http://www.regulations.gov> or the street address listed above. Follow the online instructions for accessing the dockets via internet.

**FOR FURTHER INFORMATION CONTACT:** For additional information or access to background documents, contact Christine Watson, Ph.D., Office of Behavioral Safety Research (NPD-320), [Christine.Watson@dot.gov](mailto:Christine.Watson@dot.gov), National Highway Traffic Safety Administration, W46-474, U.S. Department of Transportation, 1200 New Jersey Avenue SE, Washington, DC 20590.

**SUPPLEMENTARY INFORMATION:** Under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.), before an agency submits a proposed collection of information to OMB for approval, it must first publish a document in the *Federal Register* providing a 60-day comment period and otherwise consult with members of the public and affected agencies concerning each proposed collection of information. The OMB has promulgated regulations describing what must be included in such a document. Under OMB's regulation (at 5 CFR 1320.8(d)), an agency must ask for public comment on the following: (a) whether the proposed collection of

information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility; (b) the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used; (c) how to enhance the quality, utility, and clarity of the information to be collected; and (d) how to minimize the burden of the collection of information on those who are to respond, including the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g. permitting electronic submission of responses. In compliance with these requirements, NHTSA asks for public comments on the following proposed collection of information for which the agency is seeking approval from OMB.

*Title:* Factors that Influence the Effectiveness of Hazard Anticipation and Attention Maintenance Training

*OMB Control Number:* New

*Form Number(s):* NHTSA Forms 2018, 2019, 2020, 2021

*Type of Request:* Request for approval of a new information collection

*Type of Review Requested:* Regular

*Requested Expiration Date of Approval:* 3 years from date of approval

*Summary of the Collection of Information:*

The National Highway Traffic Safety Administration (NHTSA) is seeking approval for a one-time voluntary information collection from 168 participants ages 18 and 19 who do not yet have driver's licenses for a research study on novice driver training. Specifically, this collection involves developing and testing a novice driver training program on a smartphone-like platform and determining whether the effectiveness of the training differs for participants of different sexes, socioeconomic status (SES) strata, and trait levels of sensation seeking and aggressiveness.

To be eligible for the study, participants must be 18 or 19 years old, must not have an unrestricted driver's license or an intermediate/provisional license that allows driving independently, and must be interested in obtaining one in the next 12 months. Recruitment efforts will include posting information about the study on social media platforms, providing study information to contacts in local communities (e.g., community college faculty, high school principals, local driving schools), and reaching out to those who participated in past studies at the research center and agreed to be contacted about future opportunities. Enrolled participants will complete either the hazard anticipation and attention maintenance training program or a placebo training program on a smartphone-like platform. Then, participants' driving performance will be assessed on a computerized driving simulator. Finally, participants will complete a questionnaire that includes demographic questions and two validated scales to assess trait levels of sensation seeking and aggressiveness. After data collection, the research team will examine whether driving simulator performance differs between participants who took the hazard anticipation and attention maintenance training program and those that received the placebo training. The research team will also investigate whether the effects of training differ by sex, SES, and propensities for sensation seeking and aggressiveness.

Prior to conducting the study, the research team will obtain review and approval of this data collection from an Institutional Review Board (IRB) that meets all Federal requirements in 45 CFR 46, is registered with the Office for Human Research Protections, and has a Federalwide Assurance. NHTSA will use the results of this study to produce a technical report containing summary descriptive and inferential statistics. The technical report will be shared with State highway safety offices, local governments, policymakers, researchers, educators, advocates, and others who may wish to use the data from this survey to support their work on novice and teen driver safety.

*Description of the Need for the Information and Proposed Use of the Information:*

Novice teen drivers are more likely to crash in the first several months after they obtain licenses than more experienced drivers. Higher crash rates are observed for novice drivers who first obtain their licenses at ages 18 and 19,<sup>1</sup> novice drivers who live in zip codes with higher poverty rates,<sup>2</sup> male novices,<sup>3</sup> and novices with greater propensities for personality factors like sensation seeking and aggressiveness.<sup>4</sup> One reason novices who first obtain their licenses at age 18 or 19 are at higher risk of crashing may be because most States do not apply Graduated Driver Licensing (GDL) requirements to novice drivers 18 and older. GDL programs typically restrict nighttime driving and the number of teen passengers that can be in the vehicle and often include the requirement to enroll in a driver education program. An increasing proportion of teens are waiting until age 18 or older to get their licenses,<sup>5</sup> when they are exempt from most States' GDL requirements, and part of this delay may be the cost and availability associated with traditional novice driver education programs.<sup>6</sup> However, while most research has failed to find evidence that traditional pre-licensure driver education reduces novice drivers' crash risk,<sup>7</sup> a growing body of studies suggests that training that focuses on teaching specific skills—hazard anticipation and attention maintenance—may increase novice drivers' safety. Prior studies also suggest that trainings focused on these skills may especially benefit male novices,<sup>8</sup> novice drivers from lower SES backgrounds,<sup>2</sup> and young drivers with lower levels of the sensation seeking and aggressiveness personality traits.<sup>9</sup>

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<sup>1</sup> Masten, S., Foss, R., & Marshall, S. (2011). Graduated driver licensing and fatal crashes involving 16- to 19-year-old drivers. *Journal of the American Medical Association*, 306(14), 1098-1103. <https://jamanetwork.com/journals/jama/fullarticle/1104325>

<sup>2</sup> Roberts, S., Zhang, F., Fisher, D., & Vaca, F. (2021). The effect of hazard awareness training on teen drivers of varying socioeconomic status. *Traffic Injury Prevention*, 22(6), 455-459. <https://doi.org/10.1080/15389588.2021.1940984>

<sup>3</sup> National Center for Statistics and Analysis. (2024, July). *Young drivers: 2022 data* (Traffic Safety Facts. Report No. DOT HS 813 601). National Highway Traffic Safety Administration. <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813601>

<sup>4</sup> Bates, L. J., Davey, J., Watson, B., King, M. J., & Armstrong, K. (2014). Factors contributing to crashes among young drivers. *Sultan Qaboos University Medical Journal*, 14(3), e297 – e305. <https://pubmed.ncbi.nlm.nih.gov/articles/PMC4117653/>

<sup>5</sup> Twenge, J., & Park, H. (2019). The decline in adult activities among U.S. adolescents, 1976-2016. *Child Development*, 90(2), 638-654. <https://doi.org/10.1111/cdev.12930>

<sup>6</sup> Tefft, B. & Foss, R. (2019). *Prevalence and timing of driver licensing among young adults (Research Brief)*. AAA Foundation for Traffic Safety. [https://aaaafoundation.org/wp-content/uploads/2019/10/19-0500\\_AAAFTS\\_Teen-Driver-Safety-Week-Brief\\_r1.pdf](https://aaaafoundation.org/wp-content/uploads/2019/10/19-0500_AAAFTS_Teen-Driver-Safety-Week-Brief_r1.pdf)

<sup>7</sup> Kirley, B. B., Robison, K. L., Goodwin, A. H., Harmon, K. J. O'Brien, N. P., West, A., Harrell, S. S., Thomas, L., & Brookshire, K. (2023, November). *Countermeasures that work: A highway safety countermeasure guide for State Highway Safety Offices, 11th edition, 2023* (Report No. DOT HS 813 490). National Highway Traffic Safety Administration. [https://www.nhtsa.gov/sites/nhtsa.gov/files/2023-12/countermeasures-that-work-11th-2023-tag\\_0.pdf](https://www.nhtsa.gov/sites/nhtsa.gov/files/2023-12/countermeasures-that-work-11th-2023-tag_0.pdf)

<sup>8</sup> Thomas, F., Rilea, S., Blomberg, R., Peck, R., & Korbela, E. (2016). *Evaluation of the safety benefits of the risk awareness and perception training program for novice teen drivers* (Report No. DOT HS 812 235). National Highway Traffic Safety Administration. [https://rosap.nhtsa.gov/view/dot/1986/dot\\_1986\\_DS1.pdf](https://rosap.nhtsa.gov/view/dot/1986/dot_1986_DS1.pdf)

<sup>9</sup> Zhang, T., Hajiseyedjavadi, F., Wang, Y., Samuel, S., Qu, X., & Fisher, D. (2018). Training interventions are only effective on careful drivers, not careless drivers. *Transportation Research Part F* (58), 693-707. <https://doi.org/10.1016/j.trf.2018.07.004>

Hazard anticipation training teaches novices to be aware of hazards on the road that are visible *and* those that are hidden. Novice driver training programs targeting hazard anticipation have reduced behaviors linked to crashes on driving simulators<sup>10</sup> and during on-road drives<sup>11</sup> and have reduced crashes among 18-year-old newly-licensed males by 32% in the year following training.<sup>8</sup> Attention maintenance training teaches novices to reduce the number and duration of long glances away from the forward roadway. Novice driver training programs focused on attention maintenance have reduced behaviors linked to crashes on driving simulators<sup>12</sup> and in the field,<sup>13</sup> and the benefits of training extended up to four months.<sup>14</sup>

The goal of this information collection is to test the effectiveness of a hazard anticipation and attention maintenance training program for novice drivers that takes relatively little time to complete and could support future efforts to deliver the training via smartphones. Another goal of the information collection is to determine whether the effectiveness of the training program differs for groups of novices who may be at higher risk, i.e., different sexes, SES levels, and trait levels of sensation seeking and aggressiveness. NHTSA will use the results of this study to produce a technical report to be shared with State highway safety offices, local governments, policymakers, researchers, educators, advocates, and others who may wish to use the data from this survey to support their work on novice and teen driver safety.

*Affected Public:* Participants will be English-speaking adults, aged 18 - 19, without a driver's license.

*Estimated Number of Respondents:*

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<sup>10</sup> Pollatsek, A., Narayanan, V., Pradhan, A., & Fisher, D. (2006). Using eye movements to evaluate a PC-based risk awareness perception training program on a driving simulator. *Human Factors*, 48(3), 255-259. <https://doi.org/10.1518/001872006778606787>

<sup>11</sup> Pradhan, A., Pollatsek, A., Knodler, M. & Fisher, D. (2009). Can younger drivers be trained to scan for information that will reduce their risk in roadway traffic scenarios that are hard to identify as hazardous?, *Ergonomics*, 52, 657-673. <https://pmc.ncbi.nlm.nih.gov/articles/PMC2707454/>

<sup>12</sup> Divekar, G., Pradhan, A. K., Masserang, K. M., Reagan, I., Pollatsek, A., & Fisher, D. L. (2013). A simulator evaluation of the effects of attention maintenance training on glance distributions of younger novice drivers inside and outside the vehicle. *Transportation Research Part F*, 20, 154-169. <https://doi.org/10.1016/j.trf.2013.07.004>

<sup>13</sup> Pradhan, A. K., Divekar G., Masserang, K., Romoser, M., Zafian, T., Blomberg, R., Thomas, F., Reagan, I., Knodler, M., Pollatsek, A., & Fisher, D. (2011). The effects of focused attention training (FOCAL) on the duration of novice drivers' glances inside the vehicle. *Ergonomics* (54), 917-931. <https://pmc.ncbi.nlm.nih.gov/articles/PMC3437545/>

<sup>14</sup> Divekar, G., Samuel, S., Pollatsek, A., Thomas, D. F., Korbela, K., Blomberg, R. D., & Fisher, D. L. (2016). Effects of a PC-based attention maintenance training program on driver behavior can last up to four months. *Transportation Research Record*, 2602(1), 121 – 128. <https://doi.org/10.3141/2602-15>

Overall, 334 annual respondents will complete the screening questionnaire, and 60 of these respondents will undergo the informed consent process. Finally, of these 60, 54 annual respondents will enroll and participate in the study.

Although the study site has not been finalized, our descriptions assume that the study will be conducted in one potential study site area, Boston, Massachusetts. The study plans to recruit participants who are ages 18 and 19, who do not have an unrestricted driver's license or an intermediate/provisional license that allows driving independently, and who are interested in obtaining an unrestricted or intermediate/provisional license in the next 12 months. Participants may have a learner's permit. A screening questionnaire will be administered electronically to an estimated 1,002 potential participants (334 annually) to yield a total sample of 168 participants (56 annually). We estimate that approximately 18% (180 participants) of those who respond to the screening questionnaire will be eligible, interested, and will travel to the research center to undergo the informed consent procedure. Then, an estimated 168 participants (approximately 94% of those who undergo the informed consent process) are expected to consent and enroll in the study. Of the 168 enrolled participants, 84 will be from a low SES stratum (as determined by average poverty rate of zip code of residence at age 17) and 84 will be from a medium/high SES stratum. An equal number of males and females will be recruited within each SES group.

*Frequency:* This study will be conducted one time during the three-year period for which NHTSA is requesting approval.

*Estimated Total Annual Burden Hours:*

The research team expects to provide screening questionnaires to an estimated 1,002 potential participants to determine their eligibility for the study. The research team will post the opportunity on social media platforms likely to be seen by eligible participants and provide it to existing contacts (e.g., managers at neighborhood development community centers, teen centers, community college faculty in the area, high school principals, local driving schools) in local communities. The research team will also contact potential participants via e-mail or phone who

indicated a prior interest in similar past studies if they agreed to be contacted about future opportunities. Completing the screening questionnaire has an estimated burden of 5 minutes per respondent (an annual burden of 28 hours for 334 annual respondents, averaged over the three-year approval period) (Table 1).

Similar to a NHTSA behavioral study recently reviewed by OMB,<sup>15</sup> we estimate that approximately 18% (180 individuals) of those who respond to the screening questionnaire will be eligible, interested, and will travel to the research center to undergo the informed consent process. Travel time from around the Boston metropolitan area is estimated at 60 minutes round trip, and the informed consent process is estimated to take 10 minutes. Thus, the burden for this second phase of the study, including travel time, is estimated at 70 minutes per participant (an annual burden of 70 hours for 60 annual respondents).

Finally, we estimate that approximately 94% (168 individuals) of those who undergo the informed consent process will consent and enroll in the study. For these participants, participation in the study is estimated at 240 minutes per participant (an annual burden of 224 hours for 56 annual respondents). Study tasks include (see Table 1):

- i. An enrollment process (5 minutes);
- ii. A pre-study questionnaire assessing participants' propensity to experience motion sickness in the computerized driving simulator (5 minutes);
- iii. A pre-training hazard anticipation and attention maintenance test administered on a smartphone-like platform (20 minutes);
- iv. A novice driver training program (placebo or treatment), administered on a smartphone-like platform (60 minutes);
- v. A post-training hazard anticipation and attention maintenance test administered on a smartphone-like platform (20 minutes);
- vi. A break (15 minutes);
- vii. A drive on a computerized driving simulator (90 minutes); and

- viii. A post-study questionnaire (25 minutes) that consists of: demographic questions; the Arnett Inventory of Sensation Seeking;<sup>15</sup> the Buss-Perry Aggression Questionnaire;<sup>16</sup> and a post-study debriefing.

In total, NHTSA estimates that this information collection will yield a total annual burden of 322 hours (Table 1).

NHTSA estimates the opportunity cost to respondents using an average hourly wage. The May 2023 mean hourly wage for all occupations in the United States was \$31.48 per hour.<sup>17</sup> Additionally, given that wages in burden estimates need to be fully-loaded,<sup>18</sup> we added 29% to reflect the full cost of labor, including benefits, yielding a fully-loaded mean hourly wage of \$40.61. Therefore, NHTSA estimates the total annual opportunity cost to be approximately \$13,069 (Table 1).

**Table 1. Annual Burden Estimates**

Information Collection	Annual Number of Respondents	Burden per Response	Hourly Opportunity Cost	Opportunity Cost per Response	Total Annual Opportunity Cost	Total Annual Burden
<b>NHTSA Form 2018 (Total)</b>	<b>334</b>	<b>5 minutes</b>	<b>\$40.61</b>	<b>\$3.38</b>	<b>\$1,129</b>	<b>28 hours</b>
<i>Screening Questionnaire</i>						
<b>NHTSA Form 2019 (Total)</b>	<b>60</b>	<b>70 minutes</b>	<b>\$40.61</b>	<b>\$47.38</b>	<b>\$2,843</b>	<b>70 hours</b>
<i>Travel Time (Round-Trip)</i>		<i>60</i>				
<i>Informed Consent</i>		<i>10</i>				
<b>NHTSA Form 2020 (Total)</b>	<b>56</b>	<b>10 minutes</b>	<b>\$40.61</b>	<b>\$6.77</b>	<b>\$379</b>	<b>9 hours</b>
<i>Enrollment</i>		<i>5</i>				
<i>Pre-Study Questionnaire</i>		<i>5</i>				
<b>NHTSA Form 2021 (Total)</b>	<b>56</b>	<b>230 minutes</b>	<b>\$40.61</b>	<b>\$155.67</b>	<b>\$8,718</b>	<b>215 hours</b>
<i>Pre-Training Test</i>		<i>20</i>				
<i>Training Program</i>		<i>60</i>				
<i>Post-Training Test</i>		<i>20</i>				
<i>Break</i>		<i>15</i>				
<i>Driving Simulator Testing</i>		<i>90</i>				
<i>Post-Study Questionnaire</i>		<i>25</i>				
<b>Total</b>					<b>\$13,069</b>	<b>322 hours</b>

*Estimated Total Annual Burden Cost: \$0*

<sup>15</sup> Arnett, J. (n.d.) *Arnett Inventory Sensation Seeking (AISS)*. [https://sjdm.org/dmidi/Arnett\\_Inventory\\_of\\_Sensation\\_Seeking.html](https://sjdm.org/dmidi/Arnett_Inventory_of_Sensation_Seeking.html)

<sup>16</sup> Buss, A. & Perry, M. (n.d.) *Buss Perry Aggression Questionnaire (BPAQ)*. <https://psychology-tools.com/test/buss-perry-aggression-questionnaire>

<sup>17</sup> U.S. Bureau of Labor Statistics. (2024, April 3). May 2023 National Occupational Employment and Wage Estimates. U.S. Bureau of Labor Statistics. [https://www.bls.gov/oes/current/oes\\_nat.htm#00-0000](https://www.bls.gov/oes/current/oes_nat.htm#00-0000)

<sup>18</sup> <https://pra.digital.gov/burden/estimation/>

Participation in this study is voluntary and there are no costs to participants beyond the time spent completing the study. The costs associated with travel to the research center are minimal and expected to be offset by the compensation that will be provided to the research participants.

*Public Comments Invited:* You are asked to comment on any aspects of this information collection, including (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Department, including whether the information will have practical utility; (b) the accuracy of the Department's estimate of the burden of the proposed information collection; (c) ways to enhance the quality, utility and clarity of the information to be collected; and (d) ways to minimize the burden of the collection of information on respondents, including the use of automated collection techniques or other forms of information technology.

(AUTHORITY: The Paperwork Reduction Act of 1995; 44 U.S.C. Chapter 35, as amended; 49 CFR 1.49; and DOT Order 1351.29A.)

**Jane Terry**

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