

consequential to motor vehicle safety even in conditions where there are external light sources.

Accordingly, for the reasons stated above, GM has not met its burden of persuasion that the noncompliance herein described is inconsequential to safety and its application is denied.

(49 U.S.C. 30118, 30120; delegation of authority at 49 CFR 1.50 and 501.8)

Issued on: November 21, 1997.

L. Robert Shelton,

Associate Administrator for Safety Performance Standards.

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DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA-97-3149]

Nissan Motor Corporation, U.S.A.; Denial of Application for Decision of Inconsequential Noncompliance

Nissan Motor Manufacturing Corporation USA, (Nissan) determined that certain Nissan Sentra 4-door sedans fail to comply with the requirements of 49 CFR 571.108, Federal Motor Vehicle Safety Standard No. 108, "Lamps, Reflective Devices and Associated Equipment," and filed an appropriate report pursuant to 49 CFR Part 573 "Defect and Noncompliance Information Report." Nissan also applied to be exempted from the notification and remedy requirements of 49 U.S.C. 30118(d) and 30120(h) on the basis that the noncompliance is inconsequential to motor vehicle safety.

Notice of receipt of an application was published on December 18, 1996, and an opportunity afforded for comment (61 FR 66744). This notice denies the application.

Paragraph S5.1.1 of Standard No. 108 requires that each motor vehicle shall be equipped with certain lamps and reflective devices designed to conform to applicable SAE Standards or Recommended Practices referenced in the Standard. The stop lamp function of a rear combination lamp assembly must meet the photometric performance requirements of SAE J586 FEB84. To determine photometric performance, measurements of light intensity are taken at 19 test points in a geometric grid. The grid is further broken down into five separate zones. The measured test point values that are located within a zone are added together to provide a zone total which must meet a minimum value.

Based on its tests, Nissan believes that the taillamp function of the combination lamps in certain Nissan Sentra 4-door sedans meet or exceed all test criteria and is in compliance with Standard No. 108. Further, the stop lamp function of certain rear combination lamp assemblies in those vehicles meet the requirements in Zones 1, 2, 4, and 5.

However, in certain lamps, the minimum requirements in Zone 3 for the stop lamp function were not met. The photometric results for the tested lamps of the Sentra 4-door sedan stop lamp function in Zone 3 are discussed in the decision portion of this notice, and are set forth in Nissan's application, which has been filed in the National Highway Traffic Safety Administration Docket Section.

According to Nissan, from December 11, 1995, through September 1996, the company manufactured approximately 65,000 1996 and 1997 model year Nissan Sentra 4-door sedans with combination tail/stop lamp assemblies that it determined did not comply with the stop lamp photometric requirements of SAE J586 FEB84 as incorporated by reference in Standard No. 108. J586 FEB84 defines 19 test points for stop lamps that must emit a specified range of light intensity. These test points are grouped into five zones and their intensities are summed to arrive at a total within each zone. Each zone's total has a required value, measured in candela, that must be met, with none of the test points falling below 60 per cent of its specified value.

Nissan stated that it discovered that the total candela of the five test points measured across Zone 3 in some lamps that it tested did not meet the required minimum of 380 candela for Zone 3. All other zone totals were within Standard No. 108's specifications for the stop lamp function, and all the Standard's criteria were met for the taillamp function.

Nissan supported its application for inconsequential noncompliance with the following:

Nissan [we] believe the failure of the stop lamp portion of the rear combination lamp assembly to meet photometric requirements in one of five zones is inconsequential to motor vehicle safety for the following reasons:

A NHTSA sponsored study titled "Driver Perception of Just Noticeable Difference[s] in [of Automotive] Signal Lamp Intensities" [DOT HS 808 209, September 1994] demonstrated a change in luminous intensity of 25 percent or less is not noticeable by most drivers. Since all of the stop lamps Nissan tested, except one, were closer to the standard than 25 percent, the noncompliance is likely undetectable to the human eye. The single worst case sample was 25.5 percent

below the standard in zone 3 but exceeds the photometric requirements of zones one, two, four, and five and meets or exceeds all other FMVSS and SAE requirements.

The stop lamp is more than five times brighter than the tail lamp. A following driver will have no problem detecting the moment of brake application.

The two combination lamp assemblies are supplemented by a Center High Mounted Stop Lamp (CHMSL). The Sentra's CHMSL illuminates at over two times the minimum standard to provide not only strong warning of brake application to the following driver, but also vehicles further back in the traffic flow. Nissan believes the supplementary benefit of the bright CHMSL helps to compensate for any diminished stop lamp performance.

The combination tail/stop lamp assemblies are mounted high in the vehicle's body near the beltline. This mounting location provides excellent line of sight visibility to a following driver.

Nissan is not aware of any accidents, injuries, owner complaints or field reports related to this condition.

In similar situations NHTSA has granted the applications of various other petitioners. See, for example, 61 **Federal Register**, January 22, 1996 (petition by General Motors); 56 **Federal Register** 59971, November 26, 1991 (petition by Subaru of America); and 55 **Federal Register** 37601, September 12, 1990 (petition by Hella Inc).

No comments were received on the application.

NHTSA has carefully considered Nissan's arguments and the facts in this case. It is reassuring to have Nissan affirm that, in spite of the photometric failures, the stop lamp "is more than five times brighter than the tail lamp," as is the Sentra's mandated center highmounted stop lamp. However, this is no less than what Standard No. 108 already requires for the pair of stop lamps. Because the pair of stop lamps are mounted within the range of height from the road specified by Standard No. 108, the fact that they may be mounted near the beltline is regarded as a neutral safety factor for purposes of this discussion. In the final analysis, it appears to NHTSA that the company has understated the magnitude of the noncompliance in comparison with the data it has submitted, and that the severity of the noncompliance reflects flaws in Nissan's design and manufacturing process that cannot be overlooked regardless of compensating factors such as the location of other stop lamps and the conformance of the stop lamps in question with the other four zonal requirements.

The agency deems it relevant to its decision to deny Nissan's application to discuss briefly the accommodation that Standard No. 108 already makes for manufacturers by imposing less than the absolute performance requirements

established by other Federal motor vehicle safety standards. As Nissan indicates, the first step in determining the photometric compliance of a lighting device with Standard No. 108 is to measure the candela at a number of discrete test points, and then compare them with the values (minimum or maximum) established by the standard. When NHTSA initially proposed in late 1966 that lamps "comply" with Standard No. 108, industry represented that it could not manufacture every lamp to meet every single test point without a substantial cost penalty unjustified by safety. NHTSA accepted this argument. In adopting Standard No. 108, the agency specified that lamps be "designed to comply" with applicable photometric specifications. On a number of occasions since, NHTSA has stated that it will not consider a lamp to be noncompliant if its failure to meet a test point is random and occasional. Thus, historically, there has never been an absolute requirement that every motor vehicle lighting device must meet every single photometric test point in order to comply with Standard No. 108.

NHTSA further accommodated the industry when Standard No. 108 adopted the SAE's zonal system as an alternative method of determining photometric compliance of certain lamps. Under this system, individual test points are grouped into a "zone" with nearby test points. The values are measured and added. If the sum equals or exceeds the total of the minimum required for all test points within the zone, the zone is judged to comply even if one or two of its test points fail to meet its individual candela specification, (as long as the failure is not less than 60 percent of the prescribed value.) Thus, an individual test point within a zone may fail by up to 40 percent.

Nissan asks that NHTSA go even further in accepting a lower level of performance, citing three instances in which it believes that the agency has granted inconsequentiality applications where failures of luminous intensity of less than 25 percent have occurred, the threshold at which it believes differences in light output become noticeable.

The agency has reviewed the cases cited by Nissan (GM, Subaru, Hella) in order to judge whether they afford a precedent for granting this inconsequentiality application. NHTSA has concluded that none of the cases are on point, and, further, that the agency should clarify the apparent misunderstanding of its comments regarding 25 percent luminous intensity differences.

GM determined that turn signal lamps on Buick Century passenger cars failed to meet Zone 3 by an average of 10 percent among the 17 lamps tested while the three compliant zones exceeded the light intensity requirements by at least 20 percent. Because the failures averaged far less than 25 percent, GM argued that they would not be detectable by the naked eye. However, NHTSA granted the application on the basis that, overall, the performance of the lamps would be consistent with that of lamps meeting the minimum requirements in every zone. In the case of Nissan, the magnitude of failure was considerably greater; a number of individual test point failures exceed 25 percent, up to 35.6 percent below the minimum requirement. Even using the zonal method, 18 of 34 zones tested fail to meet Standard No. 108, one zone failing by up to 25.5 percent.

Subaru discovered that amber front side reflex reflectors on some of its vehicles failed to meet Standard No. 108's performance requirements. Subaru contended that the luminance transmittance failures were all less than 20 percent of the minimum values specified by the standard. According to demonstrations that it had conducted, observers could not differentiate between the reflected light of complying and noncomplying reflectors at distances of 30, 60, and 100 meters. NHTSA accepted this argument and granted the application. NHTSA notes that, in this instance, the inconsequential effect of the noncompliance was demonstrated by tests with observers, and that the failures were at individual test points and not zones, as in the Nissan noncompliance. Further, conformance of stop lamps is demonstrably more important to motor vehicle safety than that of front side reflex reflectors.

In the Hella case, NHTSA testing had discovered that eight of 18 combination stop/taillamps had exceeded the *maximum* candela permissible at certain test points for the taillamp function. Hella argued that none of its failures exceeded the maximum intensity by more than 20 percent. NHTSA granted the application on the basis that real-world voltages were typically lower than test voltages, and that any excessive candela values would be reduced upon installation and even further reduced as the lamp aged. In other words, the probability of the noncompliant lamps contributing to glare was reduced in the real world because, as installed and used, their noncompliant maxima may have been reduced to a level of near conformance.

Again, the failure was small and was for test point failures rather than zone failures. The actual effect of real world voltages on the Nissan lamps is not known, but is of little consequence because, except for vehicle voltage, the effect of all external events such as dirt and age is to lower the lamp's intensity. This makes a dim stop lamp an even greater risk.

As stated, NHTSA wishes to clarify its occasional statements that differences in light output do not become noticeable until there is a differential of 25 percent between the light sources being compared. This language was based on a study conducted by NHTSA titled "Driver Perception of Just Noticeable Differences of Automotive Signal Lamps" (DOT HS808209). In outlining its rationale, Nissan seems to misunderstand the research done on "just noticeable differences" (JND). First, the research on JND is based on individuals looking at lamps from a single vantage point in front of the lamps, that is, comparing intensities of single test points.

It is not valid to use the JND justification for judging the effect of zonal intensity failures. Drivers do not look at zones when they observe lamps, they look at the lamp from very narrow angles based on the distance between their eyes and the distance to the lamp. Using the JND justification on zones would imply that drivers would be looking at lamps from all the test points in the zone simultaneously and somehow integrating the numerous intensities into some false representation of how intense the lamp should be. This is simply not the case. For this reason, the JND argument is not applicable to zone failures.

Because it is the central portion, Zone 3 is the most critical area of the stop lamp. It is aimed directly at the following traffic. With respect to Nissan's noncompliance, 104 of the 170 test points (the total number of test points from the group of lamps tested) in Zone 3 did not meet the minimum requirements. This shows that the noncompliances are very specific to one particular zone. It also suggests an apparent failure of quality control procedures rather than random test point noncompliances throughout all five zones. Occasional random noncompliances are to be expected in this very complicated design and manufacturing process. It is for this reason that the "designed to comply" provision is contained in the lighting standard. Further, NHTSA has always interpreted the "designed to comply" requirement to include well-defined quality control procedures.

On the vehicles that NHTSA tested, fourteen test points failed by more than 25 percent, with the worst case test point being over 35 percent. When using the zone compliance measurement, 18 out of the 34 zones tested failed to meet the minimum requirements, one zone failing the zone total by slightly over 25 percent. Again, the agency believes that these are not random, occasional failures of the type that NHTSA sometimes encounters in the course of its compliance testing. Instead, the pervasiveness of the failures is evidence of flaws in Nissan's design and manufacturing process.

To further support granting its application, Nissan staff brought two identical Sentras equipped with noncomplying lamps for NHTSA staff to examine. The stop lamps on these vehicles were examined both in a garage which was moderately lighted and outside in daylight where the skies were overcast. Nissan performed photometric testing on each vehicle before they were examined and found that on one vehicle, the left and right stop lamps produced a sum of 386 and 293 candela in Zone 3, respectively. On the other vehicle, the left and right stop lamps produced a sum of 384 and 330 candela in Zone 3, respectively. As previously stated, the required minimum for Zone 3 is 380 candela. NHTSA staff examined the vehicles from a number of different distances and angles for approximately five minutes in each setting.

Based on this examination, NHTSA staff did not see a stark difference between any of the stop lamps, although most of the staff members could determine that the lamp with the Zone 3 measurements of 293 candela was the dimmest. However, this type of examination does not convince NHTSA that the noncompliance is inconsequential to safety. In the real world, drivers following one of the subject vehicles would not always have the luxury of intently examining the vehicles from a number of angles for a long period of time. They would, in many cases, have to make split second judgments as to whether the vehicle in front of them has its brake lamps illuminated.

Through crash data analysis, NHTSA has found that many rear end crashes occur as a result of a driver's inattention to the area ahead of the vehicle. Drivers may be operating the radio, using a cellular phone, or any number of non-driving related activities. To see the vehicles in front of them, they must often rely on their peripheral vision. In these situations, it may not be readily apparent that one of the subject vehicles has its stop lamps illuminated. On the

subject vehicles, even the stop lamps which comply with the minimum requirement for Zone 3, do so by a narrow margin. The worst failure among the noncompliant lamps was over 25 percent below the minimum for Zone 3. Because of this, the noncompliance has the potential to confuse following drivers as to whether it is a stop lamp or a tail lamp which they are seeing. In an emergency situation, when drivers compare the subject lamps with other nearby stop lamps or with their memory of a stop lamp, they may not make the correct judgment quickly enough. In certain situations, a fraction of a second may be all the time the driver has to make the necessary crash avoidance maneuver. This may not be ample time for the driver to discern whether the lamp is a tail lamp or a stop lamp. It is this added level of risk associated with these vehicles that must drive a decision regarding safety consequences.

This concern about risk of incorrect identification is supported by a 1986 study sponsored by NHTSA and conducted by the University of Michigan Transportation Research Institute (UMTRI-86-28). In this study, test subjects were presented with two lamps intended to simulate a U.S. tail lighting system. These lamps were illuminated to 18, 40, 60, 80, and 100 candela. After the lamps were illuminated to one of these levels, the test subject was asked to quickly determine, only by the brightness of the lamps, whether they were signaling braking or presence (vehicle's taillamps on). When the lamps were illuminated to 80 candela, the test subjects identified the lamps as signaling braking 90 percent of the time. When they were illuminated to 60 candela, the test subjects identified the lamps as signaling braking 74 percent of the time. Finally, when the lamps were illuminated to 40 candela, the test subjects identified the lamps as signaling braking only 39 percent of the time. Of the five test points in Zone 3, the standard requires that three have a minimum value of 80 candela and two have minimum value of 70 candela. Also, according to Nissan's test data submitted with its application, the lowest value obtained at any test points on the subject vehicles was 45.1 candela. These data lead NHTSA to believe that the Nissan noncompliance could lead drivers following the subject vehicles to mistake the stop lamps for tail lamps. Thus, the risk of being in a crash would be higher for the Nissan vehicles compared to vehicles with complying lamps.

In consideration of the foregoing, it is hereby found that the applicant has

failed to meet its burden of persuasion that the noncompliance herein described is inconsequential to safety, and its application is denied.

(49 U.S.C. 30118, 30120; delegation of authority at 49 CFR 1.50)

Issued on: November 21, 1997.

Ricardo Martinez,
Administrator.

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DEPARTMENT OF TRANSPORTATION

Surface Transportation Board

[STB Docket No. AB-477 (Sub-No. 3X)]

Owensville Terminal Company, Inc.— Abandonment Exemption—in Edwards and White Counties, IL and Gibson and Posey Counties, IN

On November 7, 1997, Owensville Terminal Company, Inc. (OTC) filed with the Surface Transportation Board (Board) a petition¹ under 49 U.S.C. 10502 for exemption from the provisions of 49 U.S.C. 10903 to abandon a line of railroad known as the Browns-Poseyville line, between milepost 205.0 at or near Browns, IL, and milepost 227.5 near Poseyville, IN, a distance of 22.5 miles in Edwards and White Counties, IL, and Gibson and Posey Counties, IN. The line traverses U.S. Postal Service Zip Codes 62818, 62844, 47616, and 47633. The line includes the stations of Browns, milepost 205.0; Grayville, milepost 213.5; Griffin, milepost 219.9; and Stewartsville, milepost 225.4.

The line does not contain federally granted rights-of-way. Any documentation in the railroad's possession will be made available promptly to those requesting it. The interest of railroad employees will be protected by the conditions set forth in *Oregon Short Line R. Co.—Abandonment—Goshen*, 360 I.C.C. 91 (1979).

By issuance of this notice, the Board is instituting an exemption proceeding pursuant to 49 U.S.C. 10502(b). A final decision will be issued by February 25, 1998.

Any offer of financial assistance under 49 CFR 1152.27(b)(2) will be due

¹ This petition is a refiling of OTC's April 15, 1997 submission in STB Docket No. AB-477 (Sub-No. 1X). On August 1, 1997, the Board denied the petition without prejudice to OTC's filing an abandonment application. OTC did not adhere to the Board's directive in the August 1 decision in filing this petition for exemption. Consequently, although the Board is publishing notice of the filing of the instant petition based on representations made therein, OTC is advised that the petition may be rejected if opposition is received.