

**REPRINT**

**REPORT OF THE  
DEPARTMENTS OF STATE POLICE  
AND MOTOR VEHICLES**

# **Sunscreening Material on Motor Vehicles**

**TO THE GOVERNOR AND  
THE GENERAL ASSEMBLY OF VIRGINIA**



## **HOUSE DOCUMENT NO. 29**

**COMMONWEALTH OF VIRGINIA  
RICHMOND  
1989**

HOUSE JOINT RESOLUTION #123

STUDY COORDINATED BY

CAPTAIN R. L. BUMGARDNER

VIRGINIA STATE POLICE

MR. JOHN T. HANNA, P. E.

VIRGINIA DEPARTMENT OF MOTOR VEHICLES

COORDINATOR OF FIELD TESTING

FIRST SERGEANT PAUL R. JEFFREY, JR.

VIRGINIA STATE POLICE

TECHNICAL ADVISOR FOR FIELD TESTING PROCEDURES

MR. R. MICHAEL MCDONALD

ASSOCIATE PROFESSOR AND COORDINATOR OF  
SAFETY & RISK ADMINISTRATION PROGRAM

VIRGINIA COMMONWEALTH UNIVERSITY

DATA COLLECTED BY

MS. KATHRYN MALBON

RESEARCH ASSISTANT

VIRGINIA COMMONWEALTH UNIVERSITY

REPORT OF THE  
DEPARTMENTS OF STATE POLICE AND MOTOR VEHICLES  
ON SUNSCREENING MATERIAL ON MOTOR VEHICLES  
TO  
THE GOVERNOR AND THE GENERAL ASSEMBLY OF VIRGINIA  
RICHMOND, VIRGINIA  
DECEMBER, 1988

TO The Honorable Gerald L. Baliles, Governor of Virginia  
and  
The General Assembly of Virginia

ORIGIN OF THE STUDY

House Joint Resolution No. 123, agreed to during the 1988 Session of the General Assembly, requested the Departments of State Police and Motor Vehicles to conduct a study on the use of window tinting on motor vehicles. The resolution may be found in Appendix A.

House Joint Resolution No. 123 requested the Departments of State Police and Motor Vehicles.

1. Examine the use of window tinting on motor vehicles.
2. Examine the use of window tinting to conceal unlawful activities within motor vehicles.
3. Examine what changes, if any, should be made to Virginia law.

REPORT OF THE DEPARTMENTS OF  
STATE POLICE AND MOTOR VEHICLES  
ON SUNSCREENING MATERIAL ON MOTOR  
VEHICLES TO THE GOVERNOR AND  
THE GENERAL ASSEMBLY OF VIRGINIA

Charge to the Departments

House Joint Resolution No. 123, agreed to during the 1988 Session of the General Assembly, requested the Departments of State Police and Motor Vehicles to conduct a study on the use of window tinting on motor vehicles. The joint resolution requested these Departments to

1. Examine the use of window tinting on motor vehicles.
2. Examine the use of window tinting to conceal unlawful activities within motor vehicles.
3. Examine what changes, if any, should be made to Virginia law.

Introduction and Overview

Modern passenger car designs have tended to utilize large glazing areas. Aerodynamic design requires glazing to be obliquely mounted, which has led to statements of discomfort by vehicle occupants because of excessive exposure to sunlight. In turn, this has resulted in moderately widespread use of dark tinted, after-market sunshading materials on the windows of motor vehicles.



Because of concerns over both driver visibility and the possible use of sunshading materials to conceal contraband and illegal activities, this study addresses both highway safety and law enforcement concerns.

The Commonwealth of Virginia first adopted standards for safety glazing for use in motor vehicles around 1938. In compliance with Section 46.1-293(b) of the Code of Virginia, the Superintendent of State Police elected to adopt the American National Standard Code Z 26.1 for safety glazing material for motor vehicles operating on land highways. The fundamental purpose of the Code is to prescribe the functional properties of safety glazing materials in such a manner that they can be used in any place in the motor vehicle for which they possess those mechanical or optical properties, or both which are requisite and appropriate. The National Highway Traffic Safety Administration adopted American National Standard Code Z 26.1 for safety glazing for use in motor vehicles, thus, the Virginia standard for safety glazing used in motor vehicles and the Federal standard are one and the same.

The purpose of the Virginia standard is to reduce injuries resulting from impact to glazing surfaces, to ensure a necessary degree of transparency in motor vehicle windows for driver visibility, and to minimize the possibility of occupants being thrown through the vehicle windows in collisions. The luminous transmittance requirements for windows requisite for driver visibility is a minimum of 70 percent. To date, the American National Standards Institute, the National Highway Traffic Safety Administration nor the Society of Automotive Engineers have deemed it appropriate to set the luminous transmittance requirement at less than 70 percent for any windows requisite for driver visibility.

## Study Focus

In light of the concern expressed by the General Assembly about the increased use of sunshading materials applied to the windows of motor vehicles, and the lack of research findings relevant to the impact of this practice on criminal activity, traffic safety, and law enforcement officers, this study addressed the following questions:

1. To what extent does sunshading material of varying densities inhibit or impede the correct observation by sworn law enforcement personnel and private citizens of persons and items located inside a motor vehicle?
2. To what extent does sunshading material of varying densities inhibit or impede the correct observation by sworn law enforcement personnel and private citizens seated in the driver's seat of a vehicle with sunshading material applied of persons and items placed outside a motor vehicle?
3. To what extent does sunshading material of varying densities inhibit or impede the correct observation by sworn law enforcement personnel and private citizens of persons and items located outside a motor vehicle while standing beside a vehicle with sunshading material applied and looking through the motor vehicle at an object or person on the other side of the motor vehicle?
4. To what extent do sworn law enforcement officers feel that sunshading material applied to safety glazing of a motor vehicle could be a causative factor in traffic crashes?

5. To what extent does sunshading material of varying densities inhibit or impede the ability of private citizens to establish eye contact with the driver of a vehicle with sunshading material applied to the side windows of a motor vehicle when approaching this vehicle at an angle of 90 degrees at an intersection?
6. To what extent do private citizens feel that individuals can use sunshading material on the windows of motor vehicles to their advantage so as to conceal unlawful activities within a motor vehicle?
7. To what extent do private citizens feel that police officers could be hindered in the performance of their duties due to sunshading material being applied to the side and rear windows of motor vehicles?
8. To what extent are private citizens in favor of the State regulating the degree of sunshading material which can be placed on the rear and side windows of motor vehicles?
9. To what extent are private citizens in favor of allowing sunshading material on motor vehicles in Virginia?
10. To what extent do sworn law enforcement personnel feel their personal safety is adversely affected by the placement of sunshading material on the windows of a motor vehicle?

## Methodology

Inquiries were made to the Virginia Association of Chiefs of Police, the International Association of Chiefs of Police, the Virginia Sheriffs Association, the National Sheriffs Association and the American Association of Motor Vehicle Administrators for any official policy statements regarding the use of sunshading materials.

In addition, questionnaires were developed and mailed to 292 Virginia Police and Sheriff Departments, 52 State Police area offices, the National Sheriffs Association and 50 Departments of Motor Vehicles in the United States. The survey questions primarily centered on law enforcement issues and concerns pertaining to concealment of criminal activities, and driver visibility and safety. Also, the motor vehicle departments were surveyed as to their own states' policy and statutory stipulations concerning sunshading materials and definitions of vehicle classes.

The Federal Criminal Justice Research Data Base was queried in search of information on this subject. The Motor Vehicle Manufacturers Association of the United States, Inc. and The National Highway Traffic Safety Administration were contacted seeking data and input for this study.

Observational field testing and opinion surveying were conducted using 111 police officers and 135 private citizens. The field testing consisted of evaluating the real and perceived effects of sunshading material on motor vehicle visibility and safety, using four vehicles with varying degrees of sunshading materials applied. There was one vehicle used as a control where no sunshading material was applied.

## Findings

Official policy positions, which varied from organization to organization, were received from the American Association of Motor Vehicle Administrators, the International Association of Chiefs of Police, the Virginia Sheriffs Association and the National Sheriffs Association. The Virginia Association of Chiefs of Police has no official policy statement regarding the use of sunshading material on motor vehicles.

Also, responses to the surveys that were mailed out were received from 94 Virginia Police Departments, 66 Virginia Sheriffs Departments, 49 Virginia State Police areas, and 32 Departments of Motor Vehicles. In general, the findings of the surveys and the field testing were as follows:

1. When looking from the outside of a vehicle to the inside of the vehicle, sunshading materials of varying densities will inhibit or impede the correct observation by sworn law enforcement and private citizens of persons and items. The data also reflects the darker the sunshading material and the more locations the sunshading is applied on the vehicle, the more a person's vision will be impeded upon looking into a vehicle with regards to persons and items.
2. Sunshading material adversely affects the vision of both law enforcement personnel and private citizens when seated in a vehicle with sunshading material and looking out at persons and items. The data indicates the darker the sunshading material and the more windows to which sunshading material was applied caused both an actual and perceived loss of visual activity.

3. Sunshading material again inhibited or impeded the vision of private citizens when looking through the vehicles. The hindrance again depended on the amount and luminous transmittance of the sunshading material placed on the vehicle.
4. Of all the 111 police officers surveyed, 96 percent believed sunshading material could be a causative factor in crashes.
5. Of the 135 private citizens surveyed, 96 percent believed they would not be able to establish eye contact with the driver of a vehicle of the type used in the field test with the darkest tinting. As the darkness of the tinting decreased, the percent also decreased. Thus, once again, the inability to establish eye contact depended on the luminous transmittance of the sunshading material applied to the windows and location of the sunshading applied to the vehicles.
6. Of the 135 private citizens surveyed, 96 percent believed individuals could use sunshading material on the windows of motor vehicles to conceal unlawful activities within the vehicle.
7. Of the 135 private citizens surveyed, 93 percent believed police officers could be hindered in the performance of their duties due to sunshading materials applied to safety glazing on the sides and rear windows of motor vehicles.
8. Of the 135 private citizens surveyed, 92 percent were in favor of the State regulating the degree of sunshading material which can be placed on the rear and side windows of motor vehicles.

9. Of the 135 private citizens surveyed, 68 percent were in favor of allowing sunshading materials on motor vehicles in Virginia.
10. Almost 100 percent of the sworn law enforcement personnel believed their personal safety could be adversely affected by the placement of sunshading material on the windows of a motor vehicle, especially of the darkest tinting used in the field test.
11. Temperatures inside vehicles were not significantly reduced by application of sunshading material.
12. Twenty-five (25) of the 32 Department of Motor Vehicles and Public Safety agencies that responded reported their state had a statute to control application of sunshading materials to motor vehicle glazing.

#### Conclusions

The study findings resulted in the following conclusions:

1. Sunshading material applied to the windows of motor vehicles restricts driver visibility, may contribute to traffic crashes, may be a hindrance to police officers in the performance of their duties, creates apprehension on the part of police officers approaching a vehicle so equipped, and can be used to conceal illegal activities and contraband.

2. Sunshading material applied to the windows of motor vehicles restricts driver visibility and restricts police officer's visibility, in varying degrees, depending on the density of shading and the number of windows to which the material is applied, when looking into, through, and out of motor vehicles. In addition, it also diminishes peripheral vision and eye contact between drivers.
3. Sunshading material applied to the windows of motor vehicles does not significantly reduce temperatures inside the passenger compartments of motor vehicles.

#### Recommendations

Based on the study findings and conclusions, it is recommended that:

1. No change be made in Section 46.1-291 of the Code of Virginia as long as Federal Safety Standard No. 205 permits the use of windows having no luminous transmittance standard in the 180 degree rearward field of vision on multi-purpose passenger vehicles.
2. Section 46.1-291.01 of the Code should be amended to prohibit the use of any sunshading material having a luminous transmittance less than 70 percent on the windshield or any window of any motor vehicle manufactured for the model year 1992 and all subsequent model years.



3. The Virginia Legislature draft a resolution and forward it to the National Highway Traffic Safety Administration resolving to extend the applications of Safety Standard No. 205 for passenger vehicles to include multi-purpose passenger vehicles and pickup trucks, requiring a luminous transmittance of not less than 70 percent for all windows in passenger vehicles, multi-purpose passenger vehicles, and pickup trucks, except the rear window for all vehicles manufactured for the model year 1992 and all subsequent model years. The rear window should be required to have a minimal luminous transmittance of 35 percent or more, provided the vehicle is equipped with an outside rearview mirror on the driver's side and passenger side of the vehicle. The mirrors should be located so as to reflect to the operator of such vehicle a clear view of the highway for a distance of not less than 200 feet to the rear of such vehicle.

RLB/fs

9/15/88

1988 SESSION  
ENGROSSED

HP4220553

HOUSE JOINT RESOLUTION NO. 123

House Amendments in [ ] - February 16, 1988

[ *Establishing a joint subcommittee Requesting the Department of State Police and the Department of Motor Vehicles* ] to study motor vehicle window tinting.

Patrons—Reynolds and Philpott; Senator Goode

Referred to the Committee on Rules

WHEREAS, in 1985, § 46.1-291 was amended to provide that motor vehicles could have affixed to the rear side windows, rear windows any sun-shading material; and

WHEREAS, subsequent amendments to the Code added § 46.1-291.01 which allowed motor vehicles to be equipped with sun-shading or tinting films when the licensed physician certified the user of the vehicle was susceptible to harm or injury from exposure to sunlight or bright artificial light sources; and

WHEREAS, the Virginia State Police adopted standards and specifications for sun-shading material as permitted by § 46.1-291 (b) 3 of the Virginia Code on July 1, 1987; and

WHEREAS, certain motor vehicles are exempted by an Act of Congress from state action which places any limitation upon the type of shading that can be placed on rear or side windows; and

WHEREAS, the restrictions of the aforesaid Code may not apply to all vehicles because of this federal limitation; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That [ a joint subcommittee be established to the Department of State Police and the Department of Motor Vehicles are requested to jointly] study window tinting on motor vehicles and the use of window tinting to conceal unlawful activities within motor vehicles and what changes, if any, should be made to Virginia law with regards thereto.

[ The joint subcommittee shall be appointed as follows: three members from the House Committee for Courts of Justice to be appointed by the Speaker; two members of the Senate Committee for Courts of Justice to be appointed by the Senate Committee on Privileges and Elections, and a representative of the Virginia Department of State Police to be appointed by the Governor.

The joint subcommittee shall report its findings and recommendations to the 1989 Session of the General Assembly-

The indirect cost of this study is estimated to be \$5,825; the direct cost shall not exceed \$3,240. Upon completion of this study the Departments should report their findings to the Governor and the 1989 Session of the General Assembly as provided in procedures of the Division of Legislative Automated Systems for processing legislative documents.]

Official Use By Clerks

Agreed to By  
The House of Delegates  
without amendment   
with amendment   
substitute   
substitute w/amdt

Agreed to By The Senate  
without amendment   
with amendment   
substitute   
substitute w/amdt

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Clerk of the House of Delegates

Clerk of the Senate

