CONVERSION TABLE FOR 43 CFR PARTS 6000–9000—Continued

Existing parts	New parts	Comments
8400	.....	Removed 04/09/96, 61 FR 15722.
8600	.....	To be removed.
9100, 9180, 9183, 9185.	.....	Moved to Part 2000.
9210	.....	To be removed.

Dated: May 24, 1996.

Bob Armstrong,

Assistant Secretary of the Interior.

[FR Doc. 96–14095 Filed 6–4–96; 8:45 am]

BILLING CODE 4310–84–M

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

49 CFR Part 391

[FHWA Docket No. MC–96–4]

Proposed Research Plan on Vision Standard

AGENCY: Federal Highway Administration (FHWA), Department of Transportation.

ACTION: Notice; request for comments.

SUMMARY: The FHWA is requesting comments on a proposed research plan to explore performance-based alternatives to the existing vision standard for drivers of commercial motor vehicles (CMV). The findings of this research effort may result in the modification of that standard. The FHWA seeks comments on all aspects of the research plan, including its scientific merit, likelihood of achieving its objective, methodological validity, consideration of all relevant research, and other practical issues.

The FHWA is also announcing a public hearing to obtain comments on the proposed research plan. The hearing is designed to obtain public input on the proposed research plan, not to determine the status of individual drivers or participants in the vision waiver program. At the hearing, the FHWA does not intend to discuss the status, results, or recommendations that might result from the vision waiver program.

A review of scientific literature relevant to the vision standard and the proposed research plan have been placed in FHWA Docket MC–96–4. In addition, both documents are accessible electronically through the Federal Highway Administration's World Wide Web (WWW) site.

DATES: The comment period will remain open until further notification in the Federal Register. The public hearing will be held on August 9, 1996, at the Chicago O'Hare Marriot, 8535 West Higgins Road, Chicago, IL, 60631, (312) 693–4444.

ADDRESSES: Submit written, signed comments to FHWA Docket MC–96–4, Room 4232, HCC–10, Office of the Chief Counsel, Federal Highway Administration, 400 Seventh Street., SW., Washington, DC 20590.

The literature review and proposed research plan are on the Federal Highway Administration's World Wide Web site (http://cti1.volpe.dot.gov/ohim/whtnewhd). Users with questions about the operation of the WWW site should call the FHWA Computer Help Desk at (202) 366–1120.

FOR FURTHER INFORMATION CONTACT: Mr. Charles Rombro, Federal Highway Administration, Office of Motor Carriers, 400 Seventh Street SW., room 3104, Washington, DC 20590, telephone (202) 366–5615. Office hours are from 7:45 a.m. to 4:15 p.m., e.t., Monday through Friday, except Federal holidays.

SUPPLEMENTARY INFORMATION: The FHWA is authorized by statute to establish minimum physical qualification requirements for drivers of commercial motor vehicles. 49 USC 31502.

The Congress provided the FHWA with complementary regulatory authority with the enactment of the Motor Carrier Safety Act of 1984, codified in substantial part at 49 U.S.C. 31101–31162. This Act directed the Secretary to establish minimum safety standards to ensure, *inter alia*, that ''the physical condition of operators of commercial motor vehicles is adequate to enable them to operate such vehicles safely * * *.'' 49 U.S.C. 31136(a)(3).

The physical qualification regulations for CMV drivers in interstate commerce are found at 49 CFR 391.41. The qualification standards cover 13 areas which directly relate to the driving function. All but four of the standards adopted by the FHWA permit the individual determination of a driver's qualification. A person's qualification to drive is determined by a medical examiner who is knowledgeable about the on-the-job functions performed by a commercial driver and whether a particular condition would interfere with the driver's ability to operate a CMV safely. In the case of vision, hearing, insulin-using diabetes and epilepsy, the current standards are absolute, providing no discretion to the medical examiner.

The current vision standard specifies that drivers must meet the following three conditions:

1. distant visual acuity in each eye of at least 20/40, and distant binocular acuity of at least 20/40 in both eyes; and

2. field of vision of at least 70 degrees in the horizontal meridian of each eye; and

3. the ability to recognize the colors of traffic signals.

In order to improve protection for the public and provide for individual determinations of fitness to drive wherever possible, the Agency is interested in developing performance-based standards. In a Federal Register notice on the vision waiver program published on November 17, 1994 (59 FR 59386), the FHWA announced its intention to initiate a research plan to ''develop parameters for performance-based visual standards for all commercial drivers.'' 59 FR at 59389. The research plan outlined in this notice is designed to move the Agency towards a performance-based vision standard. This standard would incorporate the measurement of those visual capabilities deemed necessary for the safe operation of commercial vehicles. The research discussed below is designed to relate specific visual functions to specific driving tasks, such as the ability to stay in a lane. The standards would still be prescriptive in that they would establish a minimum score which individuals would be required to meet to be allowed to drive; however, the scoring scheme would be based on detailed research on the visual attributes required to safely operate a CMV.

Research Plan

The FHWA has developed a proposed research plan, an outline of which is provided below.

Background

The FHWA's review of the existing literature on vision and driving research led the FHWA to the following conclusions:

1. The current testing standard lacks criterion, or predictive, validity; that is, it is not clear that central visual acuity by itself is a good predictor of safe driving. This detracts from the perceived fairness of the standard. The principal shortcoming of the current standard is the emphasis on central visual acuity, which is a measure of how well an individual can discern static images in the center of vision under conditions of high luminance. Since many driving situations involve dynamic images under low luminance, other visual capacities may be equally

or more important than central visual acuity.

2. Improving the criterion validity of the vision standard would most likely require testing a broader array of visual capabilities than those included in the current standard.

3. There is no assurance that a standard based on a better understanding of the relationship between different visual capabilities and driving would result in a significant, measurable improvement in safety, in part because vision is a contributor to only a small number of crashes. CMV drivers comprise a small proportion of drivers, and are represented in a small proportion of crashes, not all of which are caused by failures of visual performance as currently measured. However, the weak observed causal relationship between vision and crashes may be a shortcoming with the current measurement of vision. It is therefore possible that the measurement of other visual functions could reveal a more significant and direct connection between vision and driving ability.

The goals of the proposed research are threefold:

1. Establish a list of visual performance parameters that appear to hold promise as a basis for a new standard, and design or adapt performance tests to measure these capabilities.

2. Evaluate the predictive validity of these tests.

3. Based on the results of these tests, establish a trial vision standard, and test that standard to evaluate its validity.

Outline of the Research Plan

The research contains both a long-term and a short-term track. The Agency may decide to conduct either of the two tracks individually, both tracks simultaneously, both tracks consecutively, or neither track. The emphasis of the short-term plan is to build on existing knowledge to develop an improved vision test, with the goal of adding two or three existing vision tests to the battery currently tested. This track does not call for significant new research, but rather seeks to take advantage of already completed work. This track could result in the development of a two-tier standard, with an expanded battery of tests in the first (screening) tier, and various administrative measures proposed for the drivers who do not pass this first tier. Administrative measures may include provisional or restricted licenses, waivers, or in-use monitoring of drivers.

The long-term plan consists of new research and analysis, which may lead to the development of a new standard.

Two phases of the research are already complete. The short-term research consists of six or seven additional stages, as explained below. The long-term research would consist of four additional phases.

The phases of the research are described below.

Research Completed or Underway

1. Development of the research plan. This phase is complete, and the work described below is the output of the planning effort. This phase describes the proposed approaches in some detail; certain elements are necessarily unspecified. For example, the choice of specific visual function tests cannot be made before further research and analysis are complete.

2. Design of testing strategy. This phase involves selecting and developing the form of the candidate tests, as well as the measures that the tests must predict. This phase is currently underway.

Selecting the candidate tests includes a general selection of visual functions to be tested, an inventory of the tests already available, and identification of new tests to be developed and validated. Tests should have broad acceptance and stable underlying population norms. The protocols for testing should be developed and accepted by researchers and testers, and results must be stable regardless of who administers the test. Acceptable population norms are necessary if a test is to be used to classify individuals based on ''normal'' results in the population of CMV drivers.

While some tests, such as the Snellen Letter test of visual acuity, are broadly accepted and have stable and well understood population norms, other tests of potentially important visual functions do not meet these standards. These latter tests would have to be evaluated. The evaluation would consider how important the visual function is in the driving task, the extent to which the test results are stable and reliable, and how readily the tests can be developed for broad usage.

Our review of the literature has led us to focus on the following visual functions as most relevant to the driving task: static acuity, contrast sensitivity, dynamic acuity, working field of view, dark focus, low contrast acuity, glare sensitivity, and vection.

The FHWA, with the assistance of a contractor, is in the process of identifying the behaviors that the tests must predict—the measures of effectiveness. This will be followed by the systematic development of measures to be validated by the visual performance tests. Theoretically, we would prefer to be able to relate a driver's performance on vision tests to an actual driving record, especially the driver's accident record. Because of the infrequency of accidents, however, we would need to test a very large number of drivers over many years to obtain reliable results. In addition, a ''clean'' experiment would require that we allow drivers who we suspect may be deficient in some key visual function to operate CMVs on the road. Allowing potentially hazardous drivers to operate CMVs poses obvious safety problems, and contravenes the FHWA's mandate to protect highway safety.

As a proxy for accidents, we are developing a list of candidate visually-related driving behaviors. This is a reasonable proxy because it is the driver's behavior that connects visual deficiencies and accidents. An example might include the time a driver takes to initiate a braking maneuver. Behaviors will be selected for further testing based on their likely validity and practicality. Since we will not be measuring accidents, it is especially important that the measures are closely related to driving performance.

After choosing behavioral measures, the Agency will develop test procedures and protocols.

Proposed Short-Term Research

3. Define criteria for selection of vision tests. The likely criteria will include: test availability with little or no modification, scientific reliability, construct validity, practicality of use in a testing environment, and acceptability to researchers and testers. While other criteria are possible, the FHWA anticipates that the factors listed above will be used to screen tests for their suitability for further research. Much of the work required to define the criteria has already been completed under tasks 1 and 2.

4. Select candidate tests. The researchers would select 3 to 5 candidate tests for further research. The tests would have to meet the criteria identified above. The researchers would determine which tests meet these criteria through a survey of the scientific community and other interest groups, and through the literature review conducted in task 1.

5. Design demonstration/evaluation project. This task consists of specifying the details of the testing procedures. The researchers would select a site for the tests, choose criteria for obtaining

test subjects, and detail the protocols for administering the vision tests.

6. Conduct empirical evaluation of operational feasibility. This is the actual testing component, in which the drivers will be tested in an operational setting to ensure that the new test battery's facilities requirements are not excessive, its personnel needs are realistic, and that the tests can be administered, scored, and interpreted in a timely fashion by the individuals responsible for administering the tests.

7. Conduct empirical evaluation of validity of pass/fail criteria for those candidate vision tests without sufficiently demonstrated construct validity. The first step in this task would be to define the study sample. The most likely sample would be age-matched 'visually impaired' and 'visually unimpaired' subjects on the candidate tests (all subjects would be required to hold a valid CDL). The researchers would then conduct the vision and performance tests and analyze the differences in performance between the two groups. Differences would be measured relative to alternative cutoff scores, so that the Agency could determine the significance of choosing different levels of stringency.

The FHWA could decide to bypass task 7, the empirical validation phase, if it determines that enough information currently exists to establish a new standard, or that additional research would be unlikely to lead to significant safety improvements. The Agency estimates that skipping task 7 would reduce the time needed to complete the research by one year.

8. Recommend tests and pass/fail criteria. Based on the work completed above, the researchers would propose specific tests to be added to the existing testing battery and cutoff scores for each test.

9. Convene interest groups to develop operational recommendations. These groups would include motor vehicle licensing administrators, researchers, industry associations, and safety advocates.

Proposed Long-Term Research

10. Design of tests and protocols. This includes developing the visual performance and behavioral tests specified in task 2, generating initial data from a pilot test, and designing draft protocols to be used in later stages.

The visual function test would include some combination of existing and new tests. The Agency would arrange the practical testing aspects, including the purchasing and licensing of tests, acquiring any software and documentation required, and developing the test protocols.

Pilot tests would be conducted on a small sample of drivers to verify test reliability and suitability for large scale testing. The Agency would modify procedures and protocols as appropriate. Upon completion of the pilot test, the FHWA would conduct the visual function tests on a medium-sized sample of drivers. The sample would be large enough to allow the Agency to analyze test score characteristics. Use of pilot tests would allow the Agency to ensure that a test would produce useable results. In addition, correlation between tests may be observed, in which case some tests may be eliminated from the final battery as redundant.

For driver behavior measures, the agency would develop simulator materials and closed-course testing procedures. To the extent possible, the FHWA would employ procedures which can be used on multimedia personal computers with a minimum of special equipment. The Agency would develop hardware, software, and testing protocols.

The extent of the work performed in this task will depend on whether the Agency conducts the short-term research. Some of the work outlined above may be conducted in task 2 of the short-term track. If that is the case, we will not repeat the work in this task.

11. Laboratory Simulation. This phase consists of evaluating the candidate tests in a controlled setting, to identify and correct any problems in the testing or protocols. This step is essentially a ''dress rehearsal'' for the full scale test. Because the next phase is the most costly in terms of time and resources, this phase was designed to allow the Agency to make a final decision about whether to continue with the research prior to commencing with the next phase of the plan, the full testing and evaluation.

A limited number of subjects would be given all the proposed visual function and driver behavior tests. The results of these tests would be analyzed extensively, including relationships between and among both sets of tests. The analysis would address the following issues:

a. Are the distributions of scores useable?

b. Is there sufficient variance to discern relationships between visual and driving tests?

c. How well do visual tests predict driving results, by themselves and in combination with other tests? How much of the variance between individuals in driving behavior can the vision tests explain?

The agency would also conduct a preliminary cost-benefit analysis. In addition to projecting the cost of the next phases of the research program, the analysis would estimate the cost of implementing a new vision standard and the possible safety benefits.

12. Validation Testing. This phase consists of two sequential activities, test preparation and data collection, the crux of the proposed research.

Test preparation includes selection and configuration of test sites, plus selection and preparation of subjects. The site (or sites) selected must have, or be able to accommodate, a driving simulator, a closed test course, and a road test course. Site preparation includes configuring the testing equipment for the site, surveying the road test course, and preparing and deploying signs and obstacles for the closed test course. Preparation of the subjects consists of briefing the participants and pre-testing them for the visual measures.

A final closed-course pilot test would then be conducted, using a small number of drivers. This would provide the Agency with a final opportunity to modify the test procedures.

Validation testing would probably include at least two distinct activities, simulation and closed-course testing, and would possibly also include controlled road testing. Variables would be strictly controlled in these simulation tests to ensure the accuracy and reliability of results. The FHWA expects that the simulators used for this phase would be more sophisticated, with higher video resolution than those used in the previous pilot test.

Closed-course testing would be used to test drivers under low visibility conditions. This is difficult to imitate on a simulator and is unsafe to test on the road.

If road testing is conducted, it would consist of non-intrusive instruments to record driver responses, such as eye movement patterns, blink rates, pupil diameter, and fixation points. This information, combined with data on the roadway obstacles, provides a stream of data related to working field of view, detection time, and how drivers react to critical events. The road test would be conducted under normal driving conditions to assure that the results are generalizable to normal CMV operating practices. There are a number of hurdles to using a road test, including the need to perform the test for an impractically long period to obtain sufficient data, and the possibility that drivers would modify their behavior if they are aware

that they are under observation. The FHWA would decide whether to conduct the road test after analyzing the results obtained in the simulation and closed-course tests.

13. Standard Development. The results of the preceding task would be analyzed for validity, reliability, and practicality. If the results of the validation testing justify specification of a new standard, a decision framework for that standard would be constructed.

Specific Questions

The FHWA is specifically interested in comments addressing the following issues:

1. Are there any methodological shortcomings in the research plan outlined above that need to be addressed?

2. Is the plan likely to meet the objective of leading to an improved, performance-based vision standard?

3. Does the plan reflect an understanding of the current literature and consider its implications?

4. Is the plan capable of adequately addressing practical matters, such as the cost of any new testing machinery developed, the level of training required to conduct new tests, and the time needed to take tests?

5. Has this type of research been conducted in other professions? What were the results?

6. Should the FHWA proceed with the short-term plan, the long-term plan, both, or neither?

7. Should the FHWA proceed with an alternative plan? If so, describe that plan.

Current Status of the Research Program

The FHWA is currently in the midst of step 2 of the research plan, which consists of inventorying existing tests and evaluating them against a number of criteria, including their cost, which visual functions they measure, overlap between different tests, and the amount of training required to conduct the tests.

Format of Public Hearing

The FHWA announced in the November 17th notice (59 FR 59386) its intention to hold a public hearing to discuss the research plan. The public hearing will be held on August 9, 1996, at the Chicago O'Hare Marriot, 8535 West Higgins Road, Chicago, IL 60631, (312) 693–4444. The hearing will begin at 8:30 a.m. and conclude at 4:30 p.m.

Individuals wishing to speak at the hearing should contact the FHWA at the address or phone number listed above under the heading ''For Further Information Contact.'' Individuals may submit written comments in addition to, or in place of, oral testimony. All commentors will be limited to ten minutes of oral remarks.

The hearing will commence with an explanation of the proposed research plan, including a brief description of the background to this effort, the goals of the proposed research, and the steps of the proposed plan. The FHWA will then accept questions from audience members, with individuals who have contacted the FHWA given the first opportunity to speak.

(49 U.S.C. 31136(a)(3), 31502)

Issued on: May 20, 1996.

Rodney E. Slater,

Federal Highway Administrator.

[FR Doc. 96–14041 Filed 6–4–96; 8:45 am]

BILLING CODE 4910–22–P

National Highway Traffic Safety Administration

49 CFR Part 571

[Docket No. 91–68; Notice 5]

RIN 2127–AC64

Federal Motor Vehicle Safety Standards; Rollover Prevention

AGENCY: National Highway Traffic Safety Administration (NHTSA), DOT.

ACTION: Denial of petitions for reconsideration.

SUMMARY: This notice announces the denial of petitions for reconsideration of the agency's decision to terminate rulemaking to develop a vehicle rollover stability standard.

FOR FURTHER INFORMATION CONTACT: The following persons at the National Highway Traffic Safety Administration, 400 Seventh Street, S.W., Washington, D.C. 20590:

For non-legal issues: Gayle Dalrymple, Office of Crash Avoidance Standards, telephone (202) 366–5559, facsimile (202) 366–4329.

For legal issues: Steve Wood, Office of the Chief Counsel, NCC–20, telephone (202) 366–2992, facsimile (202) 366–3820.

SUPPLEMENTARY INFORMATION:

I. 1994 Notice Terminating Rulemaking on a Vehicle Rollover Stability Standard

On June 28, 1994, NHTSA published a notice in the Federal Register announcing two agency actions: (1) the termination of rulemaking to develop a Federal Motor Vehicle Safety Standard on vehicle rollover stability; and (2) the proposal of a consumer regulation for labeling vehicles with rollover stability information. (59 FR 33254)

In the portion of the 1994 notice terminating rulemaking, the agency examined the suitability of using a variety of vehicle stability metrics [1] as a basis for a rollover standard. NHTSA concluded that two such metrics, tilt table angle (TTA) [2] and critical sliding velocity (CSV),[3] can each separately account for approximately half of the variability in rollover risk in single vehicle accidents remaining after considering driver, roadway, and environmental factors. NHTSA stated:

> The suitability of a vehicle safety standard based on rollover stability depends on the importance of rollover stability, as represented by a vehicle metric, relative to other rollover influences, such as vehicle handling properties, vehicle condition, the nature of the roadway and shoulder terrain, and driver behavior. The agency sought to determine whether vehicle stability metrics are significant variables in a statistical model of the risk of rollover. If they are, then a standard regulating stability might be justified, depending on the results of a comparison of benefits and costs for such a standard.
>
> After analyzing a number of static and dynamic rollover metrics, the agency concluded that two vehicle metrics, tilt table angle and critical sliding velocity, can account for about 50 percent of the variability in rollover risk in single vehicle accidents, after considering driver, roadway, and environmental factors. (Rollover risk is the number of single vehicle rollovers involving a particular make/model divided by the number of single vehicle crashes of all types involving the same make/model.) This statistical analysis was conducted on all light duty vehicles treated as a group. However, analysis of accident data indicated that certain subgroups of light duty vehicles are more likely to roll over than other subgroups. For example, sport utility vehicles and compact pickup trucks tend to be the most likely vehicles to roll over. Large passenger cars tend to be the least likely to roll over.

59 FR 33254, at 33258.

While NHTSA concluded that the two vehicle stability metrics were of some value in estimating the likelihood that a single vehicle accident involving a particular model of vehicle would result

[1] A vehicle stability metric is a measured vehicle characteristic that is analyzed to determine whether it is related to a vehicle's likelihood of rollover involvement.

[2] The tilt table test involves placing the vehicle on a platform which is then tilted about an axis parallel to the vehicle's longitudinal axis. TTA is the angle at which the last tire on the upper side of the platform loses contact with the platform and the vehicle begins to fall off the platform. This metric is influenced by changes in a vehicle's mass, center of gravity height, track width, and suspension movement, all of which are physically related to rollover stability.

[3] Critical sliding velocity includes the roll moment of inertia as well as the various static factors included in tilt table angle. CSV is calculated from an equation which can be found in the June 28, 1994 notice, as corrected on July 26, 1994 (59 FR 38038).