

THE CONSTITUTIONALITY AND EFFECTIVENESS OF LEGISLATION
REQUIRING CHILD PASSENGER RESTRAINTS

by

Daniel John Regan, Jr.
Graduate Legal Assistant

Prepared by the Virginia Highway and Transportation Research
Council Under the Sponsorship of the Virginia
Department of Transportation Safety

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

Virginia Highway & Transportation Research Council
(A Cooperative Organization Sponsored Jointly by the Virginia
Department of Highways & Transportation and
the University of Virginia)

Charlottesville, Virginia

February 1982
VHTRC 82-R34

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ABSTRACT

This report was prepared in anticipation of the Virginia General Assembly's consideration of proposals to require motorists to properly restrain their child passengers in safety devices. Three questions are discussed. First, are child restraint laws constitutional? Second, are the laws cost-effective? Third, which specific provisions tend to decrease costs and increase benefits?

Three theories which have been advanced to argue that laws on the use of child restraints are constitutional were considered. Two of these are seriously flawed, but the third rests on precedents that have acknowledged the state's power to protect those incapable of protecting themselves. This third argument, paternalism, should be sufficient to find child restraint laws constitutional.

The cost-effectiveness of child restraint legislation cannot be established empirically. The inadequacy of the literature can largely be traced to the immeasurability of the costs and benefits, and the lack of sufficient time to study the existing statutes. The two major costs imposed by child restraint legislation, enforcement costs and compliance costs, are easy to identify but hard to measure. The benefits of child restraint legislation, increased safety through increased use, are difficult to determine because it is unclear how many people will ignore the law or comply in ways that degrade the safety benefit. Moreover, any judgement on the cost-effectiveness of child restraint legislation inevitably hinges on a highly subjective evaluation of childhood death and injury. These difficulties are compounded by the fact that nine of the eleven existing laws were passed within the last year, leaving no time for careful analysis.

Although absolute measures of the costs and benefits of legislation on the use of child restraints are unavailable, some states have sought to enhance their statutes' marginal effectiveness by adding provisions that decrease costs or increase benefits. These provisions were analyzed with particular attention to the role of statutory exemptions in reducing costs and the impact of public education and monetary incentives in increasing the use of restraints. Again, there was a lack of empirical evidence, and these provisions had to be analyzed inferentially and intuitively.

In discussing the fate of child restraint legislation in Virginia, frequent reference is made to the eleven states that have passed child restraint statutes. The text of those statutes and a comparison of their various provisions appear in Appendix A.

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BACKGROUND

Next to neonatal disease, motor vehicle accidents are the leading cause of death and injury among children.⁽¹⁾ In June 1981, John Wickstead, chairman of the Virginia Motor Vehicle Conference, estimated that Virginia's traffic accidents kill 12 small children and injure at least another 1,000 annually, at an economic loss of \$10 million.⁽²⁾

Most of these losses are avoidable. Extensive research has proven that most of the deaths and injuries could be prevented by properly installing and using child restraint devices (CRDs).⁽¹⁾ The safety benefits of CRDs* are largely unrealized. The most recent study of the use of the devices in Virginia shows that only 10.3% of the state's child passengers are properly restrained.⁽³⁾

Because losses such as those cited by Wickstead are both large and, in most cases, preventable, state legislatures have considered the usefulness of requiring CRD use by law. In 1981 child passenger legislation was introduced in 39 states. Virginia passed Senate Joint Resolution #164 to request the Department of Transportation Safety to distribute materials related to CRDs, but a bill to require CRD use in Virginia, SB440, was not reported out of the Senate Transportation Committee. Since 1978 eleven states have enacted child passenger protection laws. Nine of the eleven were enacted in 1981.

The National Safety Council has made the promotion of child restraint legislation its second highest priority for 1982 (the first is retaining the 55 mph national maximum speed limit). Its concern for child passenger safety is shared by many other national groups, as well as by state and local organizations. Given this public interest, Virginia's legislature will probably have to reconsider child passenger protection in the 1982 session. This report is an attempt to briefly list the issues that will be raised during Virginia's next child restraint debate.

*Throughout this report, CRDs will be defined as devices that meet the definitions and standards contained in the Code of Federal Regulations, Vol. 49, Sec. 571.213 as amended by Federal Regulation 29,045 (1980).

In considering a proposed child restraint law, the legislature will need answers to three questions. First, is the law constitutional? Second, are child restraint laws cost-effective? Third, if a general prohibition is not cost-effective, are there statutory provisions that can tip the balance by decreasing costs or increasing benefits? The issues raised by each of these questions will be addressed in turn.

ARE CHILD RESTRAINT LAWS CONSTITUTIONAL?

The question of effectiveness, while important, should be raised only after the proposal's constitutionality has been established, because a law's effectiveness is irrelevant if the law is unconstitutional. The major constitutional issue is whether protecting child passengers is a task within the legislature's constitutionally limited authority. Child restraint legislation has been defended on three grounds. Two of these justifications, the contagion theory and the missile theory, have been seriously questioned. However, the third ground, paternalism, has been accepted by the courts in upholding child labor legislation. Paternalism is the best constitutional justification for a child restraint law. Each of these theories is discussed below.

The Contagion Theory

The contagion theory was used successfully to defend the child immunization laws. The theory noted that communicable diseases presented an enormous threat to children's health. Every unimmunized child was a potential source of epidemic. Under these circumstances, parents were denied the right to withhold immunization because of the consequences their decision might bear on the health of other children.

An analogy between childhood diseases and motor vehicle accidents is useful in dramatizing the child passenger's risk and evoking sympathy for legislation, but the analogy would probably be unpersuasive in court. To apply the contagion theory to child restraints would require one to show that failing to restrain one's own child would increase other children's risk. This connection cannot be shown, and without it the theory is unusable.

The Missile Theory

The missile theory was argued in support of the mandatory use of motorcycle helmets. Like the contagion theory, the missile

theory justified a restraint of individual freedom by showing that the unregulated behavior presented a substantial risk to others. Supporters of this theory did not deny the right to put one's own safety at risk. Instead, they argued that failing to use a helmet exposed other motorists to the danger of "secondary" accidents (accidents which occur after the initial impact) from stricken helmetless cyclists who lurch into adjacent traffic.

If one were to submit the missile theory as justification for a child restraint law, one would have to show that unrestrained children cause accidents. A restrained child could cause a "secondary" accident only if ejected after the initial impact. Such ejection has not been documented in the literature and this lack of evidence undermines the missile theory's usefulness. A more fruitful argument may be that unrestrained children cause "primary" accidents. The number of accidents caused by the distractions and mischief of unrestrained children has been described in a recent study.⁽⁴⁾ Although this finding has not been mentioned in the child restraint debates, it might be interpreted as evidence that failing to use a CRD is analogous to failing to maintain a safe vehicle: each failure not only increases the operator's risk, but also adds to the danger faced by fellow motorists. One cannot assure this argument's persuasiveness because it has never been submitted to a court.

Paternalism

The final and most compelling rationale for upholding child restraint laws is paternalism. Paternalism was best argued in support of child labor laws. The argument maintains that the state can use legislation to substitute its judgement for a guardian's in order to protect those who cannot protect themselves. The Supreme Court has upheld paternalistic laws whenever the legislature's reasoning was neither arbitrary nor capricious.

To defend child restraint legislation on paternalistic grounds, one would argue that child passengers are incapable of appreciating the dangers of unrestrained travel, and that protecting the child warrants an intrusion into parental autonomy. The state need not worry that a mandatory child restraint law might be stricken as arbitrary or capricious, for the empirical evidence on the effectiveness of child restraints is sufficient to justify the legislature's decision. Of the three theories, paternalism seems to be the firmest ground for establishing the constitutionality of child restraint legislation.

Precedent indicates that paternalism can establish that child passenger protection is a constitutionally permissible legislative

goal. Given judicial approval of the end, one may begin evaluating specific proposals. This section will first identify the costs society will bear under a child restraint law. These costs fall into two categories: enforcement costs and compliance costs. After discussing the costs, the benefits of child passenger protection will be examined. Many of the compliance costs cannot be quantified, and the benefits of child restraint ultimately depend on a subjective valuation of children's suffering and death. One cannot weigh those costs and benefits and arrive at an objectively conclusive answer. The differences among the existing child restraint laws prove that there is no irrefutably correct path. An objective inquiry can only attempt to inform legislators by identifying the relevant issues.

THE COSTS OF CHILD RESTRAINT LEGISLATION

Enforcement Costs

Legal authorities have consistently testified that child restraint legislation does not involve significant increases in enforcement costs. This statement is based on the assumption that officers would issue citations under the child restraint statute only when the vehicle was already stopped for some other reason or when children were obviously unrestrained. Officers would not stop vehicles solely to determine whether children were restrained. One argument suggests that current estimates of enforcement costs would rise if the law applied only to parents transporting their own children. Although children are most often transported by their parents, an officer would lack probable cause to cite if the driver denied being the parent and there was no clear contrary evidence. This argument should be discounted to the extent that one believes that parents will either be genuinely honest or simply unaware of the loophole. Further, one may contend that citations are not always necessary if threatened punishment deters future disobedience.

Compliance Costs

If the legislature passes a child restraint law, state and local governments would bear the cost of enforcing the law against violators. People who comply with the new law would also bear a cost. Their compliance cost is measured by the time and money they would need to spend to adapt their old behavior to new requirements. Individual circumstances determine compliance costs, and these costs would not fall evenly upon everyone.

At present, no one has attempted to measure rigorously the compliance costs of child restraint use. Even if this measure were available, there are no objective criteria for determining whose compliance costs are excessive. The eleven states with child restraint laws have reached different judgements about whose circumstances warrant partial or complete exemption. Each state's judgements were subjective, yet all were reasonable. The courts have recognized that such subjective judgements are reasonable and necessary. To pass judicial muster, a state legislature need only show that the exemptions are based on a reasonably conceivable set of facts. Empirical justifications are not required.

Eleven states have passed child restraint laws, and each state has also passed a series of exemptions. The exemptions can be grouped into four categories. The first set centers around characteristics of the child passenger. States have based exemptions on the child's age and weight, and some statutes recognize a child's dependency by granting an exemption when the child's "personal needs" are being satisfied. The second set of exemptions provide that some drivers do not have to restrain their child passengers. These exemptions stress either the relationship between the driver and the state or the relationship between the driver and the child. The third group is based upon characteristics of the vehicle. Some of these exemptions emphasize a design quality such as capacity, while others stress legal qualities such as ownership. The fourth group of exemptions concern what precautions will be considered legally permissible substitutes for CRDs. Exemptions have been granted for children occupying certain areas of a vehicle and for use of safeguards that are not CRDs. Each group of exemptions will be discussed in greater detail later.

THE BENEFITS OF CHILD RESTRAINT LEGISLATION

The benefits of child restraint legislation can be measured by only one barometer: its effect on the CRD use rate. If the law makes people start using restraints, or makes people who misuse restraints use them properly, the law is a success. If the law does not elicit these effects, it is a failure.

The current rate of child restraint use has been difficult to derive because of methodological differences among various use surveys. In 1977, Stoke observed a use rate in Virginia of 10.3%.⁽³⁾ (For the use rate estimates derived in other studies, see Appendix B.)

Child restraint legislation would be 100% effective if every nonuser suddenly switched to full and proper use, and if every case of improper use was fully corrected. This result is unrealistic. The actual benefits will reflect people's tendency to avoid use or to avoid inconvenience by using the devices in ways that degrade their effectiveness. Passing the law will not guarantee that restraints will be purchased, that purchased restraints will be installed, that installed restraints will be installed properly, that properly installed restraints will be used, that the restraints that are used will be used properly, or that properly used restraints will be properly used every time. Each of these forms of nonuse and misuse reduces the actual benefits realized by a child restraint law. The president of the Insurance Institute for Highway Safety has stated that passing a child restraint law would actually raise the use rate by 10 to 15 percentage points.⁽⁵⁾ To derive the maximum benefits possible, a legislature must first identify the causes of nonuse and misuse, and must then take appropriate countermeasures.

HOW CAN ONE ENHANCE THE COST-EFFECTIVENESS OF CHILD RESTRAINT LEGISLATION?

Assume that the General Assembly, through an intuitive and largely political process, concludes that the costs imposed by mandating child restraint exceed the safety benefits. This conclusion does not necessarily mean that no statute should be enacted. Rather, it forces the proponents of child restraint to suggest statutory provisions that will reduce costs and increase benefits. By including these provisions, proponents can make a child restraint proposal more palatable to the legislature.

Costs can be reduced by exempting groups that would bear particularly large compliance costs. The greater the compliance cost, the greater the cost reduction that can be realized through an exemption. Benefits can be increased by coupling the statute with programs of public education or by creating monetary incentives that reward restraint use or penalize nonuse. Each type of provision merits attention.

Cost-Reducing Provisions: Exemptions

The purpose of an exemption is to reduce costs without undermining the overall purpose of child protection. To effectively achieve this purpose, an exemption must be unambiguous and ascertainable. If an exemption is vaguely phrased, groups that believe

that they should have been exempted will ask the courts to sharpen the language. Costly adjudication of these disputes conflicts with the original purpose of the exemption. Even if an exemption is perfectly clear, it may be impossible to apply. If patrolmen cannot easily determine whether a suspect belongs to an exempt group, violators have every incentive to falsely claim exemption. Officers will either have to determine the validity of the motorists' claims or they will have to release their suspects. The first alternative increases enforcement costs by requiring investigation of the claims, and the second option incurs an enforcement cost in worthless pursuits. Also, for every violator who successfully claims an unascertainable exemption, the number of unprotected children increases. One can assume that proponents of child restraint will want the fewest and narrowest exceptions possible.

The existing exemptions can be grouped into four categories: those relating to children, those relating to motorists, those related to vehicles, and those related to devices. In each category, some exemptions fulfill their purpose better than others.

Exemptions of Children

Since CRDs are designed and tested for specific body weights, exemptions for oversized children seem appropriate. However, a weight-based exemption is impractical because a child's weight is variable and subject to manipulation. The states have adopted age-based exemptions as a practical means of deciding which children must be restrained.

Reasonable minds may differ over the age at which children outgrow the CRDs, but children beyond that age should be exempted if the statute is solely intended to mandate CRD use. The consensus among the states is that children outgrow their CRDs at age four or five. The original draft of Rhode Island's statute also used age four, but the final statute uses age three. All of these exemptions seem reasonable. North Carolina's statute takes the extreme position of exempting all children over two years of age. Further, it permits seat belt use for children over one. Although North Carolina's age provision is above judicial reproach, it is so broad that perhaps it frustrates the statute's purpose. North Carolina's age provision is the only one that seems undesirable.

Exemptions that permit necessary child care seem reasonable, particularly because such exemptions would apply for only a few moments out of any trip. However, North Carolina's statute, which simply exempts all care that satisfies "personal needs," can be

criticized for vagueness. A parent would be tempted to stretch the exemption to include reducing a child's discomfort as soon as the child started crying and struggling against the restraint. The exemption could be made more clear by explicitly describing the types of care that warrant unfastening the restraint. While North Carolina's language is too broad, Michigan's is too narrow. Michigan law grants an exemption for when a child is being nursed but it does not recognize other care, such as changing, that might require unfastening the restraint. The best way to write a child care exemption would be to completely and explicitly list the types of care that warrant removing the restraint.

Exemptions for Drivers

The next group of exemptions proclaim that certain drivers do not have to restrain their child passengers. The existing statutes demonstrate the legislative principle of balancing the size of the exemptions against the severity of the punishment. Although this principle is fundamentally sound (it is most clearly illustrated by the statutory distinctions between the different degrees of murder and manslaughter), states are by no means obliged to follow it. New York passed a relatively tough, broad law while Kansas passed a relatively lenient, narrow one. Politics determine the scope of these exemptions, but however the statute is written, membership in an exempted class should still be clearly defined and easily ascertainable.

Of the six states that exempt some drivers from their child restraint laws, only West Virginia can be criticized for using ambiguous language. West Virginia exempts all those who do not "regularly or customarily" transport the unrestrained child. Clearly, the point at which occasional transportation becomes regular or customary is debatable. The other five states use straightforward criteria: parenthood or residency. Either one is the child's parent, or one is not. Either one's vehicle is registered in the state, or it is not. Either one's driver's license is issued by that state, or it is not. The two criteria are equally unambiguous.

The difference between exemptions based on parenthood and exemptions based on residency lies in their ascertainability. It is harder to determine whether the driver is the child's parent than it is to determine whether the driver or vehicle is registered with the state. This difference translates into increased enforcement costs as patrolmen try to determine who has a valid claim of exemption. More violators will falsely claim exemption if the penalty is severe than if it is minor; therefore, the added costliness of a parents-only law increases with the severity of the punishment.

Exemptions for Vehicles

The third group of exemptions permit unrestrained travel in certain vehicles. Generally, the exemptions cover two classes of vehicles: those operated for hire and those that are not required to have seat belts. The law provides specific definitions for each of these two classes. Virginia law requires that vehicles operated for hire be registered with the State Corporation Commission, and federal regulations specify which vehicles need not have seat belts. Further, it is easy to determine whether a vehicle belongs to one of the exempt classes, either by checking the registration sticker or by referring to the federal regulation. These two exemptions are equally clear and ascertainable, yet they have widely different political consequences.

The vast majority of passenger vehicles operated for hire are taxicabs. Virginia law distinguishes rented vehicles from taxicabs by classifying rented cars as vehicles operated for rent. As a rule, taxicabs are used by out-of-towners to carry them over short distances. Given this characterization, requiring taxicab riders to use CRDs has several consequences. Such a rider would have to carry a device with him when he travelled, and once he reached his destination, he would have to install it before each trip and remove it afterwards. The inconvenience of carrying, installing, and removing the CRD would lead to shoddy installment and improper use, particularly when the trips are as short as the average taxicab ride and the traveller is being charged a waiting fee while he installs and disconnects the device. Consequently, a state legislature may conclude that child safety is better served by having the CRD firmly anchored in the car at home than having it carried and shifted into taxicabs.

If children rarely ride in taxicabs, an exemption for vehicles operated for hire would have minimal impact on child safety. The same cannot be said of an exemption for vehicles without seat belts. Among noncommercial vehicles, the only seating positions where belts are not required are on school buses and motorcycles, and in the cargo areas of recreational vehicles, station wagons, small trucks, and vans.⁽⁶⁾ Although it is expensive to adapt these vehicles for CRDs, the real issue raised by this exemption is not the compliance cost, but whether children should be allowed to ride in these positions under any circumstances. According to the 1981 Virginia Crash Facts, motorcycles are more likely to be involved in a fatal crash than passenger cars. Cargo areas also present significant hazards of ejection or collision with cargo and interior surfaces. It would be inconsistent to pass a child protection statute that exempted the most dangerous forms of travel. This blanket exemption should not be granted.

Even though a blanket exemption is unwarranted, a legislature might reasonably permit unrestrained travel in some vehicles that do not have seat belts. The Crash Facts show that motor homes and school buses are rarely involved in fatal accidents. Their superior safety record is at least partly due to special safety equipment that these vehicles are required to carry. Perhaps in light of their demonstrated safety the owners of school buses and motor homes should be spared the expense of adapting their vehicles to CRD use.

California, Kansas, Massachusetts, and North Carolina recognize an exemption when seat belts are unavailable in the vehicle. Assuming that the vehicle is equipped with seat belts, the only way the belts would become unavailable would be if the vehicle is occupied to capacity. The value of the exemption turns on how the statute defines capacity. For each type of vehicle, the manufacturer specifies how many passengers the vehicle was designed to hold. If the statute used this specification to define capacity, then the ground for exemption would be clearly defined. Further, the question of whether a vehicle is loaded to capacity would be easily ascertained. On the other hand, if the statute relied upon a less rigorous standard, the problems of vagueness and unascertainability would resurface.

Exemptions for Substitute Devices

The final group of exemptions provide that, under certain circumstances, CRDs can be replaced by other means of restraint. The only safe alternatives to CRDs are seat belts. The "car seats" that were used widely in the sixties and earlier had no safety purpose and were simply designed to provide a good view. Tennessee originally held that travelling in a passenger's lap was an adequate substitute, but studies have shown the contrary. In fact, crash simulations have shown that on-lap travel is more dangerous than unrestrained travel.⁽⁴⁾ Other tests have proved that limiting unrestrained travel to the back seat does little to prevent deaths and injuries.

In protecting children, seat belts are not as effective as CRDs, but they are surely safer than using no restraints at all. Moreover, since seat belts are standard equipment they are more convenient to use. A child must be able to sit up before he can use a seat belt properly, but for older children, a legislature may conclude that the practical benefits of permitting a convenient type of restraint may outweigh the technical superiority of CRDs. There is no empirical evidence to support this conclusion, yet there is none to dispute it.

Determining the age at which children can sit up and use seat belts is like determining the age at which they outgrow their CRDs. There is no single definitive answer, but a range of reasonable values from which a legislature may choose. With the exceptions of Massachusetts and West Virginia, every state that permits seat belts has selected the age of one year. Since this type of exemption is intended to permit the use of convenient forms of restraint, the choice of one year is particularly appropriate. At age one, children begin to outgrow the special types of CRDs designed for infants. By granting the exemption at age one, the option of using seat belts arises just as one is faced with the expense of buying a larger CRD.

Massachusetts permits seat belt use for all children less than five years of age. Because a child must be able to sit up before he can use a seat belt, this language has the effect of requiring CRDs for infants.

West Virginia allows seat belts to restrain children three and older. This option is ill-timed because the purchase of a second CRD cannot be avoided. If the purpose of the option is to permit the use of a convenient alternative to the CRD, granting the option at age three is a poor choice.

Whether a state independently certifies CRDs or merely recognizes the federally approved devices, the distinction between permissible and impermissible devices should be clear. Perhaps acceptable devices should bear a seal of certification. The seals would clearly define what devices are acceptable, and they also would make it easy to ascertain whether an approved device is being used.

One final comment on certification bears mention. Unless the state government feels a pressing need to review the National Highway Transportation Safety Administration's examination of CRDs, it would seem prudent to save the cost of further testing by simply certifying all NHTSA-approved devices.

Provisions That Increase Benefits

In analyzing the reasonableness of the various exemptions to the existing child restraint laws, many of the conclusions are based on intuition and inference. Hard empirical evidence on the effectiveness of these exemptions in reducing compliance and enforcement costs simply does not exist. The literature describing the increased benefits of various child restraint programs is equally uninformative. This report will begin its analysis by

identifying the causes of CRD nonuse and misuse. Then specific proposals will be evaluated for their ability to counteract these causes and promote use.

Every form of nonuse and misuse can be traced to combination of three causes: ignorance, costliness, and inconvenience. Many motorists who forego use do not appreciate their chances of becoming involved in an accident, the consequences such an accident would hold for their child passengers, or the safety-effectiveness of CRDs. Some people justify nonuse or misuse by claiming that the cost of the device itself or the installation cost is more than they can afford. Finally, as has been described throughout the discussion of exemptions, some people will fail to use CRDs because of personal inconvenience.

Each of these causes can be addressed by public policy. Ignorance can be remedied by education, costliness by subsidy, and inconvenience by exemption. Even among the states that have not passed child restraint statutes, many have tried to foster use by passing laws and resolutions to educate and subsidize the non-using public. The use of exemptions to relieve cases of extreme inconvenience has already been discussed. Education and subsidization can be seen as ways to encourage CRD use. Child safety can also be promoted by punishing nonuse. Some child restraint statutes impose fines to punish nonusers, others use the subtler means of requiring motorists to bear the insurance and medical costs of treating and compensating their child passengers. Each of these policies can be included in a coordinated legislative approach toward improving child passenger safety. This report will now describe and evaluate specific policies.

Public Education Programs

Government agencies and public service organizations have implemented many measures to educate the public about the dangers of unrestrained travel. Messages have appeared on radio and television, civic organizations have presented CRD information to community groups, pediatricians and obstetricians have made organized efforts to advise their patients, volunteers have demonstrated CRDs in maternity wards, and devices have been placed in hospital gift shops. Studies have shown that these measures do stimulate use for a brief period, but that their effect wanes within a few months. The audience eventually regresses to their old patterns of nonuse.

The ineffectiveness of public education programs can be traced to the theory of bounded rationality. The theory holds that the human mind cannot meaningfully comprehend probabilities below a threshold level. Probabilities below this level (estimated at one in one thousand),⁽⁷⁾ are not incorporated into the reasoning

process; rather, the mind rejects the unlikely possibility and proceeds as if the outcome could not possibly happen. The odds of having an automobile accident during a single trip approaches this threshold. No matter how large the potential loss from a traffic accident, the mind will not accept the fact that an accident might happen. This theory was originally proposed to explain why adults do not use seat belts, but also explains why adults do not use CRDs.

Despite the general ineffectiveness of public education programs, four states — California, Kansas, Maine and North Carolina — explicitly include educational programs in their child restraint statutes.

Encouraging Use: Subsidization and Tax Policy

Poverty affects CRD use. However, since used CRDs can be purchased for about \$10, few people can legitimately claim that they cannot afford the device. For these few, direct aid may be the most effective policy. Direct aid often takes the form of loan programs. Many proposals urge that the restraints be lent without charge, but one study indicates that imposing a small, refundable fee instills pride in the recipient and leads to better use and maintenance of the device. The cost of direct aid must include breakage and thievery, as well as the cost of administering the program, but the project could be partially funded through the fines imposed on nonusers.

A separate policy problem is raised by the cost of installing a CRD. The safety effectiveness of many of the devices is severely degraded if a tether strap, located at the top of the back of the restraint, is not anchored to the vehicle. If the restraint is in the front seat, the tether strap can be fixed to a rear seat belt, but if the restraint is in the back seat, or if the back seats are occupied, the tether strap must be attached to a bolt that protrudes from the vehicle frame. Ordering bolts for a new vehicle or welding them into an old vehicle can be expensive, and motorists are tempted to save the expense by foregoing the bolts and misusing the device. Tax policy may be used to help address this problem. Although none of the eleven existing child restraint laws have included a tax deduction for the expense of acquiring and installing the device, such a policy would decrease the cost of proper use.

In an economically perfect world, the state would not need to use tax policy to subsidize child restraint use, for the cost of the device would be compensated by reductions in automobile

insurance rates. Purchasers of passive restraints have enjoyed this type of insurance reduction, but CRD users would probably not receive a similar benefit. From the insurer's standpoint, the difference between passive restraints and CRDs is the degree to which purchasing the device assures a reduction in possible loss. The insurer can be fairly certain that passive restraints will be used, and that they will be used in the way that provides increased safety. However, the evidence on CRD use indicates that many installed devices are misused or unused. The policyholder cannot adequately assure the insurer that he will faithfully and properly use the device, and without this assurance insurance rates will not decrease.

Penalizing Nonuse: Fines and Civil Liability

Direct aid and tax reductions promote CRD use by reducing the cost of compliance. The reduction in costs can be justified as a reward to people who are willing to use CRDs. Use can also be promoted by increasing the cost of refusing to comply. This cost can be justified as a penalty to be paid by people who are unwilling to use CRDs. The penalty can take the form of traffic fines or civil liabilities.

The child restraint statutes of Massachusetts, Michigan, New York, North Carolina, Rhode Island, Tennessee, and West Virginia impose fines on those who are cited for failing to use a child restraint. The fines range from a minimum of \$2 in Tennessee to a maximum of \$25 in Massachusetts and New York. (The Massachusetts, New York and Michigan statutes do not set minimum fines, and the Rhode Island statute does not set a maximum.) A fine's deterrence value can be measured by two factors: the size of the penalty and the certainty of detection. Since the fines for nonuse are small, their effectiveness must spring from rigorous enforcement. If a used CRD costs \$10 and the fine for nonuse is \$5, a motorist would find it cheaper to forego restraint if he believes that he will not be cited more than twice. Rigorous enforcement may increase use, but such enforcement has costs of its own. No study has determined the proper balance between the enforcement costs and the safety benefits.

Massachusetts, Michigan, New York, Rhode Island, and West Virginia provide that the fine for nonuse will be waived if the violator proves that he has purchased an approved CRD. The waiver gives a violator a chance to avoid a citation, and it furthers CRD use by getting some nonusers to purchase CRDs.

Instead of assigning and enforcing fines, a state might punish nonusers by holding that they are statutorily liable for their child passenger's injuries. In legal terms, nonuse would be defined as negligence per se, and the nonuser would be liable regardless of who caused the accident. By assigning liability in this manner, the nonuser would be forced to bear the medical costs of treating the child, or more likely, whatever extra insurance costs were needed to defray the liability.

There are two reasons to believe that assigning tort liability to nonusers would not lead to an increase in CRD use. First, as was revealed in the discussion of bounded rationality, the consequences of an accident are irrelevant if the likelihood of an accident is incomprehensibly remote. Under the theory, the child's medical expenses would be just another cost ignored by the motorist who acts as if an accident could never happen. The second reason is more complex. Recall that CRD users cannot enjoy reduced insurance rates because they cannot prove that the restraints will be used. The effect of a negligence per se rule would be to raise every operator's automobile insurance rate according to the amount of time spent transporting children. Since the insurance company is unable to distinguish between users and nonusers, each group will face the same increase. Users will pay the same premiums as nonusers, and they will also bear the cost of acquiring the CRD. A negligence per se rule thus makes it cheaper to forego CRDs than to use them, and thus works to the detriment of child passenger protection. These reasons have been recognized in Kansas, Massachusetts, North Carolina, and West Virginia, where the child restraint statutes explicitly provide that nonuse shall not constitute negligence per se.

Viewed individually, the policies to promote use and discourage nonuse through public education and financial incentives have not been notably successful. Proponents of these programs argue that the shortcomings stem from underfunding and from the absence of a coordinated plan to use all programs in a unified effort to promote use. Neither massive funding nor program coordination has ever been attempted, so this contention is untested.

CONCLUSION

In deciding whether to pass a child restraint statute, a state legislature must address three fundamental questions. First, it must determine whether it has the constitutional authority to pass such a law. Second, it must decide that it should pass a law. Third, it must choose the provisions that will appear in the law. Within the limits of the existing literature, this report has attempted to answer these three questions.

Based upon the theory of paternalism, one can conclude that state legislatures possess the authority to mandate child restraint use. This conclusion cannot be stated with absolute certainty, for there is no case law on the constitutionality of child restraint legislation; however, the analogy between child restraint statutes and child labor laws is strong, and the latter have survived judicial scrutiny.

Given that the state has the power to enact child restraint laws, the next question is whether that power should be exercised. This question can be approached empirically or politically. Although one can theorize about what specific costs and benefits would flow from passing a child restraint statute, there have been few attempts to quantify these items. Many variables are difficult to measure and some can only be subjectively evaluated. Further, there have been no studies on marginal effects of public policies (e.g., how much would the use rate increase if a statute were added to an existing program of public education?). The inadequacy of current empirical data has prompted three states — California, Maine, and North Carolina — to provide for state-sponsored studies of the costs and benefits of their child restraint laws. The existing empirical data firmly document but two facts: CRDs are effective in reducing injury, and CRDs are currently used by a small portion of the motoring public.

From a political perspective, the facts are much clearer. No one has an economic interest in keeping child passengers unrestrained but there are a large number of groups, including the National Safety Council, who strongly support legislation. Politically, there is little to be gained by opposing the protection of small children, and it seems reasonable that a legislator would support a proposed child restraint law if only to placate supporters.

After determining that the state has the power to pass a child restraint law and that passing such a law is desirable, the only remaining question is to decide upon specific provisions. If the sole purpose of the statute were to placate supporters, the legislation could provide for little enforcement and for exemptions so broad that the law applied to few people other than the proponents themselves. However, supporters of restraint legislation see the law as a means of promoting child passenger safety, and they will argue for rigorous enforcement and few exceptions. Like the statute itself, exemptions can be granted on either empirical or political grounds. Because the eleven existing child restraint laws are so new (nine of the eleven were passed in 1981), there has been little time to evaluate specific provisions. A few provisions, such as exemptions for motorcycle travel, are obviously dangerous, but most exemptions are attempts to excuse groups for

whom compliance is especially costly. The difference among the eleven statutes shows that there is no empirical consensus on the proper scope of exemptions. The only empirical requirements for well-drafted exemptions are that they be clear and easily ascertainable.

The political system might provide a means for determining which exemptions should be granted. Groups that would bear particularly high compliance costs would make their feelings known as the legislation was considered. This is obviously an imperfect process, but, in the absence of reliable empirical information, it may be the next best means of enacting exemptions.

Finally, the child restraint statute itself may be bolstered by related programs of education, direct aid, subsidies, fines, and liabilities. These programs may be adopted in any combination or they may be implemented separately. The empirical information indicates that these programs are largely ineffective, but on the other hand they have never been joined in a coherent, well-funded campaign to increase use. The fate of these related programs may once again hinge on political, rather than empirical, considerations.

REFERENCES

1. Williams, Alan F., and Zador, P., "Injuries to Children in Automobiles in Relation to Seating Position and Restraint Use," Accident Analysis and Prevention, vol. 9, (1977).
2. Wickstead, John, letter from the chairman of the Virginia Motor Vehicle Conference to the members of the Virginia Motor Vehicle Conference, June 1, 1981.
3. Stoke, C. B., Seat Belt and Shoulder Strap Use Among Urban Travellers, published by the Virginia Highway and Transportation Research Council, VHTRC 77-R35, (January 1977).
4. University of North Carolina Research Center, "Police Confirm Unrestrained Children Cause Accidents," The Accident Reporter, March-August (1981).
5. Haddon, W., Jr., Statement before the Subcommittee on Oversight and Investigation of the House Committee on Interstate and Foreign Commerce Hearings on Practices and Systems of Infant and Child Automotive Restraints, May 7, 1979.
6. Code of Federal Regulations, vol. 49, Sec. 571.208, particularly Standards S3, S4.1.2.2, S4.2.1, S4.2.1.2, S4.2.2, S4.3, S4.3.2, S4.4 and S4.4.2 (effective September 1, 1981).
7. Arnould, R. J., and Grabowski, H., "Seat Belt Utilization: An Analysis of Market Failure," Bell Journal of Economics, (Spring 1981).
8. Grimm, A. C., "Use of Restraint System: A Review of the Literature," the HSRI Research Review, vol. 11, nos. 2 & 3 (Sept./Oct.-Nov./Dec. 1980). Published by the University of Michigan Highway Safety Research Institute.

APPENDIX A

EXISTING CHILD RESTRAINT LAWS BY STATE

California Vehicle Code

§23751(b) Within one year after commencement of the public education program..., the secretary [of the Business and Transportation Agency] shall enter into an arrangement with appropriate law enforcement agencies to issue, at their discretion, an oral hazard warning to any person who operates any motor vehicle, ..., if, after the vehicle has been stopped, the law enforcement officer observes that an infant or child under 15 years of age is a passenger and is not restrained by use of an available seat restraint. Such law enforcement officers may also advise and urge the utilization of seat restraints that are available in the vehicle, and may further note that, for children under five years of age, even greater protection could be provided by acquiring and property utilizing a separate federally approved child restraint.

Kansas House Bill No. 2208

- §2 ...[E]very parent or legal guardian of a child under the age of two years who resides in this state, and who is transporting such child in the front seat area of a passenger car... on a highway..., shall provide for the protection of such child by properly using a child passenger safety restraining system of a type approved under this act. This act shall not apply to transportation of children in vehicles registered in another state, nor to transportation in a temporary substitute vehicle.
- §3 A law enforcement officer shall issue an oral warning to any parent or legal guardian of a child under the age of two years who violates section 2, and the parent or legal guardian shall be provided information about child passenger safety which encourages the use of safety restraining systems.
- §4 Failure to employ a child restraint system shall not constitute negligence per se.

Maine Revised Statutes Annotated - Volume 29

§1368-B (1)

The [C]ommissioner [of public safety] shall ... enter into an arrangement with appropriate law enforcement

agencies to issue, at their discretion, oral or written safety information to any person who operates a motor vehicle, . . . , if, after the vehicle has been stopped, the law enforcement officer observes that a child under 4 years of age is a passenger and is not restrained by use of an available seat restraint. The law enforcement officers may also advise and urge the utilization of seat restraints that are available in the vehicle, and may further note that even greater protection could be provided by acquiring and properly utilizing separate federally-approved child seats.

Massachusetts Acts and Resolves (1981) Chapter 680

§1. Section 1 of chapter 90 of the General Laws is hereby amended by inserting . . . the following definition: -

"Child passenger restraint", a device manufactured for the purpose of transporting children under five years of age in a motor vehicle equipped with seat belts in accordance with the provisions of federal laws and regulations, and approved by the United States Department of Transportation pursuant to Federal Motor Vehicle Safety Standard, inserted by section 4 of chapter 761 of the acts of 1979, Number 213.

§2. Said chapter 90 is hereby further amended by inserting the following section:-

Section 7AA. No child less than five years of age shall ride as a passenger in said motor vehicle on any way unless said child is wearing a safety belt which is properly adjusted and fastened or unless such child is properly fastened and secured by a child passenger restraint as defined in section one.

The provisions of this section shall not apply to any such child who is: (1) riding as a passenger in a motor vehicle in which all seating positions equipped with safety belts or child passenger restraints are occupied by other passengers who are using said restraints; (2) riding as a passenger in a motor vehicle used to transport passengers for hire; (3) riding as a passenger in a motor vehicle not equipped with safety belts; (4) physically unable to use safety belts or child passenger restraints. Any operator of a motor vehicle who violates the provisions of this section

shall be subject to a fine of not more than twenty-five dollars; provided, however, that such fine may be waived if the court is satisfied that the defendant has purchased a child passenger restraint as defined in section one.

A violation of this section shall not be used as evidence of contributory negligence in any civil action.

Compiled Laws of Michigan (1970) §257.907

§710d

- (1) ...[E]ach driver transporting a child in a motor vehicle shall properly secure each child in a child restraint system as follows:
 - (a) Any child less than one year of age in a federally approved child restraint system. ...
 - (b) Any child 1 year of age or more but less than 4 years of age, when transported in the front seat, in a [federally approved] child restraint system....
 - (c) Any child 1 year of age or more but less than 4 years of age, when transported in the rear seat, in a [federally approved] child restraint system..., unless the child is secured by a safety belt provided in the motor vehicle.
- (2) [Part 1] does not apply to a nonresident driver transporting a child in this state or to any child being nursed.
- (3) [Part 1] does not apply if the motor vehicle is ... not required to be equipped with safety belts....
- (4) A person who violates this section is responsible for a civil infraction.
- (5) Points shall not be assessed ... for a violation of this section.
- (6) The secretary of state may exempt ..., a class of children from the requirements of this section, if the secretary of state determines that the use of the child restraint system required under part (1) is impractical because of physical unfitness, medical problem, or body size. The secretary of state may specify alternate means of protection for children exempted herein. ...

§907(2) ... For a violation of section 710d, the civil fine ordered ... shall not exceed \$10.00.

(12) The court shall waive any civil fine or cost against a person who received a civil infraction citation for a violation of section 710d if the person, before the appearance date on the citation, supplies the court with evidence of the acquisition, purchase, or rental of a child seating system meeting the requirements of section 710d.

Minnesota Statutes 1980

§169.685 Subdivision 4. Proof of the use or failure to use a . . . child passenger restraint system . . . shall not be admissible in evidence in any litigation involving personal injuries or property damage resulting from the use or operation of any motor vehicle.

Subdivision 5. Every parent or legal guardian of a child under the age of four years residing in this state, when transporting the child on the streets or highways of this state in a motor vehicle owned by the parent or guardian, shall equip and install for use in the motor vehicle, according to the manufacturer's instructions, a child passenger restraint system meeting federal motor vehicle safety standards. A parent or guardian who violates this subsection shall be given a hazard warning by the state highway patrol or local law enforcement officer as to the possible danger to children due to the failure to equip and install for use in the motor vehicle a child passenger restraint The warning shall also advise and urge that parent or guardian to utilize child passenger restraint systems that are available in the vehicle. No other penalty shall be assessed against a parent or guardian for a violation of this section.

New York Vehicle and Traffic Law

§1229-C.

1. No person shall operate a passenger motor vehicle registered in this state, nor shall the owner thereof knowingly permit a passenger motor vehicle to be operated unless each passenger of such vehicle under the age of five is restrained in a specially designed detachable or removable seat which meets the [f]ederal . . . standards . . .

2. . . . [T]he term "passenger motor vehicle" shall include all motor vehicles registered or capable of being registered. . . . except . . . school buses. . . .

3. A violation of the provisions of this section shall be punishable by a civil fine of not more than twenty-five dollars.

4. The court shall waive any fine for which a person who violates the provisions of this section would be liable if such person supplies the court with proof that he has purchased or rented a child seating system . . . on or before the appearance date for such violation.

North Carolina General Statutes Chapter 20 (pursuant to House Bill 893)

§20-137.1

Every driver required to have a North Carolina driver's license who is transporting his own child of less than two years of age, when the driver is operating his own motor vehicle (or a family purpose vehicle), shall have such child properly secured in a child restraint system which is of a type (and which is installed in a manner) approved by the Commissioner of Motor Vehicles. Provided, however, this section shall not apply unless such child is occupying a seating position where seat safety belts are not required by federal law or regulation. The requirements of this section may be met when the child is one year of age or older by securing the child in a seat safety belt.

The provisions of this section shall not apply: (1) to vehicles registered in another state or jurisdiction; (2) to ambulances and other emergency vehicles; (3) when the child's personal needs are being attended to; or (4) if all seating positions equipped with child passenger restraint systems or seat safety belts are occupied.

Any person violating this act during the period from July 1, 1982, to June 30, 1984, shall be given a warning ticket only. Thereafter a fine of ten dollars (\$10.00) will be levied against violators. No driver license points shall be assessed. . . .

A violation of this act shall not constitute negligence per se or contributory negligence per se.

Rhode Island: Chapter 31-22 of the General Laws

§31-22-22. Any person transporting a child three (3) years of age or under in the front or back seat of a motor vehicle operated on the roadways, streets or highways of this state, will provide for the protection of the child and properly use a child passenger restraint system that has federal approval, provided that in no event shall failure to wear a child passenger restraint system be considered contributory negligence, nor such failure to wear said child passenger restraint system be admissible as evidence in the trial of any civil action.

Comparison of Specific Statutory Provisions

Exemptions for Children

Since January 1, 1981, all CRDs must meet federal safety standards. These standards require that the CRD provide specified levels of protection for children weighing up to 50 pounds. Weight is a useful standard for measuring CRD safety, but Michigan is the only state to grant an exemption for excessive body size. It is unclear why weight is not used more often. Perhaps it is because weight fluctuates subject to biological and parental influences. Instead of weight, states have used an arbitrary and legalistic substitute, age, in drawing exemptions. Age cannot be influenced as weight can and is easily determined by reference to public records. Among the states with child restraint laws, the majority have determined that an age standard of four or five is equivalent to the design standard of 50 pounds. Maine, Michigan, Minnesota, and Tennessee require restraints for children four and under, while Massachusetts, New York and West Virginia extend the requirement to include five-year-olds.

California's child restraint law reaches children up to 15 years of age, but it also concludes that CRDs are particularly desirable for children under five. Under California's law, an oral hazard warning for failure to restrain is coupled with a request that available restraints be used. When the unrestrained child is five or younger, the officer is directed to recommend CRDs specifically.

Rhode Island requires restraint for children three and younger, while Kansas and North Carolina protect children up to two years of age.

In addition to exemptions based on age, some states have granted exemptions in consideration of a child's uniquely dependent nature. Michigan provides that a child need not be restrained while it is being nursed, while North Carolina and Tennessee provide similar exemptions for when the child's "personal needs" are being attended to. Although the term "personal needs" is not clearly defined, one can presume that this term refers to nursing and changing.

Exemptions for Operators

Unlike the age standard, there is true consensus among the states on which operators should be exempted from their child restraint laws. Where there are exemptions, they are based upon one of two relationships: that between the operator and the state, or that between the operator and the child passenger.

No operator is exempt from the child restraint laws of California, Maine, and Rhode Island. New York's law holds not only every operator to be liable, but also vehicle owners who knowingly permit their vehicles to be operated by someone who will fail to use proper child restraint. These laws place heavy compliance costs upon two types of operators. The first group are those who rarely, but occasionally, travel within the state. The second group are those who rarely, but occasionally, transport children. People in these two groups must obtain CRDs even though they are generally not required to use them. Of course, "rarely" and "occasionally" are relative terms, but the states that exempt some operators have done so by giving content to those words.

Kansas, Michigan, and Tennessee have attempted to remove the burden on the first group by exempting nonresidents. North Carolina's law does much the same thing by exempting those who do not hold a North Carolina driver's license. Another way to exempt members of the first group is to exempt vehicles that are registered outside of the state. The child restraint laws in Kansas, New York, North Carolina, and West Virginia apply only to vehicles registered in those states. Exemptions based on vehicle registration may eliminate some wasteful pursuits because a patrolman can tell where a vehicle is registered by the license plate, but he cannot know the driver's residence until he has pulled the vehicle over.

The second group's burden can not be eased by basing exceptions on the relationship between the operator and the child. These exceptions increase enforcement costs by giving operators an incentive to lie, and by making probable cause difficult to show. Nonetheless, Kansas, Minnesota, and Tennessee exempt all non-parents from their child restraint laws. Kansas and Minnesota

reduced the incentive to lie by limiting the punishment. In these states, operators are warned, not fined, if they fail to restrain child passengers.

West Virginia's child restraint law applies to anyone who "regularly or customarily" transports the child passenger. This language can be interpreted in two ways. One interpretation is that the law is meant to apply to grandparents, siblings, and other members of the child's extended family. Under this reading, West Virginia's law would reach some nonparents, but it does not solve the probable cause problems of a parents-only law. Instead of denying parenthood, drivers in West Virginia need simply claim that they and their child passengers are unrelated. The inadequacy of the first interpretation prompted a search for a second interpretation. The law might be intended to reach non-parents who gain by transporting other people's children. Private day baby sitters and parents who use car pools to transport each other's children would be reached under this interpretation. This interpretation of the phrase "regularly or customarily" is unworkably vague. Neither the public nor the patrolman would really know what constitutes regular or customary transportation, and the language would require constant refinement through costly adjudication. After analyzing these two interpretations, one can conclude that West Virginia's language, although innovative, neither closes the parents-only loophole nor defines a clear standard for determining which nonparents must restrain their child passengers.

Some drivers have been exempted after their state balanced the size of the exemption against the severity of the sanction. No one is exempt from California's law, but the penalty is limited to an oral hazard warning. Violation of Tennessee's child restraint law carries a fine of between \$2 and \$10, but it applies only to parents. This type of balancing did not occur in every state. New York's law provides for a fine of up to \$25, and it applies to some vehicle owners and all drivers. At the other extreme, Kansas's law applies only to parents, yet it provides no fines.

Exemptions for Vehicles

In a few states, exemptions have been granted to vehicles with certain physical or legal characteristics. States have granted exemptions based on vehicle capacity and other design factors, and some states have exempted drivers when they are operating someone else's vehicle.

CRDs are designed to be installed in passenger automobiles. To deliver its safety benefit, a CRD must be anchored to the vehicle frame by fastening a seat belt around the device. Motorcycles, omnibuses, and school buses are not required to have seat belts, and many cargo and recreational vehicles have belts in only the cab. Without belts, these vehicles are incompatible with CRDs. These vehicles carry a relatively small portion of highway passengers and an even smaller number of child passengers.

An operator of an incompatible vehicle who was forced to comply with a child restraint law would face a choice between two costly alternatives. Either he would need to install additional seat belts and make his vehicle suitable for CRD, or he would have to find another way to transport his child passenger. The cost of finding an alternative means is trivial if the operator also owns a compatible vehicle, but in those cases the compliance cost is replaced by the enforcement cost of determining whether a violator owns other vehicles. Some states have concluded these costs outweigh whatever safety benefits mandatory restraint would bring to the few children who travel in incompatible vehicles. These states exempt incompatible vehicles from their child restraint statutes.

Kansas's statute exempts all vehicles other than passenger cars, but the general approach has been to exempt specific types of incompatible vehicles. California, Kansas, Massachusetts, and North Carolina mandate child restraint only when the child is occupying a seating position where seat belts are required and available. Further, North Carolina's law specifically exempts ambulances and other emergency vehicles. Michigan's law exempts buses, motorcycles, and mopeds. Tennessee's statute exempts recreational vehicles and trucks having tonnage ratings of one or more. California, Michigan, and New York exempt school buses.

Massachusetts and North Carolina have concluded that passenger automobiles become incompatible with effective CRD use once all the seats are occupied, and it grants an exception to fully occupied passenger cars. California and Kansas require the use of "available" restraints. Since restraints are unavailable when the vehicle is full, this language may be interpreted as granting an exemption based on capacity.

Incompatibility is not the only factor that drastically increases compliance costs. Proper child restraint requires that the CRD be securely fastened to the vehicle at the start of each trip. Such fastening is particularly costly if one operates several vehicles, for the CRD must be removed, transferred, and reinstalled whenever a new vehicle is used. The costs of removal

transfer, and reinstallation are further increased if the new vehicle is unfamiliar to the reinstaller, or if the operator of the new vehicle is charging a waiting fee for the time spent installing and disconnecting the CRD. These two situations most often arise when the reinstaller is renting the new vehicle. Moreover, repeated removal and reinstallation reduces a CRDs safety benefit by increasing the likelihood that the reinstaller will do a rushed, inadequate job.

In recognition of the increased costs and reduced benefits that would result from requiring constant movement of the CRD, states have directed that CRDs need not be used in certain vehicles. The child restraint statutes of Kansas, Minnesota, North Carolina, and Tennessee apply only when the vehicle is owned by the driver. Michigan specifically exempts travel in taxicabs, and Massachusetts and West Virginia exempt travel in all vehicles that are operated for hire.

Exemptions For Substitute Devices

Generally, the statutory exemptions for certain children, drivers, and vehicles are phrased in absolute terms. If one qualifies under an exemption, one need not use any child restraint. The final group of exemptions are partial because they do not permit completely unrestrained travel. They provide that, under certain circumstances, one may legally safeguard a child without using a CRD. Usually these exemptions permit the use of standard seat belts in place of CRDs. Until recently, many safety experts believed that restraining small children in standard seat belts was more dangerous than allowing them to travel unrestrained. Their belief stemmed from the fact that adults, for whom standard belts are designed, have a lower center of gravity and a stronger pelvic structure than children. The experts held that in a sudden stop a belted child faced two significant dangers. The first was that the child's head, which accounts for a major portion of its total body weight, would whip forward and collide with nearby surfaces. The other major concern was that a child's hips would be unable to keep the belt from gouging into the abdomen and injuring internal organs. The most recent studies have shown that unrestrained travel for children that are old enough to sit up is even more dangerous than seat belt use. Armed with this new information, proponents of child restraint have urged that the child restraint statutes should, at the very least, require the use of available seat belts.

Neither the authors of these new studies nor the proponents of child restraints argue that seat belts are as effective as CRDs.

CRDs are specifically designed to a child's anatomy, and they do not pose the dangers created by seat belts. The thrust of these findings, is simply that seat belts should be used if the alternative is to use nothing at all.

The California and Maine child restraint statutes primarily urge seat belt use. Their patrolmen are simply directed to notify violators of the added safety that can be gained by using CRDs. Minnesota law requires CRD use, but it also directs patrolmen to urge the use of available seat belts.

Some state legislatures use indirect means to permit devices that are not CRDs. This is done by authorizing a state official to determine which devices comply with the statute. Since the National Highway and Traffic Safety Administration (NHTSA) sets federal standards for the design, installation, and performance of CRDs, a requirement of independent approval at the state level implies the possibility that the state agency will authorize some devices that do not gain NHTSA approval. Kansas authorizes its secretary of transportation to evaluate devices, although he is required to rule in accordance with NHTSA standards and approve all CRDs which have been certified by the NHTSA. Michigan's statute requires its secretary of state to specify alternative means of restraint for children that are physically unable to use federally approved CRDs. Finally, North Carolina vests power in its commissioner of motor vehicles to approve devices. These clauses need not imply an evil intent. The same language would be necessary if the state concluded that the NHTSA's standards were not strict enough. However, the possibility remains that this type of authorization might be interpreted as empowering state officials to approve devices that do not comply with NHTSA standards.

The final means of granting a partial exemption is to proclaim that seat belts are adequate restraints for children above a certain age. Seat belts are clearly impractical for children who are too young to be able to sit up. For children this young, the only possible form of effective protection is a type of CRD known as an infant carrier. By about age one, children outgrow the infant carrier. If the child restraint statute permits seat belt use after age one, a parent can choose between buying a second CRD and using available seat belts. If no such provision is granted, a parent must bear the expense of purchasing a second CRD. By permitting seat belt use at any age, the Massachusetts child restraint statute entrusts parents to decide when their child has outgrown his infant carrier.

Michigan's child restraint statute permits seat belt use for children over one year old, but only if the child rides in the back seat. A CRD must still be used for front seat travel. North Carolina's law permits seat belt use for children over one year old for travel in either the front or back seats. West Virginia does not accept seat belt use until the child reaches three years old. From a parent's perspective, West Virginia's provision is the least helpful of the three, for by age two a child will surely have outgrown its infant carrier, and the parents must then purchase another CRD to restrain the child until he turns three. On the other hand, forcing a second purchase may encourage CRD use, even after seat belts become permissible, by exposing parents to CRDs for older children.

Surveys Concerning Use of Child Restraint Systems

REF. NO.	YEAR OF STUDY, AUTHOR	AUTO MODEL YEARS	STUDY AREA, SAMPLE SIZE, SURVEY METHOD	REPORTED PERCENTAGE OF RESTRAINT USE	NOTES
7	1970-77 Scherz	All	Washington 0-5 years, 31,602; 6-15 years, 62,803 <i>Accident reports</i>	16%, 0-5 years 14%, 6-15 years	Includes use of belts only for older children.
9	1974 Williams	All	Maryland, Massachusetts, Virginia 8,893 <i>Observation</i>	5% belt use 2% child restraint use	10 years and under.
8	1977 Stoke	All	Virginia 6,479 <i>Observation</i>	10.3%	
6	1977 Philpot	All	Tennessee 880 <i>Observation</i>	11.3%	Before child restraint use law.
6	1978 Philpot	All	Tennessee 626 <i>Observation</i>	17.3%	After child restraint use law.
2	1978-9 Hall	All	North Carolina pre-campaign, 1138; post-campaign, 875 <i>Observation</i>	Pre-campaign: 6.7% belts 19.3% child restraints Post-campaign: 7.9%, belts 28.8%, child restraints	Before and after public education campaign.
1	1979 Area Market Research	All	Arkansas 400 <i>Questionnaire</i>	35.1%, always 26.3%, usually	Questionnaire responses.
3	[1979] Kielhorn	All	Oklahoma 3205 <i>Observation</i>	Under 1 year: 6%, belts 32%, child restraints 1-3 years: 2%, belts 10%, child restraints 3-5 years: 4%, belts 1%, child restraints	
4 5	1979 Phillips ORC	All	National 706 <i>Observation</i>	22.1%, secured by car seat belt 23.2%, not secured by car seat belt	Children under 1 year, in child safety seat.
4 5	1979 Phillips ORC	All	National 3,218 <i>Observation</i>	4.5%, secured by belt 4.2%, not secured by belt	Children 1-4 years, in child safety seat.

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