ADVANCE WINDOW GLAZING SAVES LIVES

BY
LABARRON N. BOONE

I. INTRODUCTION

According to the National Transportation Safety Association (NHTSA), an average of 7,492 people are killed and 9,211 people each year are seriously injured due to complete or partial ejection through inadquetly glazed windows.[1] Advance window glazing is a genetic term used to describe numerous methods used to ensure window strength is sufficient to prevent occupant ejection in vehicles. Advanced glazing in the right and front side windows could save an estimated 1,313 lives and prevent 1,297 serious injuries each year.[2] Statistics such as these prompted the NHTSA to conduct research on the potential safety advantages of utilizing advanced glazing materials in front windshields.[3]

II. Potential Safety Benefits of Advanced Glazing

Partial or complete ejection out of windows was associated with 25% of all light vehicle fatalities in 1993.[4] The highest number of fatalities maybe attributed to the fact that ejection increases the probability of death or serious injury.[5] "Looking at the fatality rate of occupants that were involved in non-ejection-related events and comparing the fatality frequency to the fatality frequency of ejection-related accidents, it is seen that the fatality rate for ejected occupants is 37 times higher, than for non-ejected occupants."[6] The NHTSA Advanced Glazing Research Team has tested three types of advanced glazing: (1) bilaminate glazing, in which a thin plastic film is bonded to the glass; (2) trilaminate, in which a plastic film is laminated between two glass layers; and

(3) rigid plastic; which is covered with an abrasion resistant coating and thermoformed to match the curvature of the tempered glass part.[7]

Before the NHTSA could require window glazing in vehicles, it conducted a multitude of testing to insure window glazing did not increase head injuries. The Advanced Glazing Research Team research shows that head injuries are not increased by the use of window glazing.[8] The Team used anthropomorphic dummies to measure the impact forces applied to the head under various simulated conditions. They conducted research on frontal impact, side impact and rollover collisons. All test results showed that head injuries were not increased by the use of window glazing.[9] In response to this positive data, the federal government in the mid 1980's began requiring advance window glazing be placed in the front windshield.[10]

Carl C. Clark, formerly of the Vehicle Research Test Center at NHTSA, conducted research on glass plastic glazing. He determined that glazing is important due to its ability to reduce the liklihood of ejection since there is a greater seriousness of injuries sustained from ejection than from laceration.[11]

III. Pros and Cons of Using Advanced Glazing

The potential for severe injuries are greatly increased if an occupant is ejected from the vehicle. Window glazing reduces the potential of occupants being ejected. It is beyond dispute that occupants are much more safe if retained within the vehicle. Advance window glazing is being used by all manufacturers in the front windshields. However, auto manufacturers have been slow to install window glazing throughout the vehicle even though all statistics show that lives will be saved if glazing is used throughout the vehicle.

Manufacturers have given countless reasons for its unwillingness to incorporate window glazing throughout the vehicle. First, manufacturers claim that head injuries will dramatically increase because advance window glazing creats a much harder windshield. Secondly, manufacturers claim that window glazing decreases visibility upon impact. Finally, they argue that it may be difficult to roll down the windows once the window is distorted due to impact.[12]

All of the manufacturers reasons for failing to install window glazing throughout its vehicle overlooks the most important consideration -- window glazing decreases severe injuries.[13] All auto manufacturers readily admit that occupants are much safer if they remain in the vehicle upon impact in an accident. Because of automotive manufacturers' knowledge of the high rate of ejection through front windshield, manufacturers installed window glazing in the front windshield to protect occupants involved in frontal collisions from ejection. But automotive manufacturers have not placed window glazing throughout the vehicle even though the automotive industry realizes that a substantial number of occupants will be ejected through side and rear windows.

Why is window glazing safe in the front windshield, but not in other areas of a vehicle? Why are the pitfalls marshaled by manufacturers against placing window glazing in the side and rear windows, inapplicable to the front windshield? There is no good reason for the distinction. Manufacturers know window glazing will prevent ejection and save lives. The reason for not placing window glazing throughout the vehicle boils down to economics. It has absolutely nothing to do with safety. Automotive manufacturers such as GM have alleged numerous downfalls[14] to window

glazing, but the benefits far outweigh the downfalls. Yes, minor injury potential, such as scratches and cuts, may be increased, but it is beyond dispute that severe injuries are decreased when window glazing is utilized because the occupants remain in the vehicle.

CONCLUSION

Manufacturers have always performed cost benefit analysis to justify safety decisions. Window glazing is another safety decision made by manufacturers on the basis of cost. Window glazing cost more than the tempered glass used in the side and rear windows of most vehicles. The manufacturer installed window glazing in the front windshields because NHTSA concluded it would reduce severe injuries due to ejection. But what about occupants ejected from other windows in the vehicle? Are they not worthy of protection? Sure they are. All occupants deserve the maximum amount of protection possible, especially when the cost is only $15.00 per four door vehicle.[15]

Manufacturers are not willing to spend $15 more per vehicle to save lives. Therefore, the gatekeepers'[16] for consumer safety must stand up and demand that public safety come before corporate profits. If not, there will be unnecessary deaths on our public highways from occupant ejection which could have been prevented by window glazing.

END NOTES

[1] Ejection Mitigation Using Advanced Glazing, a status report of the NHTSA, November 1995, p.1-1.
[2] Ejection Mitigation, at p.1-1.
[3] Id.
[4] Ejection Mitigation at p.3-1.
[5] Ejection Mitigation at p.2-1.
[6] Ejection Mitigation, at p.3-5; see also "Federal Involvement: What's Next for Auto Glass?", Glass Magazine, at p.2-1, May 1986 (stating that [t]he probability of a crash resulting in a death or serious injury is much greater when occupants are ejected from the vehicle."
[7] "Ejection Mitigation" at p.4-1.
[8] "Ejection Mitigation," at p.6-19.
[9] "Ejection Mitigation," at p.5-1 - 6-20.
[10] Federal Motor Vehicle Safety Standard 205.
[11] More Glass-Plastic Glazing Ahead, Glass Magazine, May 1985.
[12] Glass Magazine, "Federal Involvement: What's Next for Auto Glass?", Volume 36, number 5 (May 1986).
[13] "Ejection Mitigation," at p.3-5.
[14] "GM introduced glass-plastic glazing in 1984 on a limited number of production vehicles because of its potential to reduce cosmetic or non-life-threatening facial cuts that occur when occupants strike the windshield. The glazing, referred to as the high-penetration windshield. GM discontinued it use at the end of the 1987 model year. That decision was reached after customer problems with the product resulted in high replacement costs for customers and high warranty cost for GM. Many of the problems experienced by the customers were the result of the "inner-shields" sensitivity to abrasion. GM is also aware of concerns regarding poor vision through the glazing and increased difficulty in cleaning the plastic surface." General Motors response to advanced notice of proposed rule making, "Side Impact Protection," at p.2 (1988)
[15] NHTSA, Federal Motor Vehicle Safety Standards Side Impact Protection -- Passenger Cars, August 19, 1988.
[16] Gatekeepers are the consumer organizations, public safety groups and trail lawyers that demand safe products.