

under an EPA contract becomes an unacceptable risk to the Government, the contractor shall immediately remove that employee from the site, notify the Contracting Officer that such a removal has taken place, and replace them with a qualified substitute. If the approval of the Contracting Officer was initially required for the removed employee, Contracting Officer approval is required for the replacement employee.

(g) *Contracting Officer Notification.*

Prior to commencement of on-site contract performance, the contractor shall notify the Contracting Officer that the background checks and suitability determinations required by this clause have been completed for affected individuals.

(h) *Flowdown Provision.*

The Contractor agrees to insert terms that conform substantially to the language of this clause in all subcontracts under this contract. (End of clause)

[FR Doc. 03-1361 Filed 1-21-03; 8:45 am]

BILLING CODE 6560-50-P

## DEPARTMENT OF TRANSPORTATION

### National Highway Traffic Safety Administration

#### 49 CFR Part 571

[Docket No. 2002-12347; Notice 01]

#### New Rearview Technology and Federal Motor Vehicle Safety Standard No. 111; Rearview Mirrors

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

**ACTION:** Request for comments.

**SUMMARY:** The agency has received two petitions asking us to amend the Federal Motor Vehicle Safety Standard for rearview mirrors. AM General Corporation (AM General) petitioned the agency to amend the standard to permit vehicles with a gross vehicle weight rating (GVWR) of more than 4,536 kilograms (kg) and with an overall length that is less than 508 centimeters (cm) to have the option of being equipped with a passenger-side convex mirror with an area of at least 323 square centimeters (cm<sup>2</sup>). Currently, these vehicles are required to have a flat passenger-side mirror with a reflective area of at least 323 cm<sup>2</sup>. The agency granted AM General's petition on May 23, 2001.

In addition, Ms. Barbara Sanford petitioned the agency to amend the rearview mirror standard to require that all commercial trucks traveling on interstate highways have convex mirrors affixed to their front right and left fenders to give drivers of these vehicles

a better view of the area around them while making a lane change. The agency granted Ms. Sanford's petition on May 21, 2001.

This document discusses the recommendations submitted by AM General and Ms. Sanford and asks questions that we hope will help us to determine whether they would be beneficial to safety and at what cost. In addition to addressing the aforementioned petitions, the agency also wishes to take this opportunity to examine the rearview mirror standard as a whole to determine whether there are any amendments that can be made to allow consumers to utilize innovations in mirror and other rearview technology that have been developed since the standard was last amended in 1982. It should be pointed out that the changes to the standard that are being explored are to eliminate impediments to new technology. Any amendments would permit, but not require, the use of new technology.

**DATES:** Comments must be received on or before March 24, 2003.

**ADDRESSES:** Comments must refer to the docket and notice numbers cited at the beginning of this notice and be submitted to: Docket Management, Room PL-401, 400 Seventh Street SW., Washington, DC 20590. It is requested, but not required, that two copies of the comments be provided. The Docket Section is open on weekdays from 10 a.m. to 5 p.m.

**FOR FURTHER INFORMATION CONTACT:** Mr. Chris Flanigan, Office of Rulemaking, NHTSA, 400 Seventh Street, SW., Washington, DC 20590. Mr. Flanigan's telephone number is (202) 366-4918 and his facsimile number is (202) 366-4329.

**SUPPLEMENTARY INFORMATION:**

**Background**

*Standard No. 111*

When standard No. 111 was promulgated in 1967, it applied only to passenger cars. The standard only permitted the use of mirrors of unit magnification (hereafter referred to as flat mirrors) at that time. On August 12, 1975, the agency published a final rule that extended the passenger car requirements to multipurpose passenger vehicles, trucks, and buses with a GVWR 4,536 kg or less (hereafter referred to as light trucks) [40 FR 33825]. The final rule established requirements for light trucks to have either outside flat mirrors that meet passenger car requirements or mirrors with an area of at least 126 cm<sup>2</sup>.

The August 12, 1975 notice also established requirements that

multipurpose passenger vehicles, trucks, and buses with a GVWR of between 4,536 kg and 11,340 kg have flat outside mirrors with a reflective surface of not less than 323 cm<sup>2</sup>. On December 30, 1976, the agency published a final rule that established requirements for multipurpose passenger vehicles, trucks, and buses with a GVWR of 11,340 kg or more. The requirements specified that these vehicles have outside mirrors with a reflective surface of not less than 323 cm<sup>2</sup>.

Until 1982, the agency allowed only flat mirrors on vehicles with a GVWR of 4,536 kg or less other than school buses (hereafter referred to as "light vehicles"). However, on September 2, 1982, the agency published a final rule amending Standard No. 111 to allow constant radius of curvature or spherical convex mirrors (hereafter referred to as "convex mirrors") to be used on light vehicles [47 FR 38698]. The surface of this type of mirror is curved to increase the field of view. This action was in response to a May 6, 1976, petition from General Motors Corporation (GM). GM petitioned the agency to amend the standard to allow convex mirrors on the passenger side of light vehicles where the interior mirror did not meet the field of view requirements. GM pointed out in its petition that convex mirrors would provide a wider field of view than the flat mirrors of the same size.

The amendment gave light vehicles that do not meet the field of view requirements for their interior mirror the option of having an outside mirror of unit magnification or a convex mirror installed on the passenger side. The agency, however, was concerned about the greater difficulties in correctly judging distance and speed that occur using convex mirrors as a result of the distortion of the objects being viewed. This concern has to be balanced by the fact that convex mirrors greatly increase the driver's field of view and, therefore, reduce the necessity for head movement to detect other vehicles.

Since convex mirrors have been permitted on the passenger side of light vehicles, many manufacturers have used them. Today, most light vehicles have a convex mirror on the passenger side. However, the agency still receives complaints from consumers about these mirrors. As described below, convex mirrors have characteristics that present problems for a portion of the driving public.

*Currently Permitted Mirrors*

The main difference between a flat mirror and convex mirror is that the image of an object viewed in a convex

mirror is both distorted and smaller than that of the same object viewed in a flat mirror. Therefore, such an object appears farther away and could be less recognizable when viewed in a convex mirror. Additionally, if the object were approaching or receding, its rate of change in position relative to other vehicles and its speed are more difficult to judge as well. For example, a driver who is not familiar with using a convex mirror on the passenger side may determine that it is safe to change lanes to the right, not realizing that a vehicle to the right rear is too close for the maneuver to be completed safely. This is why convex mirrors have been permitted only in conjunction with flat interior mirrors. The flat interior mirror provides the correct depth and speed perception, whereas the convex mirror achieves greater field of view, but cannot give precise depth and speed perception. Even if the interior mirror does not meet the field of view requirements in the standard, it is still available for speed and distance judgment of vehicles that are detected in the right convex mirror, if they are also visible in the interior mirror.

There have been other problems associated with the use of convex mirrors that include double vision, eyestrain, and nausea. Based on research, the agency determined that these problems could be minimized by placing certain restrictions on the mirror's design and by trading off correct speed and depth perception to achieve a greater field of view. If a vehicle has an interior mirror that does not meet the field of view requirements and the manufacturer opts to use a convex mirror on the passenger side, the convex mirror must meet the following three requirements: (1) When the radius of curvature is measured at ten different positions as specified in the standard, none of the radii of curvature readings may deviate from the average radius of curvature by more than plus or minus 12.5 percent; (2) the mirror must be indelibly marked at the lower edge of the mirror's reflective surface with the words "Objects In Mirror Are Closer Than They Appear"; and (3) the average radius of curvature cannot be less than 889 millimeters (mm) and not more than 1,651 mm.

The first requirement, that the convex mirror's radius of curvature may not deviate more than plus or minus 12.5 percent from the average radius of curvature, is to ensure that the mirrors have a reasonably constant radius of curvature. This minimizes changes in image distortion across the face of the mirror. This helps reduce many of the

reported instances of double vision, nausea, and dizziness.

The second requirement specifies that a visible warning be marked on the mirror's reflective surface. Because the mirrors cause distance and speed distortion, *i.e.*, the objects appear further away in the mirror, the agency felt that a warning should be placed in plain view to the vehicle operator. This is the rationale for the second requirement, that the mirrors be labeled with "Objects in Mirror Are Closer Than They Appear." If the driver is aware of this label, the driver will be aware that this mirror is not a flat mirror, and hopefully not make a mistake in judgment.

The third requirement, which specifies a minimum and maximum radii of curvature of the mirrors, is to ensure that the mirrors on different vehicles possess some level of uniformity. For example, if a person became accustomed to driving a vehicle with a passenger-side mirror radius of curvature of 2,500 mm, the same person might experience disorientation if he or she drove a vehicle with a passenger-side mirror radius of curvature of 500 mm. In Standard No. 111, the allowable range of radii of curvature of between 889 mm and 1,651 mm is based on a study performed by Vector Enterprises, Inc. (Vector) ["Passenger Vehicle, Light Truck, and Van Convex Mirror Optimization and Evaluation Studies," August 1980, DOT HS 805-695] in which a number of convex mirrors were evaluated. In this study, Vector found that a radius range of 1,016 mm to 1,524 mm provided the best results. The agency proposed this range in a 1978 notice of proposed rulemaking (NPRM) [43 FR 51657]. However, based on comments by manufacturers to the NPRM, the agency increased the range by 127 mm on each end.

#### *Recent Innovations in Rearview Technology*

##### Non-Planar Mirrors

Since the last significant changes were made to Standard No. 111 in 1982, there have been a number of innovations to rearview technology. The main innovation in mirror technology is the development of a hybrid mirror called an aspheric convex mirror (hereafter referred to as an "aspheric mirror"). Aspheric mirrors differ from the currently allowed convex mirrors in that they do not have a constant radius of curvature. Generally, these mirrors have a convex area with a large radius of curvature that provides a relatively undistorted view. Typically, this area constitutes approximately 60 to 80

percent of the mirror surface. In this portion of the mirror, the radius can be so large that it will appear to be flat (the radius of curvature of a flat mirror is infinity). The relatively flat portion of the mirror allows the driver to make more accurate speed and distance judgments about the adjacent vehicles than would be possible with a convex mirror. On mirrors currently being manufactured for the aftermarket and for use in other countries, the radius of curvature of this flatter area can range from 2,032 mm to 12,700 mm.

Extending from the large radius of curvature portion of the mirror outward, away from the vehicle, is another area in which the radius of curvature gradually decreases. This portion increases the field of view by smoothly transitioning from the large radius of curvature in the relatively flat portion to a much smaller radius. Because of the variation in radii of curvature, the outside portion of the mirror is distorted much like that of a convex mirror. This is how the larger field of view is attained. With this larger field of view, there could be a reduction or even an elimination of the blind spots that currently exist when flat mirrors are used. The most convex (outer) area of the aspheric mirror can provide a field of view that is as much as 30 percent larger than that of a similarly sized convex mirror with a uniform radius of curvature that satisfies the current standard.

Because these mirrors essentially provide two different types of views to the rear of the vehicle, some aspheric mirrors have an etched line delineating where the portion of the mirror that is the effectively flatter section ends and the more curved section begins. This is done to reduce confusion about which images are distorted and which are less so.

##### Video Systems

Due to the decrease in the cost of video monitoring equipment in recent years, manufacturers have begun to explore ways to incorporate this technology into motor vehicle rear vision systems. In these prototype systems, video cameras can be placed in almost any position on the interior or exterior of the vehicle. The cameras are wired to monitors in the forward of the vehicle so that they can be viewed by the driver. Because of the many possible mounting locations of the cameras, these systems can provide views to the driver that mirrors are not able to achieve.

There are companies that have already begun to implement this technology. In addition to the mirror

system already required by the standard, some have provided video systems for an auxiliary rear view. The United Parcel Service (UPS) has installed video systems in approximately 65,000 of its delivery trucks. These systems provide the driver with a view of the area directly behind the vehicle and are generally used for backing purposes. The view is similar to that which is provided by an interior mirror in a passenger vehicle, but can afford a much larger field of view close to the vehicle.

One of the benefits of eliminating exterior mirrors on vehicles would be in the area of fuel economy. Removing these mirrors would decrease the wind resistance on a vehicle and thus decrease the amount of fuel consumed. These benefits have been estimated to be as much as two percent fuel savings for large trucks.

Another benefit of a video system is the ability to filter out or reduce visual obstructions or degradations caused by snow, rain, lack of light, or glare from following vehicles' headlamps. By adjusting a monitor's contrast, brightness, or sharpness, the image provided to the driver can be controlled. It is likely that these systems will be controlled by a computer that can detect these visual hindrances and automatically correct for them.

*AM General's Petition*

In its September 2000 petition, AM General recommended that the agency amend Standard No. 111 to allow manufacturers the option of placing a convex passenger-side rearview mirror on light trucks with a GVWR of more than 4,536 kg, but with a length of less than 508 cm. Currently, these vehicles must have a flat passenger-side mirror with a reflective area of not less than 323 cm<sup>2</sup>. As stated above, light trucks with a GVWR 4,536 kg or less may be equipped with either a convex mirror or a flat mirror that meets passenger car requirements or a flat mirror with a reflective area of not less than 126 cm<sup>2</sup>. AM General proposed three conditions that these vehicles would have to meet to be equipped with a convex mirror: (1) The mirror should be at least 323 cm<sup>2</sup>

in area; (2) it should comply with the convex mirror requirements in Paragraph S5.4 of the standard; and (3) the overall length of the vehicle should be less than 508 cm.

By petitioning the agency, AM General is attempting to solve a problem it has had with a specific vehicle it produces, the Hummer. The Hummer is a four-wheel-drive vehicle that, depending on the configuration, can have a GVWR of between 4,672 kg and 5,488 kg. Because the Hummer has a GVWR that is greater than 4,536 kg, it is required to have a flat passenger-side mirror with a reflective area of not less than 323 cm<sup>2</sup>. AM General states that a large majority of Hummer owners are installing small, round convex mirrors on their flat passenger-side mirrors to provide a better rearward field of view, particularly for lane changes. It has received numerous requests from these owners to install a full-sized convex mirror like those offered on similarly sized light trucks. The only explanation AM General has been able to provide to them is that Standard No. 111 does not allow such mirrors on these vehicles. Since the Hummer is essentially the same size as some other full size light trucks, AM General does not think it reasonable that it would be precluded from utilizing the same type of rearview mirrors as them. AM General believes that, although the vehicle owner's application of the small convex mirrors to the flat mirrors may provide some additional benefit, it is not the ultimate solution. A full size convex mirror would provide a larger field of view. In addition, the full size convex mirror would have less distortion, as small add-on convex mirrors, or spot mirrors, tend to have small radii of curvature.

On July 26, 2000, AM General met with the agency to outline its concerns and to give agency staff the opportunity to drive the Hummer with two mirror configurations: a standard 323 cm<sup>2</sup> flat mirror and a 323 cm<sup>2</sup> convex mirror. Three agency engineers examined the two mirror systems on the Hummer and two drove it with these systems. One engineer sat in the Hummer and assessed the fields of view of both mirrors without driving it. All three

agreed that, when attempting a lane change to the right, the passenger-side convex mirror provided a better view of the rearward area when compared to the flat one. Because the interior rearview mirror did not provide an adequate rearward view, the driver would have to rely heavily on the outside mirrors. This increased the importance of having a wider field of view in the outside mirrors, even if it could cause greater distortion.

AM General supports its petition by pointing out that in 1975, when Standard No. 111 was amended to require flat passenger-side mirrors on vehicles of over 4,536 kg GVWR, there were no vehicles in use that were comparable to the Hummer. In the rulemaking, the agency's rationale for requiring flat passenger-side mirrors was that a driver of a large vehicle needs an undistorted view when moving in reverse. Also, these larger vehicles did not typically have an interior flat mirror to aid in judging distance. In the final rule, the agency linked vehicle size to weight, stating that vehicles over 4,536 kg GVWR needed special mirror systems "suited to their large size." Also, in the notice of proposed rulemaking (NPRM) that preceded the 1975 final rule [39 FR 15143], the agency stated that "if the vehicle resembles a passenger car with regard to its rearward visibility potential, the manufacturer will be free to equip it with a passenger car-type mirror system."

AM General also cites the rationale that the agency used in the preamble to the 1982 final rule allowing convex mirrors on light vehicles, which indicated that the main safety benefit of these mirrors is that they provide "an expanded field of view of the right, rear quadrant area adjacent to the vehicle, thus reducing the need of the driver to turn around to view that area directly."

AM General points out that, while the Hummer's overall size is comparable to other full size sport utility vehicles (SUVs) and pickups, its GVWR is considerably greater. To support this, AM General submitted specifications of other light trucks for comparison. These are outlined in the table below.

COMPARATIVE SPECIFICATIONS FOR FULL SIZE SUVs AND PICKUPS (1999 MY)

Make and model	GVWR (kg)	Length (cm)	Height (cm)	Width (cm)
AM General Hummer	4,672-5,488	469	191	220
Full Size SUVs:				
Ford Excursion	3,901	576	202	203
Chevrolet Tahoe	3,084	507	179	195
Chevrolet Suburban	3,901	558	181	194
Jeep Grand Cherokee	2,812	461	176	184
Nissan Pathfinder	2,336	453	170	174

## COMPARATIVE SPECIFICATIONS FOR FULL SIZE SUVs AND PICKUPS (1999 MY)—Continued

Make and model	GVWR (kg)	Length (cm)	Height (cm)	Width (cm)
Toyota Landcruiser .....	3,111	489	186	194
Mitsubishi Montero .....	2,268	453	168	178
Land Rover Range Rover .....	2,250	471	182	189
Average .....	2,958	496	181	189
Full Size Pickups:				
Ford F-250 4-door .....	3,992	577	194	203
Dodge Ram 2500 Club Cab .....	3,992	620	185	201
Chevy 3500 Crew Cab .....	4,536	637	188	239
Toyota Tacoma Xtracab .....	2,040	516	158	169
Average .....	3,640	588	181	203

The average GVWR of SUVs was 2,958 kg, with the Ford Excursion and Chevrolet Suburban being the highest. Both had a GVWR of 3,901 kg. The average GVWR of pickups was 3,640 kg, with the Chevrolet 3500 Crew Cab (with dual rear wheels) being the highest at 4,536 kg. The Hummer's greater GVWR is said to be attributable to heavy-duty features such as its drive train and its reinforced frame. While the GVWR of the Hummer is significantly greater than many full size SUVs and pickups, it is comparable in size.

AM General stated that it is not aware of any studies or data available in either this country or any other countries that suggest that its recommended amendment would adversely impact motor vehicle safety. It also states that several countries already have similar requirements. ECE Regulation No. 46, June 1997, permits a wide-angle exterior rearview mirror on vehicles with a GVWR that is less than 7,500 kg. Canadian Standard No. 111 allows vehicles with a GVWR of greater than 4,536 kg to have a passenger-side convex mirror as long as it is at least 323 cm<sup>2</sup> in area. Australian Design Rule 14/02 allows vehicles to have a passenger-side convex mirror if the reflective surface area is equal or greater than that of a flat mirror that meets its field of view requirements.

#### Mirror Research

On March 13, 1996, the agency convened a public meeting in Romulus, Michigan, to seek information from interested parties on the safety of mirror systems and suggestions for actions to enhance safety. A **Federal Register** notice announcing this meeting [61 FR 4624] also invited written comments. Of the 12 commenters, all stated that there should be a change in the requirements of Standard No. 111, or at least research should be conducted to determine if a change is needed. Attendees at the workshop also identified future human

factors research needed for determining rearview mirror performance and design requirements that would insure that drivers could use rearview mirrors safely and effectively. These suggestions are outlined in a technical report titled "Workshop on Rearview Mirror Human Factors Research Needs: Summary of Recommendations," [DOT HS 808 486]. The main thrust of the comments was that the agency should consider amending the standard to allow non-planar mirrors on the driver side of the vehicle. These mirrors are currently used on the driver side of some vehicles in Europe, Japan, and South Africa.

Consistent with these suggestions from the industry, the agency initiated research on non-planar driver side mirrors. The agency contracted with the TNO Human Factors Research Institute (TNO) in the Netherlands to conduct this research. The resulting paper, titled "Non-planar Driver's Side Rearview Mirrors: A Survey of Mirror Types and European Driver Experience and a Driver Behavior Study on the Influence of Experience and Driver Age on Gap Acceptance and Vehicle Detection," [DOT HS 809 149] examined European drivers' use of non-planar driver side mirrors. The study was conducted on European drivers because only flat driver side mirrors are permitted in the U.S. The sample of vehicles in the study consisted of 43 percent with planar driver side mirrors, 34 percent with convex mirrors, and 23 percent with aspherical mirrors. The passenger-side mirrors were predominantly convex (92 percent). The study found that drivers' experience with aspheric mirrors on the driver's side did not generally compensate for the negative effect of accepting smaller gaps, with the exception of drivers who were accustomed to convex mirrors on the driver's side. In addition, there was no increase in the visual workload required to process information in non-planar mirrors. The conclusion was that the

relative benefits of using aspheric mirrors on the driver's side could outweigh the possible negative effects.

The agency contracted with the Scientex Corporation (Scientex) to assess different driver side mirror designs and compare them to the standard flat mirror. The report, titled "Simulator-based Assessment of Driver side Mirrors for Passenger Cars," [DOT HS 808 807] examined four non-planar mirrors: (1) Spherically convex, (2) a side-by-side design where 40 percent of the inboard area was spherically convex and the remaining outboard area was aspherically convex, (3) an over-under design that was flat on top and spherically convex below; and, (4) a side-by-side design where 75 percent of the inboard area was spherically convex and the remained outboard area was aspherical. The primary study variables were the size of the field of view, image distortion, and driver age. The test subjects were placed in a laboratory driving simulator and asked to use each mirror type from the perspective of a stationary observer waiting to merge. The subjects were also to use the mirrors as moving observers in a dynamic simulation of a lane change scenario on a freeway. The study found significant effects of mirror type and driver age on lane change decisions and decision times. For slower moving targets, the test data revealed a sharp increase in the size of the gap older drivers found acceptable for making a safe lane change when using a flat mirror, relative to the non-planar mirrors. For the faster moving targets, there was only a small increase in the size of the gap older drivers found acceptable for a safe lane change when using a flat mirror, relative to the non-planar mirrors. Also, the older drivers generally relied on the mirrors more rather than glancing over their shoulders. Scientex believed that this was due to lack of head and neck mobility. Moreover, it showed that there

are benefits to alternative mirrors with expanded fields of view in situations involving immediately adjacent traffic that was nearby (less than one car length behind the driver) when the driver does turn to view the area. Scientex did, however, find some unanswered questions on the effects of speed and distance judgment. Also, it found a need to better understand of the ability of drivers to adjust to non-planar mirrors, and realize their potential benefits.

#### *Discussion of AM General Petition and General Mirror Issues*

While the agency agrees that it seems reasonable to allow the Hummer to be equipped with a convex mirror, we believe that it would be shortsighted only to amend Standard No. 111 in the manner requested by AM General. Amending the standard to allow the one known current vehicle model to utilize one widely-available type of technology would have little effect on the overall safety of motor vehicles five years from now. Rather than only allowing the Hummer to have passenger-side convex mirrors, the agency would like to take this opportunity to also explore amending the standard to allow appropriate new mirror and other rearview technology to be utilized by all vehicles. By amending the standard in this manner, not only will AM General be able to equip its Hummers with what it believes are safer mirrors, but new mirror technology will be able to be incorporated on all passenger vehicles.

Research conducted by the agency and other entities, which is outlined above, has led the agency to believe that allowing non-planar mirrors on the driver and passenger side would provide an increased field of view and, thus, eliminate blind spots. Other countries, mostly in Europe, have successfully utilized new technology such as aspheric mirrors to enhance rearward vision.

However, while allowing the use of new mirror technology may be helpful, we are concerned that some drivers may experience difficulties. As the aforementioned TNO and Scientex studies found, there are issues with non-planar mirrors that need to be addressed. Both studies found that some drivers had difficulty making safe lane change decisions using non-planar mirrors. Scientex has recommended that this area be further studied to determine why these problems occur.

One way to account for the drivers who experience problems with the new technology is to include some level of interchangeability. For example, if a driver purchases a vehicle with an aspheric mirror and then determines

that it is unacceptable, a flat or convex mirror would be available to put in its place. If the driver could not easily replace the problematic mirror, there might be a tendency for him or her to simply live with the problem and perhaps not utilize the mirror. Drivers forced to use mirror systems with which they are not comfortable would obviously not benefit from the improved technology; on the contrary, there would be a disbenefit. Not using a mirror could increase the risk of a crash.

An issue that needs to be resolved is how large the radius of curvature of a mirror must be to be perceived as flat. The agency believes that drivers using convex mirrors with a radius of curvature in the 6,350 mm to 12,700 mm range would experience little to no difference when compared to using one that is flat. Future research in this area could lead to an equivalent flatness specification that would set the minimum radius of curvature at which a mirror provides the same safety benefits as a mirror with an infinite radius of curvature.

As the standard is presently written, an aspheric mirror with a flat area of infinite radius that produced the minimum field of view would be allowed. The outer convex area could be considered a supplemental mirror. However, due to technological limitations, this is not currently possible. As stated above, we understand that the largest attainable radius of curvature for an aspheric mirror is about 12,700 mm. If an equivalent flatness specification was determined, perhaps the advantages of aspheric mirrors could be fully utilized while maintaining a large portion of the mirror for speed and distance judgment.

Regarding the cost of such an amendment, allowing an option to replace a flat mirror with a convex mirror should pose no incremental burden since no regulatory requirement mandating a convex mirror is contemplated.

Another issue the agency has been exploring is that of glare produced in a vehicle's mirrors from a following vehicle's headlamps. In the past few years, consumers have registered many complaints with the agency about high-mounted headlamps on some larger light trucks. The headlamps on these vehicles are mounted high enough to place the more intense part of their low beam on a vehicle's mirrors. These high-mounted headlamps are viewed by many drivers as dangerous and intimidating, in addition to being annoying and disabling.

One approach to this problem is to require enhanced mirrors on vehicles.

Automatic electro-mechanical dimming interior mirrors have been available for decades as standard equipment on luxury models and as an option in many vehicles. More recently, the industry has developed electronically dimming mirrors, typically called photochromic and liquid crystal automatic dimming mirrors. The advantage of these mirrors is that they reduce the intensities of incoming light at least as well as manual or electro-mechanical auto-dimming interior mirrors, but they also reduce glare reflected from the outside mirrors as well. The primary disadvantages are that these mirrors can add \$100 or more to the cost of a new vehicle and they can lessen only the glare from following vehicles. There are questions below which attempt to determine whether there should be requirements for such systems.

Below are a number of questions that deal specifically with AM General's petition as well as with the overall philosophy of amending Standard No. 111 to allow new technology to be utilized. To be considered, you must provide a rationale for your answer.

1. Is it reasonable for the agency to permit vehicles like the Hummer to use passenger-side convex mirrors? What are the safety factors that lead to this conclusion?

2. For use of a passenger-side convex mirror on a vehicle that is heavier than 4,536 kg GVWR like the Hummer, should there be a limit of 508 cm on the length of a vehicle as AM General suggested? Is some other maximum vehicle length more appropriate? Should there be requirements based on vehicle height and/or width? What safety factors are involved in these issues?

3. Should Standard No. 111 be amended to permit aspheric mirrors on the passenger side and/or aspheric and convex mirrors on the driver side? What safety rationale is there for such conclusions? At what vehicle dimensions, if any, (length, width, height, and weight) should these mirrors be restricted?

4. If aspheric mirrors were permitted, should a definition of effective flatness be developed? As discussed above, the flatter area of an aspheric mirror that provides the speed and distance judgment is not perfectly flat, but the radius of curvature is usually large enough such that a driver would perceive the area as being flat.

5. At what radius of curvature does the human eye begin to perceive a mirror as flat? At what radius of curvature do depth and closure rate distortion begin to be a safety factor?

6. Should the effectively flat portion of the aspheric mirror be some minimum size, as is required of flat mirrors?

7. Should the agency require an etched line on aspheric mirrors to delineate where the intersection of the flat portion of the mirror and the markedly curved portion begins? Why?

8. Should the radius of curvature in the more convex portion of aspheric mirrors be limited? What is a reasonable range of allowable radii of curvature?

Should the size of this section be limited? What is a reasonable minimum/maximum size for this portion of the mirror? To what extent would allowing multiple types of mirrors compromise safety? How could these effects be minimized? Please provide the basis for these answers.

9. Should the proportion of the size of the effectively flat area to the curved area be specified on aspheric mirrors? Should there be separate field of view requirements for each of the areas? Why?

10. We are aware of the use of aspheric mirrors on vehicles used in Europe and are interested in examining the criteria used for determining their specific characteristics. How much do these mirrors vary within the same or different body sizes and styles? Is there any data on the safety benefits and/or detriments of these mirrors as used in Europe? Please be specific.

11. Should all vehicles with mirror systems using aspheric mirrors on the passenger side and aspheric or convex on the driver side have as a replacement, a flat or convex reflective element that is readily available for consumers to purchase? Should consumers be required to pay for such a replacement, or should they be available at no charge? How would the answers to these questions affect the decision by manufacturers to offer optional mirror systems?

12. Convex and aspheric mirrors can achieve a larger field of view than a like-sized flat mirror. Therefore, with a system that provides interchangeability, the convex and aspheric mirrors will most likely need to be made larger than would be required to accommodate the possibility of replacing with a flat mirror. How would this affect the implementation of optional mirror systems? What would be the cost of supplying interchangeability?

13. Should aspheric or convex mirrors be made mandatory on the driver or passenger side? Please provide justification.

14. Does the agency need to require interior and/or exterior dimming mirrors? Why?

15. If dimming mirrors are required, should they be automatic or actuated by the driver?

16. What price is the public willing to pay for fully automatic inside and outside dimming mirrors on passenger cars? What are they willing to pay for these mirrors on light trucks?

17. What are the benefits and disbenefits of mirror configurations that include more than one mirror surface?

An agency field evaluation of commercial van mirrors [Field Evaluation of Rearview Mirror Systems for Commercial Vehicles," September 1985, DOT HS 806-948] found that vehicles equipped with a 40-inch radius of curvature convex mirror had an 18 percent reduction in crashes compared to a dual flat and convex mirror configuration.

18. Are there any other issues that should be addressed in the review of the standard? Please be specific and provide supporting data.

#### *Discussion of Video System Issues*

While video systems can be coupled with existing mirrors to create an enhanced view to the driver, it is possible that these systems could completely replace current mirror systems in vehicles. This could present some unique problems. First, unlike mirror systems, video systems consist of electronic equipment that rely on electrical current for activation. If the system fails due to a fault with the electronic components or a lack of power, the driver could be without a rear field of view. The agency is concerned that, if there is not a fail-safe mode for these systems, an unsafe situation could occur. The agency has already prohibited liquid crystal dimmable mirrors because of the insurmountable fail-safe issues.

Replacing mirrors on the outside of the vehicle with video screens on the inside of the vehicle would be a significant change in the manner by which drivers currently obtain the information. Drivers have become used to conventional mirrors, and some could have problems relying on a video screen for the same information. These possible difficulties could be exacerbated by the placement of the monitors. For example, if the monitors were placed outboard as close to the area where the outside rearview mirrors would be, drivers might not experience many problems with the transition. By placing them near the area where conventional mirrors are placed, the geometrical perspective to the object being viewed that is given by the mirrors would be preserved. However, if the monitors were more centrally located on the

instrument panel, the lack of geometric perspective could leave drivers confused as to the relationship of what they are seeing in the monitor to the area around their vehicle. The agency believes that manufacturers are currently attempting to determine how to insure that video systems are easy to use and acceptable to drivers.

As with the optional mirror systems discussed above, allowing the use of video systems would provide an option to manufacturers, and, thus, there would be no cost burden imposed by such a permissive rule change.

Below are questions related to the use of video systems for rear vision. To be considered, you must provide a rationale for your answers.

1. Under what condition, if any, would any failure of a video system be considered acceptable? Why?

2. Given the prohibition of liquid crystal mirrors because of the potential for electrical failure, is there any reason to consider video systems? If so, explain why these would be at least as reliable as a conventional glass mirror.

3. Are there any safety studies available on video systems that would show that their overall safety would be great enough to offset any loss of safety from a failure?

4. What are the long-term safety consequences of failure to replace a failed video system component because of the high cost and/or lack of availability? What additional requirements should be imposed on these optional systems to assure that replacement of failed components is as likely as replacement of today's mirrors?

5. If a video system failure were deemed to be an acceptable risk, should the agency require these systems to provide a failure alert to warn the driver of a system problem? If so, what performance requirements should be established for the system failure alert? If not, please explain why.

6. Should there be a backup system in case of failure? If so, please provide a description of a possible system and why it would achieve an acceptable safety risk. If not, please explain why.

7. Should the location for the video monitors be specified? It is the agency's initial inclination that they should be placed as close as possible to where currently used mirrors are located. What studies have been done to show that any other location is acceptable?

8. If the monitors were placed in an area away from where typical mirrors are mounted, how well would drivers adapt to the new location?

9. Should the agency conduct human factors analysis to examine the interface

between the video screen and drivers? If so, what factors should be studied?

10. For example, what minimum image size should be specified for systems using a video monitor? Should that size be different for different monitor locations?

11. Should the monitor on these systems be color or black and white? Why?

12. What type of control over the image characteristics should the driver have with these monitors? Should they be able to control contrast, brightness, sharpness, image size, magnification, or some other characteristic?

13. What would be the cost of installing a video system in a passenger vehicle to be used specifically for backing operations, similar to the system used in recent Infiniti Q45 models?

14. The agency has been examining methods for reducing reversing crashes. Video systems are one of the methods some users and manufacturers, such as UPS and Infiniti, have used to accomplish this. Should manufacturers choose to use a video system for the side view area, what would be the cost of adding a system to be used specifically for backing?

#### *Discussion of Ms. Sanford's Petition*

In her September 1999 petition, Ms. Sanford asked us to amend Standard No. 111 to require that all "commercial trucks traveling on the interstate highway system" have convex mirrors mounted on their front right and left fenders. She claims that when convex mirrors are mounted on the front fenders, they eliminate a blind spot that is caused by the driver's elevated position with respect to most passenger cars. They are also helpful for lane changes. Ms. Sanford was involved in a crash with a heavy truck and she believes the incident could have been avoided had the truck been equipped with these fender-mounted convex mirrors.

The heavy trucking industry is currently using these types of mirrors extensively. Rulemaking staff conducted two informal counts of the number of trucks that use these mirrors. The two counts were done on Interstate 95 between Washington, DC to Philadelphia, PA. It was found that approximately two-thirds of the large trucks (excluding cab over designs) were equipped with the mirrors on just the right front fender. Approximately 50 percent had them on both front fenders. Although these counts cannot provide information about the value of these mirrors, it does show that a large

portion of the trucking industry sees value in them.

Prior to the Sanford petition, the agency had decided to conduct research on heavy truck mirror systems, including fender-mounted mirrors. The objective of the study is to assess side and rearward visibility of heavy trucks, document current mirror design and aiming, develop a method to evaluate mirror fields of view, and recommend enhanced mirror design and aiming. The study should be completed by the Fall of 2003.

Below are questions related to Ms. Sanford's petition:

1. What percentage of new trucks is sold with these types of mirrors on their front fenders? What is the volume of these types of mirrors that are sold in the aftermarket?

2. What percentage of trucks have the mirrors mounted on just the right or left fender? What percentage has them on both fenders?

3. Do data exist to show the effectiveness of these mirrors in reducing lane change crashes?

4. Because a portion of the national truck fleet already uses these types of mirrors, what would be the cost burden to the industry if one or two mirrors were required?

5. If determined to be necessary for safety, the agency would need to determine whether to require these as just OEM or also as a requirement for vehicles in use. What would be the cost and lead-time necessary for these?

6. What performance specifications, e.g., field of view, vehicle dimensions, mirror dimensions, mounting, labeling, should be established for these mirrors, if any?

7. What truck configuration(s) would be best suited for this type of mirror system?

#### **References**

- de Vos, Alexander. September 2000. Non-planar Driver's Side Rearview Mirrors: A Survey of Mirror Types and European Driver Experience and a Driver Behavior Study on the Influence of Experience and Driver Age on Gap Acceptance and Vehicle Detection. Report No. DOT HS 809 149.
- Flannagan, Michael, J.; Sivak, Michael. August 1996. Workshop on Rearview Mirror Human Factors Research Needs: Summary of Recommendations. Report No. DOT HS 808 486.
- Staplin, Loren; Lococo, Kathy, Sim, James J., Gish, Kenneth. October 1998. Simulator-based Assessment of Driver side Mirrors for Passenger Cars. Report No. DOT HS 808 807.

#### **Rulemaking Analyses and Notices**

##### *Executive Order 12866 and DOT Regulatory Policies and Procedures*

This request for comment was not reviewed under Executive Order 12866 (Regulatory Planning and Review). The agency has analyzed the impact of this request for comment and determined that it is not "significant" within the meaning of the Department of Transportation's regulatory policies and procedures. The agency anticipates if a proposal and ultimately a final rule should result from this request for comment, new requirements would not be imposed on manufacturers with respect to currently regulated systems. The request for comment seeks to determine the ramifications of allowing new optional rearview technology on motor vehicles.

#### **How Do I Prepare and Submit Comments?**

Your comments must be written and in English. To ensure that your comments are correctly filed in the Docket, please include the docket number of this document in your comments.

Your comments must not be more than 15 pages long (49 CFR 553.21). We established this limit to encourage you to write your primary comments in a concise fashion. However, you may attach necessary additional documents to your comments. There is no limit on the length of the attachments.

Please submit two copies of your comments, including the attachments, to Docket Management at the beginning of this document, under **ADDRESSES**.

#### **How Can I Be Sure That My Comments Were Received?**

If you wish Docket Management to notify you upon its receipt of your comments, enclose a self-addressed, stamped postcard in the envelope containing your comments. Upon receiving your comments, Docket Management will return the postcard by mail.

#### **How Do I Submit Confidential Business Information?**

If you wish to submit any information that you do not want to be made public, under a claim of confidentiality, you should submit three copies of your complete submission to the Chief Counsel, NHTSA, at the address given at the beginning of this document under **FOR FURTHER INFORMATION CONTACT**. This submission must include the information that you are claiming to be private, that is, confidential business information. In addition, you should

submit two copies from which you have deleted the private information, to Docket Management at the address given at the beginning of this document under **ADDRESSES**. When you send a comment containing information claimed to be confidential business information, you should include a cover letter that provides the information specified in our confidential business information regulation, 49 CFR Part 512.

### Will the Agency Consider Late Comments?

We will consider all comments that Docket Management receives before the close of business on the comment closing date indicated at the beginning of this notice under **DATES**. To the extent possible, we will also consider comments that Docket Management receives after that date. If Docket Management receives a comment too late for us to consider in developing a final rule (assuming that one is issued), we will consider that comment as an informal suggestion for future rulemaking action.

### How Can I Read the Comments Submitted By Other People?

You may read the comments received by Docket Management at the address and times given near the beginning of this document under **ADDRESSES**.

You may also see the comments on the Internet. To read the comments on the Internet, take the following steps:

(1) Go to the Docket Management System (DMS) Web page of the Department of Transportation (<http://dms.dot.gov/>).

(2) On that page, click on "search."

(3) On the next page (<http://dms.dot.gov/search/>), type in the four-digit docket number shown at the heading of this document. Example: if the docket number were "NHTSA-2000-1234," you would type "1234."

(4) After typing the docket number, click on "search."

(5) The next page contains docket summary information for the docket you selected. Click on the comments you wish to see.

You may download the comments. Although the comments are imaged documents, instead of the word processing documents, the "pdf" versions of the documents are word searchable. Please note that even after the comment closing date, we will continue to file relevant information in the Docket as it becomes available. Further, some people may submit late comments. Accordingly, we recommend that you periodically search the Docket for new material.

**Authority:** 49 U.S.C. 322, 30111, 30115, 30117, and 30166; delegation of authority at 49 CFR 1.50.

Issued on: January 16, 2003.

**Stephen R. Kratzke,**

*Associate Administrator for Rulemaking.*

[FR Doc. 03-1353 Filed 1-21-03; 8:45 am]

**BILLING CODE 4910-59-P**

## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Part 17

#### Endangered and Threatened Wildlife and Plants; 90-day Finding for a Petition To List the Mountain Quail as Threatened or Endangered

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Notice of 90-day petition finding.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), announce a 90-day finding on a petition to list the mountain quail (*Oreortyx pictus*) under the Endangered Species Act (Act) of 1973, as amended. We find the petition does not present substantial scientific or commercial information indicating that listing this species may be warranted.

**DATES:** The finding announced in this document was made on January 10, 2003.

**ADDRESSES:** The complete file for this finding is available for inspection, by appointment, during normal business hours at the U. S. Fish and Wildlife Service, Snake River Fish and Wildlife Office, 1387 South Vinnell Way, Suite 368, Boise, ID 83709.

**FOR FURTHER INFORMATION CONTACT:** Bob Ruesink, Supervisor, Snake River Fish and Wildlife Office (*see ADDRESSES* section) (telephone: 208/378-5243; facsimile: 208/378-5243; electronic mail: [Bob\\_Ruesink@fws.gov](mailto:Bob_Ruesink@fws.gov)).

#### SUPPLEMENTARY INFORMATION:

##### Background

Section 4(b)(3)(A) of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*), requires that we make a finding on whether a petition to list, delist, or reclassify a species presents substantial scientific or commercial information to demonstrate that the petitioned action may be warranted. This finding is to be based on all information available to us at the time we make the finding. To the maximum extent practicable, this finding is to be made within 90 days of our receipt of the petition, and the

notice of the finding is to be published promptly in the **Federal Register**. Our standard for substantial information within the Code of Federal Regulations (CFR) with regard to a 90-day petition finding is "that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted" (50 CFR 424J). If we find that substantial information was presented, we are required to promptly commence a review of the status of the involved species, if one has not already been initiated under our internal candidate assessment process.

On March 28, 2000, we received a petition, dated March 15, 2000, from Rob Kavanaugh, Idaho Watersheds Project, Committee for Idaho's High Desert, and the Spokane Audubon Society requesting that the mountain quail (*Oreortyx pictus*), occurring in the northern and western Great Basin, the Interior Columbia Basin, and lands west to the Cascade Crest within Washington and Oregon, be listed as a threatened or endangered distinct population segment (DPS) under the Act (Kavanaugh *et al.* 2000). The petition clearly identified itself as such and contained the names and addresses of the petitioners.

Accompanying the petition was information related to the taxonomy, life history, demographics, translocations, genetics, habitats, threats, and the past and present distribution of mountain quail. The petitioners contend that mountain quail populations occurring in the proposed DPS have sustained a dramatic range contraction caused by extensive loss of riparian habitats, loss of woody vegetation associated with riparian habitats, loss of interfacing upland shrub habitats, loss of plant species diversity, and simplification of habitats. The petitioners claim that 80 to 90 percent of riparian habitats essential to the mountain quail in arid interior lands have been lost, fragmented, or altered. This is in contrast to the more humid coastal forests of Oregon, Washington, and California, where mountain quail populations are more abundant and widespread due to broad areas of continuous habitat. In order to determine if substantial information is available to indicate that the petitioned action may be warranted, we have reviewed the following: the subject petition, literature cited in the petition, information provided by recognized experts or agencies cited in the petition, and information otherwise available in Service files.

This 90-day petition finding is made in accordance with a settlement agreement that requires us to complete a finding by January 15, 2003