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MANDATORY SEAT BELT USE

by

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(The opinions, findings, and conclusions expressed in this report are those of the author and not necessarily those of the sponsoring agencies.)

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RECOMMENDATIONS

- A. The Virginia General Assembly should enact a law making the use of restraint systems in automobiles compulsory. House Bill 642 on page 13 of this report is a recommended model. The General Assembly may, in addition, wish to consider an exemption for out-of-state drivers.

- B. Along with the new law, Virginia should launch a public information campaign on the benefits of seat belt use. This campaign would make motorists amenable to the new law and thus ensure that the legislation would be effective.

- C. Virginia's state and local police departments should be encouraged to vigorously enforce the new restraint use law. Enforcement need not be expensive; citations for failure to use the restraints could be issued ancillary to citations for other violations. If the driving public should discover that police would be unwilling to enforce the new law, restraint use would remain at a low level.

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Year after year, thousands of Virginians are killed or injured in car accidents. The annual cost in terms of medical treatment, rehabilitation, and lost productivity is staggering, both for the victims and for the Commonwealth, yet many of these deaths and injuries could easily be avoided. The seat belts found in virtually every car in Virginia are, if worn, extremely effective in providing protection. Unfortunately, most Virginians choose not to use seat belts, either through habit or lack of information.

Around the world, over two dozen jurisdictions have passed legislation making seat belt use mandatory. Motorists who do not wear belts are subject to fines and, in some places, imprisonment. This legislative approach seems at first to be a promising option for the Commonwealth. But how are seat belt laws implemented in other countries? Are they effective? Are they costly? Are they a good idea for Virginia? These and other questions are discussed in this report.

The report is divided into three main sections. The first examines seat belt laws in various jurisdictions around the world, and the second projects the effects of a mandatory restraint use law in Virginia. Specific legislative proposals are the topic of the final section, which also includes a cost-benefit analysis of the recommendations.

SEAT BELT USE LAWS AROUND THE WORLD

The implementation and the effectiveness of the compulsory restraint use legislation enacted worldwide vary a great deal from country to country. Unfortunately, the statistics needed for a proper analysis of their impact are often unavailable. The data for the six nations examined for this study are relatively extensive and represent the full range of experiences encountered with seat belt use laws.

Australia

In 1970, Victoria became the first state in Australia to enact a mandatory seat belt use law. This law was so successful that by 1972 every state on the continent had passed similar legislation.(1) Today, most auto occupants in Australia are required to wear available safety belts. Only children, local deliverymen, persons with certificates from either physicians or motor vehicle commissions, and people driving cars in reverse gear are exempted from the law. The penalty for violation is a fine ranging from about US\$5 to US\$258 with a possible prison term of six months. The average fine imposed on offenders is less than US\$20.(1)

Before the eight seat belt laws went into effect in Australia, massive public education campaigns were undertaken to convince citizens of the benefits of using safety belts. Additionally, the police issued warnings instead of citations for the first month or two after the laws went into effect. The evidence from Australia suggests that the level of enforcement varies a great deal from state to state. In all Australian states, seat belt laws are enforced in conjunction with other violations. In other words, the police issue seat belt citations only when a motorist has been stopped for another offense such as speeding or drunken driving.(1)

Mandatory seat belt legislation has had a dramatic impact on belt usage rates in Australia. Before the laws were passed, 18% of the motorists in Victoria wore seat belts. Immediately after enactment, wearing rates jumped to 75% in urban areas and 64% in the countryside. Since then, usage rates have risen to 90% in the cities and 80% in rural areas.(2) Similar increases have occurred across Australia.

While seat belt usage has skyrocketed Down Under, the rates of death and serious injury have fallen. One study estimated that 1980 fatalities and injuries to motorists in Victoria were 44% and 45% lower than expected, mostly due to the seat belt law.(2) Another study found that over the entire continent, compulsory belt use legislation caused a 20% to 25% reduction in deaths and 20% fewer injuries.(1) Injuries that do occur are, on the average, less severe than those sustained before the seat belt law. Australia's physicians have noted fewer major or fatal injuries to the heads, chests, necks, abdomens, and arms of motorists using seat belts. In 1975, a study of hospital work loads attributed an 80% drop in severe eye injuries, 50% fewer facial and chest injuries, 40% less kneecap and hip injuries, and 27% fewer spinal cord injuries all to the compulsory seat belt use legislation.(3)

Canada

As of this writing, four provinces in Canada -- Ontario (1976), Saskatchewan (1977), British Columbia (1977), and Quebec (1976) -- have enacted mandatory seat belt use legislation. In each a driver is held responsible when any occupant of his auto is caught not using a seat belt. (1) The penalty includes a fine of from \$5 to \$200 and a maximum jail term of 60 days. Exemptions vary from province to province, but in general drivers providing services and those with medical excuses are not subject to the law. (1)

Each of the four provinces enforces mandatory seat belt use along with other traffic violations. Exact numbers of citations issued cannot be obtained from each area, but it appears that Saskatchewan and Quebec maintain the highest and lowest levels of enforcement, respectively. (1)

In conjunction with mandatory restraint laws, each provincial government and the national Transport Canada have conducted extensive public information campaigns. While these campaigns have made citizens more receptive to seat belt use and to the mandatory legislation, they have not by themselves increased wearing rates. (1) However, the combination of public information and mandatory laws has proven extremely effective in raising restraint usage rates. Belt use in Ontario jumped from 17% before the legislation to 77% after enforcement of the new law. In Saskatchewan, wearing rates increased from 26% to 78% for drivers. No increase in belt usage was found in nearby provinces which had not passed compulsory laws. (4) Long-term trends in wearing rates are substantial if not as impressive as the short-term data. In 1978, belt usage among drivers was 64% in Ontario and 68% in Saskatchewan. (1) The literature blames lowering rates on a lack of enforcement by Canadian officials. (5) Notwithstanding this drop, restraint usage has stabilized at a level 40 to 50 percentage points above pre-legislation figures.

The net effect of compulsory seat belt laws on driving-related fatalities and injuries is difficult to discern. Of all the provinces with such laws, only Ontario provides adequate data, and Ontario lowered its speed limit in conjunction with the seat belt act. Therefore, one cannot tell how much of the reduction in fatalities (18.3%) and injuries (19.4%) is attributable to the seat belt law alone. (1) Canadian studies do indicate that emergency medical expenses, general medical costs, and rehabilitation charges are all lower for motorists injured while wearing seat belts than they are for nonusers. (6) Overall, hospital costs for those wearing belts are about half those of nonusers (\$228 and \$419, respectively). (5) The compulsory restraint legislation has also caused an unexpected shortage of organ donors in Ontario, where victims of car crashes formerly provided much of the supply. (7)

West Germany

On January 1, 1976, West Germany's compulsory seat belt law became effective. All front seat occupants of passenger cars are required to wear a safety belt, except for taxi and rental car drivers, deliverymen, persons driving cars in reverse gear or at very slow speeds, those with medical exemptions signed by a physician, and children under 12, who are required to remain in the back seat. Police are urged to inform non-users of the law, but there is no penalty for noncompliance.(1)

The German government financed information campaigns to educate the public on safety belt use, but these programs failed to make a meaningful long-term impact on seat belt wearing rates.(1)

West Germany's mandatory restraint law had more success in raising seat belt use rates. On city streets, wearing rates climbed from 15% to 47% and on country roads they rose from 27% to 64%. On freeways, where the use of restraints was already 47%, the compulsory law has caused an increase to 77%. The weighted averages for all of Germany are 25% use before the law and 58% after enforcement began.(1)

Unfortunately, there are no reliable data on the effects of mandatory seat belt use legislation on Germany's fatality and injury rates.(1)

Puerto Rico

Puerto Rico's seat belt use law became effective on January 1, 1974.(1) Drivers and passengers are required to wear available safety belts while travelling on public highways. Offenders pay a fine of \$10 to \$25. Puerto Rico allows many exceptions to the law, including car occupants shorter than 55 inches, those with medical exemptions, occupational drivers, drivers who claim that the shoulder belt "interferes" with operation of the car, and others who qualify because of "size, physical deformity or extreme obesity."(1) Most Puerto Rican drivers can avoid fines by claiming one or more of these exemptions.(8)

Along with the mandatory seat belt law, Puerto Rico conducted a number of public information campaigns. These programs included talks at schools and meetings as well as mass media appeals.(1) Although the literature offers no statistical proof, officials report that educational campaigns helped both to make the public receptive to the mandatory seat belt law and to teach citizens about proper belt use.(9)

Puerto Rican police began issuing citations for seat belt nonuse almost two months after the law became effective. However, the level of enforcement activity, as indicated by the number of citations issued,

fluctuated a great deal from 1974 to 1977, and the usage rates varied directly with the enforcement activity. During periods when few citations were issued, restraint wearing dropped below 10%. When, as in 1975, police enforced the law with more vigor, usage rates rose as high as 35%.(9)

The evidence from Puerto Rico is insufficient to support a detailed analysis of the effects of the mandatory restraint use law. However, one may conclude that when enforcement and public education were vigorously pursued by officials, seat belt wearing rates increased and driving fatalities decreased significantly.(1) In addition, physicians from Puerto Rico report that seat belts, when used, dramatically reduce accident-related injuries.(10)

France

In France, a compulsory seat belt usage law came into effect on July 1, 1973. Front seat occupants must wear restraints between 10:00 p.m. and 6:00 a.m. in towns and at all times on roads outside towns.(1) The law does not apply to taxi drivers, children under 12, pregnant women, those less than 55 inches tall, or people with medical exemptions signed by a doctor. Violators may be fined \$13 to \$20 (in 1980 US dollars).(1)

France's mandatory restraint law is enforced by a number of organizations. Municipal authorities monitor seat belt usage on town and city roads. Roads outside towns are under the jurisdiction of the Gendarmerie Nationale. French officials report that the Gendarmerie Nationale is more conscientious about enforcing the mandatory seat belt law than are the municipal police. In any case, restraint usage is usually enforced along with other traffic violations.(1)

Concomitant with the introduction of a seat belt use law, French officials ran extensive public education programs on safety restraints. These programs made the public more amenable to the new law, but by themselves did not increase seat belt use.(1)

Seat belt usage rates in France appear to be influenced more by levels of enforcement than anything else. Immediately after the law became effective, wearing rose from a pre-legislation rate of approximately 20% to 80%. However, the authorities did not enforce the new law and soon usage dropped to 50% on roads outside towns. Alarmed by this drop, the Gendarmerie Nationale redoubled its enforcement efforts, and by 1975 wearing rates were back up to near 80%. On city roads, where the law applied only at nighttime and where enforcement was relatively loose, belt usage remained at 30% to 50%.(1)

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Unfortunately, there are no hard data on how the mandatory restraint law has affected death and injury rates on France's roads. Unofficial reports claim that seat belts have reduced fatalities by 63%. Although these reports are impossible to support or refute without proper statistical evidence, it is fair to say that in French automobile accidents, drivers without seat belts are 2.5 times more likely to be killed or injured than are drivers wearing safety restraints. (11)

Sweden

Since January 1, 1975, front seat passengers of all cars in Sweden have been required to wear available seat belts. Children under 15, people less than 55 inches tall, taxi occupants, and those with medical exemptions are all immune from prosecution. Other violators may be fined approximately \$23.50 (based on 1980 US dollars). (1)

In Sweden, compliance with the seat belt law is monitored when motorists are stopped for other traffic violations. Government officials do not believe in devoting special enforcement efforts to increase seat belt wearing rates.

The Swedish government conducted a low-key campaign on belt use soon after the mandatory law was passed. However, for four years prior to the law's enactment, the national Department of Traffic Safety and insurance companies had run extensive public education programs. As a result, motorists knew about both passage of the mandatory law and the benefits of seat belt use. (1)

Sweden's mandatory restraint legislation had a marked effect on belt use. Before enactment of the law, wearing rates in cities and rural areas were 22% and 50%, respectively; afterwards, these figures jumped to 75% and 87%. (1)

There is little information on the effectiveness of seat belt legislation in Sweden. However, a hospital survey found that accident-related admissions dropped by 29% after the new law went into effect. Additionally, the use of seat belts was found to reduce deaths and severe injuries by 50% to 70% in all types of collisions. (11)

General Comments

Today, over 25 countries around the world have some sort of mandatory seat belt law. Usually these laws apply to front seat occupants of cars. Most countries provide exemptions for children, drivers of commercial vehicles, and persons who have a certificate signed by a physician. While a wide variety of penalties may be imposed on

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violators, noncompliance generally leads only to a small ~~fine~~ of US\$10 or less.(1)

Compulsory seat belt use legislation is, in practice, inexpensive. Law enforcement authorities need not exert special efforts to monitor safety restraint use. Around the world, these laws are generally enforced in conjunction with other traffic violations. More significant costs are associated with the public information campaigns used to improve attitudes towards seat belt use. However, in many of the countries surveyed, private sources such as insurance companies have helped develop these educational programs. Thus, the net costs to governments from the implementation of compulsory restraint laws have been rather low.(1)

Mandatory seat belt laws had an effect on restraint usage in every country studied. Generally, wearing rates rose 200% to 400% immediately after the law became effective. After a short period of time, the rates fell 10 to 20 percentage points, only to later rise gradually to a plateau.(1) The details of changing belt usage rates vary a great deal from nation to nation. But it is clear that two variables are primarily responsible for wearing rates: public education and law enforcement.

Public education and vigorous law enforcement are critical to the success of a seat belt use law. Educational campaigns can change public attitudes towards seat belts and restraint laws. These campaigns also affect the quality of enforcement. In countries where mandatory seat belt laws were not generally accepted, the police refused to issue citations.(1) Enforcement is absolutely necessary to maintain high wearing rates. After the initial flush of belt usage experienced in most countries, wearing rates varied according to the likelihood of apprehension. In Canada and Puerto Rico, conscientious enforcement efforts yielded dramatic increases in belt usage. When police again became careless, wearing rates declined.(1)

Of course, any piece of legislation should be judged by its effects on society. The impact of seat belt laws around the world on accident-related injuries and deaths is difficult to discern. In many countries there are not enough data to generate any kind of analysis. In other jurisdictions, such as Ontario, one cannot separate the effects of seat belt laws from the consequences of other traffic regulations.(1) However, there is enough information to support a few broad conclusions.

The experience of other countries proves that mandatory seat belt use laws can save motorists from death and serious injury. In Victoria, Australia, where enforcement is particularly vigorous, driving fatalities have decreased by 44%. In most nations the actual net reductions in driving-related deaths have been somewhat lower than originally expected. This is because motorists who refuse to wear belts after a

law is in effect are more accident-prone than belt users. Nonetheless, jurisdictions with seat belt laws show reductions in deaths and injuries resulting from car accidents. When injuries do occur, they tend to be less serious and less expensive to treat.

In sum, mandatory restraint legislation appears to be extremely cost effective. The investment of relatively cheap enforcement and public education programs yields significant savings in medical care, rehabilitation, insurance premiums, and the like. Although the net effects of this legislation are not as great as originally anticipated, seat belt laws still offer a viable, relatively painless way to save thousands of motorists from death and serious injury.

PROJECTED EFFECTS OF A SEAT BELT LAW IN VIRGINIA

This section examines the most likely effects of a compulsory restraint use law in Virginia. The projections are divided into three categories: seat belt usage, accident-related death, and accident-related injury. These projections are generally conservative. For example, whenever possible estimates have been based on drivers only. Other car occupants who would be saved from death or physical harm have been excluded. Hence, the actual consequences of a seat belt use law in Virginia may be much more beneficial than predicted here.

Seat Belt Usage

As of this writing, there are no data available on current seat belt usage on Virginia's highways. However, one may develop an estimate from past surveys conducted in Virginia and from current nationwide statistics.

In 1977, 16.3% of the drivers on Virginia's roads wore seat belts.⁽¹²⁾ A national study found a comparable wearing rate of 18.5%.⁽¹³⁾ More recently, researchers have found that nationwide, restraint usage is on the decline.^(14,15) Assuming that Virginia's motorists follow this trend, current seat belt usage is probably at 10% to 15%.

Were Virginia to enact a mandatory seat belt use law, wearing rates would undoubtedly skyrocket. Immediately after passage of the law, use rates would probably rise to 70% to 80%. These estimates are based on the experience of other, relatively similar jurisdictions such as Ontario, Canada, and Australia. After this initial surge in seat belt utilization, there may be some decline, depending on the level of enforcement exercised by Virginia's police. If few or no citations are

issued to nonusers, wearing rates can be expected to decrease to the 30% to 50% range as in West Germany. Or if there is no enforcement, the mandatory restraint law may have no effect, as has happened in Puerto Rico. However, if police officers regularly issue citations to motorists not wearing seat belts, the high initial usage rates can be maintained and even be augmented over time. That is what has occurred in Australia, where authorities have gone to no extra trouble to promote seat belt wearing. Restraint usage there is enforced only in conjunction with other traffic offenses.

The foregoing estimates assume that any compulsory restraint law in Virginia would be accompanied by a public education program. As has been seen in other jurisdictions, such campaigns increase both enforcement and public acceptance of seat belt laws. Without some sort of information campaign, it is unlikely that any restraint law would be effective in Virginia.

Accident-Related Death

Although usage rates are relatively simple to predict, the true measure of a mandatory belt usage law is its effect on deaths and serious injuries. Unfortunately, the literature offers no easy way to forecast how a seat belt law will affect the number of highway fatalities in Virginia. In this report, three data bases are examined. Each of the three has substantial flaws, but together they lend support to a few broad conclusions.

The first estimate of death rates under a mandatory seat belt law is based on data compiled by the Virginia State Police for the years 1978 to 1981.⁽¹⁶⁾ Over these years, one finds that some 136,541 drivers were killed or injured in automobile accidents. Of these drivers, 12,406, or 9.1%, were wearing lap belts, shoulder harnesses, or both. The remaining 124,135 used no restraints whatsoever. Sixty, or 0.5%, of the belt users and 2,107, or 1.7%, of the nonusers died as a result of these accidents. In other words, nonusers were 3.5 times more likely to die.

Based on these fatality rates, Table 1 shows the number of lives that might have been saved had more accident victims worn their seat belts.

Table 1

Expected Driver Fatalities and Seat Belt Usage, 1978-1981

| Percentage of Seat Belt Use | Number of Deaths | Lives Saved |
|-----------------------------------|---------------------|----------------|
| 100 | 661 | 1,506 |
| 80 | 992 | 1,175 |
| 70 | 1,158 | 1,009 |
| 60 | 1,323 | 844 |
| 50 | 1,489 | 678 |
| 25 | 1,903 | 264 |
| 9.086* | 2,167* | --- |

*Actual Figures (16)

Table 1 indicates that every extra percentage point of seat belt use can save 17 lives over a four-year period, or about 4 lives annually. A mandatory seat belt law in Virginia would probably raise wearing rates to between 50% and 80%. At these usage levels, restraints could save 678 to 1,175 lives over four years, or 170 to 294 lives per year. Even an extremely modest increase in belt use to 25% could prevent 66 driver fatalities each year.

The second method of predicting the effects of a compulsory seat belt law is based on estimates from the National Highway Traffic Safety Administration. That agency has reported that if the national restraint usage rate had been 70% in 1979, 8,500 fewer motorists would have died.⁽¹⁷⁾ Over the years 1978 through 1981, Virginia traffic deaths comprised roughly 2% of the national total.⁽¹⁶⁾ Thus, one may estimate that 70% seat belt usage would have saved 2% of 8,500, or 170 lives throughout the Commonwealth in 1979.

Finally, other jurisdictions provide information from which one can predict the effect of a mandatory seat belt use law on Virginia's traffic death rate. One study found that in jurisdictions with compulsory seat belt laws, death rates dropped by 15% to 30%.⁽¹⁾ From 1978 to 1981, 2,167 drivers died in collisions in Virginia.⁽¹⁶⁾ A 15% to 30% reduction would have meant 325 to 650 fewer fatalities, or 81 to 163 lives saved per year. These estimated reductions may be overly conservative, since they include jurisdictions where seat belt use laws are not enforced. In Victoria, Australia, where police conscientiously issue citations to nonusers, the actual death rate is 44% less than predicted.⁽²⁾ A similar reduction in Virginia fatalities would save the lives of 238 drivers each year.

Each of the three sources used to predict death rates in the Commonwealth leaves much to be desired. Statistics drawn solely from Virginia fail to account for the fact that in jurisdictions with seat belt laws, unbelted motorists tend to be overrepresented in accidents. The 20% or 30% of drivers who refuse to buckle up even after a law is passed will be involved in a much larger percentage of collisions than belt wearers. Conversely, information gleaned from national and international sources fails to account for the safety improvements made in American cars over the past four or five years. Today, the average car in the United States is equipped with restraints which are more effective and easier to wear properly than the restraints used around the world in the 1970s. Hence, a mandatory seat belt use law in the 1980s may well reduce death rates far more than predicted.

Regardless of the deficiencies in each particular estimate, it is clear that a mandatory seat belt law will dramatically reduce highway deaths in Virginia. Three independent data bases each yielded fatality reductions involving roughly 100 to 200 lives per year. Furthermore, these estimates are for drivers only. Even if Virginia passes a restraint use law exclusively for drivers, there will be some increase in passenger belt wearing rates and, in turn, a reduction of passenger deaths.

Besides the immeasurable impact in terms of human lives, lower death rates also promise substantial monetary savings to the Commonwealth of Virginia. A 1979 study estimated that each traffic fatality costs the average state over \$12,000.⁽¹⁸⁾ Since a compulsory seat belt law would save 100 to 200 drivers' lives per year, the Commonwealth would net \$1.2 to \$2.4 million annually. This sum does not include welfare payments or vocational rehabilitation expenses often borne by Virginia, and it ignores savings from reduced passenger death rates. Moreover, these millions of dollars represent only the cost associated with fatalities. Seat belt use legislation will also prevent many serious injuries in Virginia, consequently saving the Commonwealth even further expense.⁽¹⁸⁾

Accident-Related Injury

In addition to lowering traffic deaths in Virginia, a mandatory seat belt law would significantly reduce accident-related injuries. In Australia and Canada, restraint use legislation has led to dramatic drops in the demand for emergency medical services.^(3,6) Every jurisdiction with a belt use law has reported noticeable reductions in both the number and severity of highway injuries.⁽¹⁾

Unfortunately, it is impossible to quantify the injury-related costs which may be avoided with a seat belt law; however, it is clear

that these costs are more than substantial. A 1979 study estimated that the average state spends between \$800 and \$7,000 each time a motorist is hurt, depending on the severity of the injury.(18) Another empirical survey of accidents found that seat belts are 64% effective in reducing serious injuries.(19) In 1981 alone, 31,500 unbelted drivers were injured in Virginia.(16) Although the statistics don't indicate how severe these injuries were, it is clear from the number and cost of accident-related injuries and from the proven effectiveness of restraints that Virginia would save tremendous sums of money with a mandatory seat belt law.

On the flip side of the savings issue are the costs of a mandatory seat belt law to the Commonwealth. In terms of injuries, seat belts are relatively cost-free. An unrestrained motorist is over 154 times more likely to sustain severe injuries than is a belted car occupant.(20) Opponents of compulsory seat belt use have alleged that restraints often trap people in burning or submerged cars. In fact, a restrained motorist is more likely to retain consciousness and is thus better able to escape dangerous situations.(18) In short, seat belts do not by themselves cause injuries in the vast majority of cases.

Cost-Benefit Analysis

In addition to its other benefits, a mandatory seat belt law would be extremely cost effective. The reduction in fatalities for drivers alone would save the Commonwealth one to two million dollars in direct costs. Savings resulting from fewer injuries are harder to quantify, but they could easily involve millions more dollars each year.

On the other hand, the cost of implementing a compulsory restraint use law in Virginia would be very low. The most expensive item would be the public education program. A comparable campaign, associated with the recent child restraint legislation, cost the Commonwealth only about \$44,000.(22) A similar program on seat belt use would run about \$50,000 today. The enforcement of a seat belt law would involve extremely low marginal costs. In other jurisdictions, restraint use is efficiently enforced in conjunction with other traffic law enforcement. Thus, a seat belt law requires no extra roadblocks, speed traps, arrests, or court appearances.

The Reagan Administration's emphasis on deregulation underscores the need for mandatory seat belt use legislation. In recent years, the federal government has been slow to require passive restraint systems in passenger cars. Thus, it may be many years before a viable alternative to active seat belt systems becomes available in the average American automobile. Given this state of affairs, the most efficient remedy for

highway deaths and serious injuries is a law mandating the use of available restraints. (23)

In conclusion, the toll of accident-related death and injury is too high to ignore, especially when there is readily available a means to avoid hundreds of fatalities and thousands of personal injuries each year. A mandatory restraint use law in Virginia, coupled with public education and enforcement programs, will save accident victims and their families from needless pain. In turn, the Commonwealth will recover the cost of implementation many times over.

SEAT BELT LEGISLATION

A number of seat belt bills have been enacted around the world and proposed in several American states. One well suited to Virginia was introduced in the 1983 session of the General Assembly by Delegate J. Samuel Glasscock. The text is as follows:

House Bill No. 642

Referred to the Committee on Roads and Internal Navigation

Be it enacted that the general Assembly of Virginia:

1. That the Code of Virginia is amended by adding a section numbered 46.1-309.2 as follows:

§46.1-309.2. Motor vehicle operators required to use lap belts and shoulder harnesses: penalty. -- A. The driver of every motor vehicle required to be equipped with lap belts, shoulder harnesses, combinations thereof, or similar devices shall wear such belt, harness, combination, or similar device at all times while such motor vehicle is in operation on any public highway.

B. Where any physician licensed to practice medicine in this Commonwealth or any other state determines, through accepted medical procedures, that use of such belt, harnesses, combination or similar device by a particular person would be impractical by reason of such person's weight, physical fitness or other medical reason, such person shall be exempt from the provisions of this section.

C. Any person, including persons subject to jurisdiction of juvenile and domestic relations district courts, found guilty

of violating this section shall be subject to a civil penalty in the amount of twenty-five dollars.

D. The provisions of this section shall apply to persons actually driving motor vehicles and shall not apply to passengers in such motor vehicles.

In other countries, seat belt laws apply at least to all front seat occupants and, in some cases, to all motorists.⁽¹⁾ Paragraphs A and D above limit the bill to drivers as a concession to political reality in Virginia. In fact, this limitation may have little impact on the measure's effectiveness. The average car in the Commonwealth contains only about 1.6 occupants.⁽¹²⁾ After deducting one or two tenths for occupants not covered by the law (for example, children under four) it becomes clear that relatively few people are affected by limiting the applicability of this bill to drivers. Additionally, many passengers can be expected to buckle up even though the law doesn't apply to them. In sum, these provisions make the bill more politically acceptable without greatly reducing its practical scope.

Paragraph B of the bill allows for medical exemptions. In practice, this will not be a substantial loophole in the law. The American Medical Association has stated that all motorists, including pregnant women, should wear safety belts.⁽²¹⁾ Given these clear professional standards, physicians will be unlikely to issue unwarranted exemptions.

House Bill No. 642, in paragraph C, provides a fine of \$25 for violators. This civil penalty is low enough to be enforced (in jurisdictions with severe sanctions, police refuse to issue citations).⁽¹⁾ At the same time, the inclusion of a small penalty will make the bill much more effective. In West Germany, a seat belt law with no sanctions failed to raise wearing rates to the levels attained in Canada, Australia, and Sweden.⁽¹⁾

Should Virginia enact a seat belt use law in the near future, it would be the first state in the United States to do so. Therefore, it may be advisable to exempt out-of-state motorists, as was done with the Commonwealth's recent child restraint legislation. This exemption would circumvent the legal and administrative problems involved in prosecuting drivers from other states for nonuse.

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APPENDIX

This section of the report examines some of the most recent data available on fatal automobile accidents in Virginia. The statistics cited here are taken from the 1982 Fatal Accident Reporting System (FARS) data base. A total of 677 accident-related deaths form the sample. Table A-1 breaks these deaths down according to the geographic location of the accident. Table A-2 lists the counties and cities which experienced ten or more automobile fatalities in 1982, and Figure A-1 graphically illustrates the impact of automobile fatalities and seat belt use across the Commonwealth. Table A-2 and Figure A-1 combine accident statistics for different political jurisdictions in the same geographical area. For example, the figures for Falls Church are included in those of Fairfax County. The reader may find the statistics for a given political entity by referring to Table A-2. Note that areas experiencing no traffic fatalities in 1982 have been excluded from the tables.

Tables A-1 and A-2, and Figure A-1 show by the sheer force of numbers that seat belts can save lives and that restraints are used all too infrequently. Earlier, this report estimated that 10% to 15% of Virginia's motorists used seat belts. Table A-1 indicates that less than 2% of the motorists in the FARS sample were wearing seat belts when they died. Although other factors help to account for this disparity, and despite the fact that a mandatory seat belt law will by no means end automobile fatalities altogether, the following tables offer dramatic proof that seat belts can save lives.

Table A-1

Automobile Fatalities and Safety Belt Use
(1982 Data)

| <u>County</u> | <u>Seat Belt Users Killed</u> | <u>Nonusers Killed</u> |
|---------------|-------------------------------|------------------------|
| Accomack | | 7 |
| Albemarle | 1 | 13 |
| Alleghany | | 4 |
| Amelia | | 2 |
| Amherst | | 2 |
| Appomattox | | 2 |
| Arlington | | 6 |
| Augusta | 1 | 17 |
| Bath | | 2 |
| Bedford | | 7 |
| Bland | | 1 |
| Botetourt | 1 | 6 |
| Brunswick | | 2 |
| Buchanan | | 6 |
| Buckingham | | 2 |
| Campbell | | 10 |
| Caroline | | 6 |
| Carroll | | 2 |
| Charlotte | | 2 |
| Charles City | | 3 |
| Chesterfield | 1 | 12 |
| Clarke | | 4 |
| Craig | | 4 |
| Culpeper | | 6 |
| Cumberland | | 1 |
| Dickenson | | 5 |
| Dinwiddie | | 4 |
| Essex | | 5 |
| Fairfax | 2 | 36 |
| Fauquier | | 9 |
| Floyd | | 1 |
| Fluvanna | | 1 |
| Franklin | | 3 |
| Frederick | | 6 |
| Giles | | 5 |

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Table A-1 (continued)

| <u>County</u> | <u>Seat Belt Users Killed</u> | <u>Nonusers Killed</u> |
|----------------|-------------------------------|------------------------|
| Gloucester | | 11 |
| Goochland | | 7 |
| Grayson | | 4 |
| Greene | | 0 |
| Greensville | | 12 |
| Halifax | | 2 |
| Hanover | | 12 |
| Henrico | 1 | 11 |
| Henry | | 9 |
| Highland | | 1 |
| Isle of Wight | | 1 |
| James City | | 11 |
| King and Queen | | 0 |
| King George | | 4 |
| King William | | 0 |
| Lancaster | | 1 |
| Lee | | 5 |
| Loudoun | | 7 |
| Louisa | 1 | 2 |
| Lunenburg | | 1 |
| Madison | | 3 |
| Mathews | | 1 |
| Mecklenburg | | 3 |
| Middlesex | | 1 |
| Montgomery | | 6 |
| Nelson | | 5 |
| New Kent | | 1 |
| Northampton | | 4 |
| Northumberland | | 2 |
| Nottoway | | 1 |
| Orange | | 3 |
| Page | | 1 |
| Patrick | | 2 |
| Pittsylvania | | 12 |
| Powhatan | | 3 |

Table A-1 (continued)

| <u>County</u> | <u>Seat Belt Users Killed</u> | <u>Nonusers Killed</u> |
|----------------|-------------------------------|------------------------|
| Prince Edward | | 5 |
| Prince George | | 4 |
| Prince William | | 18 |
| Pulaski | | 8 |
| Rappahannock | | 1 |
| Richmond | | 3 |
| Roanoke | 1 | 11 |
| Rockbridge | 1 | 7 |
| Rockingham | | 9 |
| Russell | | 5 |
| Scott | | 2 |
| Shenandoah | | 13 |
| Smyth | | 9 |
| Southampton | | 3 |
| Spotsylvania | | 13 |
| Stafford | | 12 |
| Surry | | 2 |
| Sussex | | 7 |
| Tazewell | | 4 |
| Warren | | 1 |
| Washington | | 9 |
| Westmoreland | | 3 |
| Wise | | 8 |
| Wythe | | 2 |
| York | | 14 |

| <u>City</u> | <u>Seat Belt Users Killed</u> | <u>Nonusers Killed</u> |
|--|-------------------------------|------------------------|
| Alexandria | | 2 |
| Bristol (in Washington County) | | 1 |
| Charlottesville (in Albemarle County) | | 2 |
| Chesapeake | 1 | 20 |
| Danville (in Pittsylvania County) | | 3 |
| Emporia (in Greensville County) | | 1 |

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Table A-1 (continued)

| <u>City</u> | <u>Seat Belt Users Killed</u> | <u>Nonusers Killed</u> |
|--|-------------------------------|------------------------|
| Falls Church (in Fairfax County) | | 1 |
| Hampton | 2 | 8 |
| Harrisonburg (in Rockingham County) | | 1 |
| Lynchburg (in Campbell County) | | 5 |
| Martinsville (in Henry County) | | 1 |
| Newport News | | 8 |
| Norfolk | | 16 |
| Petersburg | | 5 |
| Portsmouth | | 5 |
| Radford (in Montgomery County) | | 1 |
| Richmond | | 16 |
| Roanoke (in Roanoke County) | | 5 |
| Salem (in Roanoke County) | | 1 |
| Staunton (in Augusta County) | | 1 |
| Suffolk | | 11 |
| Virginia Beach | | 23 |
| Winchester (in Frederick County) | | 1 |
| Total Killed | 13 (1.95%) | 664 (98.05%) |

Table A-2

Counties/Cities With 10 or More Motorist Fatalities
(1982 Data)

| <u>County/City</u> | <u>Total Killed</u> | <u>Not Wearing Seat Belts</u> | <u>Wearing Seat Belts</u> |
|---|---------------------|-----------------------------------|-------------------------------|
| 1. Fairfax County (includes Falls Church) | 39 | 37 | 2 |
| 2. Virginia Beach | 23 | 23 | 0 |
| 3. Chesapeake | 21 | 20 | 1 |
| 4. Augusta (includes Staunton) | 18 | 18 | 1 |
| 5. Prince William | 18 | 18 | 0 |
| 6. Roanoke (includes Salem and Roanoke City) | 18 | 17 | 1 |
| 7. Albemarle (includes Charlottesville) | 16 | 15 | 1 |
| 8. Norfolk | 16 | 16 | 0 |
| 9. Richmond (City) | 16 | 16 | 0 |
| 10. Campbell (includes Lynchburg) | 15 | 15 | 0 |
| 11. Pittsylvania (includes Danville) | 15 | 15 | 0 |
| 12. York | 14 | 14 | 0 |
| 13. Chesterfield | 13 | 12 | 1 |
| 14. Greenville (includes Emporia) | 13 | 13 | 0 |
| 15. Shenandoah | 13 | 13 | 0 |
| 16. Spotsylvania | 13 | 13 | 0 |
| 17. Hanover | 12 | 12 | 0 |

Table A-2 (continued)

| | <u>County/City</u> | <u>Total Killed</u> | <u>Not Wearing Seat Belts</u> | <u>Wearing Seat Belts</u> |
|-----|---------------------------------------|---------------------|-----------------------------------|-------------------------------|
| 18. | Henrico | 12 | 11 | 1 |
| 19. | Stafford | 12 | 12 | 0 |
| 20. | Gloucester | 11 | 11 | 0 |
| 21. | James City | 11 | 11 | 0 |
| 22. | Suffolk | 11 | 11 | 0 |
| 23. | Hampton | 10 | 8 | 2 |
| 24. | Henry (includes Martinsville) | 10 | 10 | 0 |
| 25. | Rockingham (includes Harrisonburg) | 10 | 10 | 0 |
| 26. | Washington (includes Bristol) | 10 | 10 | 0 |
| | Totals | 391 | 381 (97.4%) | 10 (2.6%) |

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