

in these regulations is scheduled for final voting at the March 2003 session of WP.29. AFS installation on motor vehicles in the European market could occur sometime after approval by WP.29. The second stage is forecast to be considered for approval in 2005. This could include roadway illumination for specific situations, such as highway, suburban, urban roads, inclement weather, and additional cornering lighting whose technical descriptions may be found in the formal draft document presented to the GRE (*see* TRANS/WP.29/GRE/2002/18—Proposal for a New Draft Regulation: “Uniform Provisions Concerning the Approval of Adaptive Frontlighting System (AFS) for Motor Vehicles” at <http://www.unece.org/trans/main/wp29/wp29wgs/wp29gre/grenwdoc/gre0218e.pdf>).

AFS implementation by U.S. vehicle manufacturers in North America currently is in the development stage. However, foreign manufacturers could begin marketing the bending function in the United States in the near future. Under Federal Motor Vehicle Safety Standard No. 108, Lamps, reflective devices and associated equipment, the bending light performance (by automatically reaiming the lamp) is not prohibited because the Standard does not specifically address the initial or subsequent aim of a headlamp in a headlighting system. The Standard addresses only aimability requirements. See the letter from the Chief Counsel, NHTSA, to Mr. Mark Cronmiller, VDO North America, dated July 7, 1999 (<http://www.nhtsa.dot.gov/cars/rules/interps/files/20061.ztv.html>). Mr. Cronmiller had asked about future “smart” headlighting systems that adjust headlamp aim vertically and/or horizontally according to driving conditions (e.g., vertically for oncoming traffic, horizontally around curves in the road). The Chief Counsel responded that paragraph S7.8 of Standard No. 108 prescribes headlamp aiming hardware requirements under static conditions only. Once a headlamp is installed on a vehicle, its aim is fixed, but may be adjustable by mechanical means when the vehicle is at rest. A limited ability to adjust vertical aim on some vehicles is also provided by vehicle leveling devices. Standard No. 108 does not require that headlamps be aimed at the time the vehicle is manufactured and certified as conforming to all applicable Federal motor vehicle safety standards. If there is a requirement for correct headlamp aim on new vehicles, it would be that of a State’s motor vehicle authority at the time the vehicle is first

registered for highway use in that State. The letter continued by saying that, if a “smart” headlamp system meets the static aiming hardware requirements of Standard No. 108, a dynamic aiming feature is permissible. We also said that at that time that we had no specific plans to regulate or require headlamps with dynamic aim features, but were monitoring them to form an impression as to their suitability for use under American driving conditions, and to learn if there are any problems of maintenance of aiming integrity, or durability, involved in their use. At a minimum, we would be concerned about the need for fail-safe performance to assure that aim would return to nominally correct, straight ahead in the event of a failure.

We note that S5.3.1.1 of Standard No. 108 also requires that lamps and reflective devices must be installed such that their photometric requirements are met on motor vehicles and that no other part of the vehicle shall prevent that. As such, the additional hardware added to achieve AFS must not prevent headlamps, or any other required lamps, from meeting the required performance in any manner whether AFS is operating or not. Additionally, for the bending light mechanization where some of the light in the nominal beam pattern is actively redirected, the photometric requirements of the headlamp must be met regardless of active changes in the light distribution within the beam.

The balance between roadway illumination and glare is something that has always concerned us. The public shares our concern, too, as evidenced by the unprecedented response to Docket 8885, NHTSA’s docket on glare from headlamps. Besides the more than four thousand comments to date, that docket has the highest number of Internet visits of all dockets in the DOT Docket Management System: more than 64,000 hits. The public’s concern is that glare is increasing at an alarming rate whether from approaching vehicles or rear view mirrors. Thus, the agency is concerned whether the implementation of AFS will produce a volume of complaints similar to those in Docket 8885 regarding the installations of high intensity discharge, high-mounted, and supplemental headlamps.

Given this concern, we have a number of questions for drivers, and the lighting and the motor vehicle industries, relative to the safety, implementation and use of AFS, especially as it may be offered to the U.S. market. These questions are:

Questions for Drivers

Question 1: Do you have problems seeing around curves because of the limitations of the headlamps on the vehicles that you drive, or because of glare from an approaching vehicle? Please describe the problems, including road, ambient lighting, and weather conditions.

Question 2: Is the glare that you described above worse than the glare from vehicles approaching on straight roads? Is it because the light is brighter or because it is longer lasting?

Question 3: Under what nighttime driving conditions have you thought you needed extra headlight illumination to help you see the road, signs, or objects: When turning at intersections, when driving on curved roads, at intersections, driving in rain, when driving in fog, when driving on interstate highways, driving in cities, etc.?

Question 4: Under what nighttime driving conditions have you thought that the oncoming headlights seemed more glaring than usual: On right-hand curves, on left-hand curves, on high-speed roads, at intersections in cities, on hilly roads?

Question 5: What types of objects are most difficult for you to see when driving at night: Pedestrians, lane markings, street signs, stop signs, overhead guide signs, debris on road, animals, etc.?

Question 6: For a “bending light” AFS that added more illumination to the right side on right-hand curves and to the left on left-hand curves, what aspects of lamp design concern you the most: That lamp failure might reduce visibility; that added light on left-hand curves would increase glare to oncoming drivers; that the motion of the lights would be annoying; that the added light would not be bright enough to significantly increase the visibility distance.

Question 7: If a headlighting rating were available for new vehicles in the same manner as crashworthiness and rollover star ratings, would you use these headlighting ratings in the decisions that lead to your purchase of a new vehicle? On a scale of 1 to 10 with 1 being of little value and 10 being extremely important, how might you rate the importance of the headlamp rating, if available, to your purchase decision for a new vehicle?

Questions for Industry

Question 8: Have manufacturers evaluated prototype AFS-equipped vehicles at night to determine whether changes in the intensity and direction of