

S

B

163

STATE OF ALASKA
FISCAL NOTE

Revision Date _____, 1983

I. REQUEST

Bill/Resolution No.: SB 163
 Title: Use of Child Restraints
 Sponsor: Sen. V. Fischer
 Requestor: Sen. Transportation

II. FISCAL DETAIL

Agency Affected: Public Safety
 Program Category Affected: Life & Prop Pro
 BRU, Program of Subprogram(s) Affected:
Highway Safety Planning Agency

EXPENDITURES/REVENUES: (Thousands of Dollars)

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88
OPERATING						
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 COMMODITIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS, CLAIMS, ETC						
TOTAL OPERATING		-0-	-0-	-0-	-0-	-0-
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER (Specify Source)						

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

III. SOURCE OF FUNDS TO OFFSET FISCAL IMPACT OF BILL:

IV. ANALYSIS: Attach a separate page for any Analysis No Fiscal Impact Anticipated

Prepared By: Paul Conger Phone: 465-4338
 Division: Administrative Services Date: 3/16/83
 Approved by Commissioner: [Signature] Date: 3/23/83
 Department: Public Safety

Distribution:

- Original to Legislative Finance
- Copy to Office of Management and Budget (for Legislature introduced bills)
- Copy to Department (for Governor introduced bills)
- Copy to Sponsor
- Copy to Requestor (if different from Sponsor)

3/8/83

Alaska State Legislature

HOUSE OF REPRESENTATIVES

POUCH V
JUNEAU, ALASKA 99811
(907) 465-4990

Committee on Judiciary

Dave Tompling, Physician Coord.
for EMS. + Indian Health Service
Anch. 265-9263.

Dr. George Longenbaugh,
Sitka 747-3446 St Director
of Grana Prog of Surg.

Committee on Judiciary

Child Rest

SB 163

Berkal

EMS.

Carlis Taylor

543-3321

Dr. John Hall, St. Med.
Direct for EMS. Rep. AK Chap
of Cong. Phy. Supp in
Amch.

333-4171

Kodialek EMS

Joan Menkes

486-5725

Senator Vic Fischer

Alaska State Legislature
1024 W. 6th Avenue, Suite 204C
Anchorage, Alaska 99501 (907) 278-3654
During Session • Pouch V • Juneau, Alaska 99811 (907) 465-4954



MEMORANDUM

TO: Members, House Judiciary Committee

FROM: Senator Vic Fischer

DATE: March 26, 1984

RE: SB 163, HB 262, HB 464 (Child Safety Devices)

Dr. Clinton Lillibridge, of the American Academy of Pediatrics, asked that I send you a copy of the attached article on child safety device law.

UNIVERSITY OF COLORADO LAW REVIEW

Volume 10, Number 1
Spring 1962

Editor: J. H. Garvey
Editorial Board: J. H. Garvey, J. R. ...

Editorial Board: J. H. Garvey, J. R. ...

Editorial Board: J. H. Garvey, J. R. ...

Editorial Board: J. H. Garvey, J. R. ...

Editorial Board: J. H. Garvey, J. R. ...

CONTENTS

- THE USE OF ...
- ...
- ...
- ...

CHILD SAFETY IN AUTOMOBILES: MANDATORY RESTRAINT-USE LAWS

Automobile safety is an issue of long-standing concern, but only recently has special attention been focused on the safety needs of young children, to whom cars pose one of the largest public health threats in the country.¹ This threat would be greatly diminished if each pre-school aged child were properly secured in a child restraint device (CRD) each time he or she traveled in a motor vehicle.

A CRD is a car seat, padded shell, or harness which is designed to protect infants and young children in the event of an accident, and which is usually secured in place by a vehicle's existing lap belts.² These devices are fairly inexpensive and readily available, yet they are rarely used. In fact, a leading study found that less than ten percent of children transported in motor vehicles were adequately protected against the possibility of injury.³

A growing awareness of this public health problem has resulted in passage of legislation mandating the use of CRDs in two states⁴ and proposed legislation in twenty-eight others.⁵ This Comment will examine the laws mandating the use of CRDs and the legal issues which may arise from them. The efficacy of the various statutes will be analyzed as well as their constitutional validity under state police powers. An evaluation of the potential impact of CRD laws on auto-

1. See text accompanying notes 6-8 *infra*.

2. Some CRDs are designed solely for use by infants while others protect only toddlers capable of sitting alone. Many restraint devices are convertible and can be used from birth until the child weighs more than forty to fifty pounds, at four or five years of age. For a complete description and evaluation of many of the CRDs marketed today, see MICHIGAN'S MOTOR VEHICLE OCCUPANT PROTECTION PROGRAM, MICHIGAN TRAFFIC SAFETY INFORMATION COUNCIL, A DETAILED REVIEW OF CURRENTLY MARKETED INFANT AND CHILD RESTRAINTS (1979); *Child Restraint Systems*, 42 CONSUMER REPORTS 314 (1977).

3. See Williams, *Observed Child Restraint Use in Automobiles*, 130 AM. J. DISEASES OF CHILDREN 1311 (1976).

4. CRD-use laws are in effect in Tennessee and Rhode Island. See notes 33 and 41 *infra*.

5. Child restraint bills have been proposed in the following states: Alabama, Arizona, California, Colorado, Connecticut, Delaware, Hawaii, Illinois, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oregon, South Dakota, Virginia, Washington, West Virginia, and Wisconsin. See ACTION FOR CHILD TRANSPORTATION SAFETY, SUMMARY OF PROPOSED CHILD RESTRAINT LEGISLATION AND ALTERNATIVE MODEL LAWS (1979, updated May, 1980) [hereinafter cited as ACTS].

mobile accident litigation will follow. Before turning to those issues, however, the problem to which CRD laws are addressed will be more fully described.

THE PROBLEM

Motor vehicle accidents cause death and injury to more children than any other single cause, including childhood diseases.⁶ In 1979 alone, 1159 children under the age of five died, and at least fifty times that number were injured, in such accidents in the United States.⁷ Colorado contributed fourteen fatalities and 835 recorded injuries to that toll.⁸ These high numbers are due primarily to two factors: the physical characteristics of young children and the positions they usually occupy as unrestrained passengers in motor vehicles.

The unique center of gravity and small size of young children make them particularly vulnerable to serious injuries in automobile crashes.⁹ A child's head makes up a great proportion of his overall body weight, and this, coupled with an inability to brace himself with his short arms and legs, greatly increases the likelihood that he will be propelled head-first in the direction of any impact point. The result is a high incidence of head injuries and related deaths among accident victims in this age group.¹⁰ In fact, such injuries can occur even in the absence of an actual accident when an unsecured child is thrown against the automobile's interior by a sudden swerve or application of the brakes.¹¹ Larger and heavier passengers, on the other hand, are less likely to be shifted by abrupt driving maneuvers.

The physical characteristics of very young children also tend to

6. Automobile accidents are the leading cause of death and serious injury for all children beyond one month of age. See Sheiness & Charles, *Children as Passengers in Automobiles. The Neglected Minority on the Nation's Highways*, 56 *PEDIATRICS* 271 (1975).

7. DEPARTMENT OF TRANSPORTATION, NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION (NHTSA), *HIGHWAY SAFETY 1979: REPORT ON ACTIVITIES UNDER THE HIGHWAY SAFETY ACT OF 1966* (1980). This report contains only death statistics. Injury statistics are not published but are kept on file by NHTSA. The National Electronic Injury Surveillance System file kept at NHTSA shows that 60,400 pre-schoolers injured by motor vehicles were transported to emergency rooms in 1979. Telephone interview with Grace Hazard, data retrieval specialist, National Center for Statistics and Analysis, NHTSA, Sept. 16, 1980.

8. MOTOR VEHICLE DIV., COLO. DEPT. OF REV., *STANDARD SUMMARY OF MOTOR VEHICLE TRAFFIC ACCIDENTS* (1979).

9. See Karwacki & Baker, *Children in Motor Vehicles: Never Too Young to Die*, 242 *J. A. AED ASSOC.* 2838 (1979); Alter, *Unsafe at Any Age? Children and Car Safety*, *PARENTS MAGAZINE* Feb. 1979, reprinted in *INSURANCE INSTITUTE FOR HIGHWAY SAFETY (IIHS) STATUS REPORT 8* (Mar. 19, 1979).

10. Karwacki & Baker, *supra* note 9.

11. Alter, *supra* note 9, at 9.

and the forward-moving weight of the person holding him.¹⁸ This same crushing action can occur when a seatbelt is fastened around both the adult and the child on his lap. In a collision, the weight of the adult is forced against the child penned in the seatbelt with him, and the probability of serious abdominal injury to the child is greatly increased.¹⁹

The final variation of on-lap travel is a seatbelted adult holding an unrestrained child on his lap. In this position, the adult does not crush the child in an accident, but is powerless in most cases to prevent other harm to the child, for even the smallest infant weighs the equivalent of several hundred pounds at the instant of impact, and is likely to be torn from even the strongest of human arms.²⁰ In short, holding a child can never be an adequate safety alternative to the use of an appropriate restraint device.

The need for CRDs will not be obviated by the automatic restraint systems which federal legislation will require on all new cars by 1984.²¹ While manufacturers will be able to satisfy the requirements by providing either automatic seatbelts or airbags in their vehicles, neither option is fully adequate for child safety needs. Automatic seatbelts designed for average sized adults will not offer even minimal protection to infants. Airbags, on the other hand, will diminish the threat to children riding in the front seat, but present legislation does not require airbag installation for the protection of rear seat passengers, a class composed largely of children.²² Furthermore, airbags will provide little protection in side- and rear-impact collisions and rollovers.²³

Finally, unlike a CRD, an airbag would not play a role in preventing the occurrence of an accident. A study conducted at the University of North Carolina concluded that more than two hundred

18. *Id.* at 3.

19. *Id.* at 4.

20. The force that a child will exert upon impact can be roughly calculated by multiplying the child's weight and the vehicle's speed together. For instance, a fifteen pound infant will exert a force of three hundred pounds in a twenty mile per hour collision. See IHHS, *An Evaluation of Adult Clasping Strength for Restraining Lap-Held Infants*, discussed in IHHS STATUS REPORT 6 (Mar. 19, 1979).

21. Automatic restraint systems are being phased in over several years with large cars being targeted first. All new cars will have to meet the requirement by the 1984 model year. 49 C.F.R. § 571.208 (1979).

22. One survey found that about seventy percent of the nearly 9000 children observed in motor vehicles were riding in the back seat. Riesinger & Williams, *Evaluation of Programs Designed to Increase the Protection of Children in Cars*, 62 PEDIATRICS 280, 286 (1978).

23. See Comment, *Occupant Protection in Automobiles*, 27 AM. U. L. REV. 635 (1978) for a thorough discussion of automatic restraint systems.

of that state's traffic accidents in 1977 were caused by unrestrained children who had distracted the driver of the vehicle in which they were riding. Children who fell off the seat or interfered with the operation of the motor vehicle were, in many instances, found to have been the direct cause of a crash.²⁴

All of the problems discussed above would be greatly alleviated by the use of CRDs. Experts in the field generally agree that the number of children killed and injured in automobile accidents would be minimized—some claim by as much as ninety percent—if CRDs were consistently and properly used.²⁵ Yet recent data shows that only seven percent of the children riding on the nation's roads are adequately secured for protection against possible harm.²⁶ Parents who wear their own seatbelts while transporting their children have been found to use child restraints more than any other group. Yet even in that situation, only twenty-two percent of the passenger children were secured by a CRD or seatbelt.²⁷ The great number of children harmed, coupled with the low voluntary usage rate of adequate restraints, has led to a growing interest in a statutory solution to this public health problem.

THE STATUTES

The field of automobile safety is one which legislators enter with trepidation. Traditional public hostility toward regulation of individual driving habits has led to a reluctance to impose safety requirements on individual drivers. Public sentiment was so strong against the federally mandated seatbelt-ignition interlock system,²⁸ for example, that Congress was forced to repeal the measure less than a

24. This study was summarized in MICHIGAN ASSOCIATION FOR TRAFFIC SAFETY, FORMATS, *Child Passenger Safety News* (Feb. 1980)

25. A study of crashes done in Washington state by Dr. Robert G. Scherz, for example, concludes that "[t]he difference between deaths and disabling injuries between the restrained and unrestrained pre-school children was highly significant. If all of the children in the 0-5 age group had been restrained at the time of the accident, then the . . . deaths may have been reduced from 124 to 13 (down 90%) and disabling injuries reduced from 716 to 238."

Alter, *supra* note 9, at 10.

The reduction in injuries in the Washington study is about 33%, a rate very similar to that obtained by analyzing accidents involving children under fifteen years of age in North Carolina. The North Carolina study found that "[u]se of restraints reduced the injury rate by 39% in the front seat and by 31% in back." Williams & Zador, *supra* note 16, at 10.

26. Williams, *supra* note 3.

27. *Id.* at 1314.

28. The seatbelt-ignition interlock system prevented a vehicle's engine from being started until seatbelts were buckled. An annoying buzzer sounded if seatbelts were unfastened while the seat was occupied.

year after it went into effect.²⁹ This public hostility explains the absence of mandatory seatbelt-use laws in any of the states.

The somewhat warmer reception given to CRD-use laws in state legislatures is undoubtedly due to the age of those who would benefit from such legislation. Because infants and young children are completely dependent on others for their well-being, state law has historically provided for their health and safety when those charged with their care fail adequately to do so.³⁰ The effectiveness and practicality of extending state protection to children as automobile passengers will be evaluated by examining the various CRD statutes which have been proposed.

The Existing Laws

Two states have succeeded in passing CRD legislation: Tennessee³¹ and Rhode Island.³² The pioneering Tennessee statute, which went into effect at the beginning of 1978, requires that all children under the age of four be secured in a CRD when riding in a vehicle owned and operated by their parents.³³ Exemptions are allowed for children riding on other passengers' laps, and for children riding in recreational vans and certain trucks.³⁴ The penalty for breaking this law is a moderate fine; and proof of the violation cannot be raised in civil suits for negligence.³⁵

29. 15 U.S.C. § 1410b(b)(1)(B) (1976).

30. See text accompanying notes 83-92 *infra*.

31. TENN. CODE ANN. § 55-9-214(b) (1980).

32. R. I. GEN. LAWS § 31-22-22 (1980).

33. TENN. CODE ANN. § 55-9-214 (1980).

(b) Effective January 1, 1978, every parent or legal guardian of a child under the age of four (4) years residing in this state shall be responsible, when transporting his child in a motor vehicle owned by that parent or guardian operated on the roadways, streets or highways of this state, for providing for the protection of his child and properly using a child passenger restraint system meeting federal motor vehicle safety standards, or assuring that such child is held in the arms of an older person riding as a passenger in the motor vehicle. Provided that the term "motor vehicle" as used in this paragraph shall not apply to recreational vehicles of the truck or van type. Provided further that the term "motor vehicle" as used in this paragraph shall not apply to trucks having a tonnage rating of one (1) ton or more. Provided that in no event shall failure to wear a child passenger restraint system be considered as contributory negligence, nor shall such failure to wear said child passenger restraint system be admissible as evidence in the trial of any civil action.

(c) Violation of any provision of this section is hereby declared a misdemeanor and anyone convicted of any such violation shall be fined . . . not less than two dollars (\$2.00) nor more than ten dollars (\$10.00) for each violation of subsection (b) of this section.

34. *Id.*

35. *Id.*

From a safety standpoint, the most controversial provision of this law is the so-called "babes-in-arms" exemption.³⁶ Holding a child in a passenger's arms has been shown to be an entirely inadequate substitute for the use of a restraint,³⁷ and there is hope among the original sponsors of the Tennessee law that this exemption will be repealed at some future date.³⁸ Unfortunately, similar provisions were included in bills introduced in four other states.³⁹

A second aspect of the Tennessee law which may lessen its effectiveness is that it applies only to parents who are transporting their own children. Although the majority of children less than four years old are likely to be driven by a parent whenever they ride in a vehicle, this provision may nevertheless lead to enforcement problems. Since most children carry no identification, the temptation for any parent or guardian to simply assert that he is, for example, the child's uncle or babysitter when stopped for a possible violation is evident. A police officer faced with such a statement would in many cases lack probable cause to go forward and issue a citation.⁴⁰

Tennessee's final exempting provision, which excludes trucks and vans from the law's application, was probably viewed as a practical necessity because of the limited seating which is available in those vehicles. The addition of a further provision requiring that restraints be used if seating were available would strengthen the protective purpose of the law while still acknowledging these practical concerns.

A CRD-use law with quite different provisions went into effect in Rhode Island in July of 1980.⁴¹ Unlike the Tennessee statute, this

36. The exemption allowed for children who ride on another passenger's lap was added as an amendment by one of the bill's opponents. He argued that the happiest day of his daughter's life was when she brought her new baby home from the hospital in her arms and that the law would deny this pleasure to other new mothers. It was feared that the law would not be passed if the exemption were removed. R. Sanders, *Effective Interaction With State Legislatures* (paper presented at the Child Passenger Safety Conference, U. of Tenn. Transp. Center, May 10, 1978, available from Action for Child Transportation Safety).

37. See text accompanying notes 17-20 *supra*.

38. Sanders, *supra* note 36.

39. This language was included in bills introduced in Illinois, Louisiana, New Hampshire, and New Jersey, none of which passed. ACTS, *supra* note 5.

40. Probable cause exists when the facts and circumstances within the officer's knowledge are sufficient in themselves to warrant a belief by a man of reasonable caution that an offense has been committed. *Brinegar v. United States*, 338 U.S. 160, 175-76 (1949). More than mere suspicion is required. *Henry v. United States*, 361 U.S. 98, 101 (1959).

41. R. I. GEN. LAWS § 31-22-22 (1980):

Child Passenger Restraint Systems. Any person transporting a child three (3) years of age or under in the front seat of a motor vehicle operated on the roadways, streets or highways of this state, will provide for the protection of the child and

law applies to all persons driving in Rhode Island and therefore avoids the potential enforcement problems posed by a "parents-only" provision. The unique feature of Rhode Island's law is that it requires CRD use by children under the age of four only while they are riding in the front seat of a vehicle.⁴² The law thus addresses the most hazardous practices of unrestrained, or on-lap, front seat travel, but fails to provide protection for the majority of child passengers: those who ride in the back seat.⁴³ A more stringent bill, to be introduced in the South Dakota legislature,⁴⁴ would provide the added protection. That bill would require that children ride in the back seat *and* be secured in the vehicle's available seatbelts whenever possible. Should it be necessary for a child to be transported in the front seat, a restraint device appropriate for the child's age and size, such as is required in Rhode Island, would have to be used.

Pending Legislation: Some Further Options

The majority of CRD legislation introduced in other states is similar to the Tennessee law, but without the "babes-in-arms" exemption.⁴⁵ These statutes typically would require that a parent who is driving his own vehicle must have his young children secured in CRDs. The protected class of children is most often limited to those younger than four years, or alternatively, to those who weigh less than forty pounds.⁴⁶ These age and weight limitations provide convenient lines for the legislators to draw, since they encompass the class

properly use a child passenger restraint system approved by the United States Department of Transportation under Federal Standard 213, provided that in no event [shall] failure to wear a child passenger restraint system be considered as contributory negligence, nor [shall] such failure to wear said child passenger restraint system be admissible as evidence in the trial of any civil action.

Any person deemed to be in violation of this section shall be issued a citation with a fine of fifteen (\$15.00) dollars and it will be recorded on said person's driving record within the rules and regulations governing Section 31-43.

42. *Id.*

43. While one study found that a "back seat location reduced the injury rate by 28% among unrestrained child passengers and by 18% among restrained children," it further concluded that restrained children are safer than those who are unrestrained, regardless of their position in a vehicle. Williams & Zador, *supra* note 16, at 71.

44. The South Dakota proposal is described in ACTS, *supra* note 5.

45. Arizona H.B. 2418 (defeated in committee); Colorado H.B. 1440 (defeated in the House); Michigan substitute for H.B. 5327, Minnesota H.B. 156 and S.B. 274, Nebraska Leg. B. 79; North Carolina H.B. 1018 (defeated); North Dakota H.B. 1490 (defeated); Oregon H.B. 2667 (defeated in the House); Washington H.B. 199 and S.B. 2895 (withdrawn by sponsors); Wisconsin Asmb. B. 747. The sponsors of many of the defeated bills plan to reintroduce their respective proposals. ACTS, *supra* note 5.

46. *Id.*

of passengers for whom CRDs are typically designed.⁴⁷ Also, by drafting legislation concerned with CRD use only, legislators can minimize the political and public opposition which would accompany a more far-reaching restraint-use law.

The four year age limit is not universal, however. California has a bill pending which would encourage the use of appropriate restraint systems for all children under the age of sixteen.⁴⁸ This bill is designed primarily to educate the public and would allow law enforcement officers to issue verbal hazard warnings, but not citations, to non-complying motorists. Other age variations are found in the South Dakota legislation mentioned above,⁴⁹ which would apply to children up to thirteen years of age, and in a Maryland bill which would require restraint use for the protection of children who are less than eight.⁵⁰

Proposed CRD laws also vary in their determination of who will be responsible for complying with their respective terms. As noted, the majority would hold only parents or legal guardians liable for the failure to use restraint devices. Statutes with broader coverage usually are written to apply to all resident drivers,⁵¹ or to the drivers of all vehicles which are registered in the enacting state.⁵² One novel variation is the New York proposal,⁵³ which would impose a penalty on both the driver of a vehicle in which an unrestrained child was riding, and the vehicle owner who knowingly permitted a child to be transported in that manner.

Other provisions which may be incorporated into some proposed statutes include a ban on carrying passengers in the cargo areas of hatchbacks, station wagons, and pickup trucks,⁵⁴ and on the practice of buckling one seatbelt around two people.⁵⁵ One exemption under consideration in some states allows children with medical problems

47. See note 2 *supra*.

48. California Asmb. B. 1198, ACTS, *supra* note 5.

49. See note 44 and accompanying text *supra*.

50. Maryland H.B. 33, ACTS, *supra* note 5.

51. See, e.g., Maryland H.B. 33, ACTS, *supra* note 5.

52. See, e.g., Colorado H.B. 1440, ACTS, *supra* note 5.

53. New York S.B. 2623, ACTS, *supra* note 5.

54. See, e.g., Massachusetts S.B. 1269 which would prohibit the carrying of passengers in open trucks. ACTS, *supra* note 5. This particular provision has been enacted by city ordinance in Ogden, Utah. This five year old law forbids persons from riding in any portion of a motor vehicle not designed or intended for use by passengers. It further makes it illegal to operate a motor vehicle while any person is standing on the vehicle's seats. MICHIGAN ASSOCIATION FOR TRAFFIC SAFETY, FORMATS, *Child Passenger Safety News* 4 (Apr. 1980).

55. See, e.g., Maryland H.B. 33; Washington H.B. 199 and S.B. 2895, ACTS, *supra* note 5.

which may make the use of a CRD impossible, to travel without being secured in such a device.⁵⁶ To avoid possible abuse of this provision, a doctor's certificate of exemption would be required by some statutes.⁵⁷

In combining any of these provisions into a workable child restraint law, the interest in maximizing safety should be balanced against considerations of fairness and practicality. The statutes must be flexible. For example, a large family that can afford only a small car with inadequate seating for all family members should not be subject to a penalty each time they venture onto the public roads. A law which requires the use of CRDs for available seating and which further requires all unrestrained children to ride in the back seat might best accommodate both safety concerns and tight family budgets.

Flexibility and compromise is also necessary in striking a reasonable balance between the strictness of a restraint law's provisions and the determination of who will be subject to the law's terms. For example, a requirement that CRDs be obtained and used would be less controversial under a law that applies only to parents and legal guardians, rather than to all in-state drivers. Conversely, statutes which apply to all drivers might require only that the vehicle's available seatbelts be used for the protection of children. Under a law of the latter type, parents could still be encouraged to obtain CRDs by other means, such as by allowing a tax credit as an incentive for their purchase. The tax credit incentive is presently under consideration in some states.⁵⁸

Costs and Enforcement

The burden which would be imposed on members of the public by requiring them to obtain CRDs should not be viewed as an insurmountable problem. The cost of these devices, generally between twenty and forty-five dollars,⁵⁹ is not unreasonable when it is consid-

56. Members of Action for Child Transportation Safety find exemptions for "physical or medical" reasons unacceptable and argue that children unable to sit in the typical car seat style CRD — because of a bulky cast or perhaps some birth defect — are nevertheless entitled to protection. They suggest larger shield or harness type restraints as alternatives. ACTS, *supra* note 5. See also L. Schneider, J. Melvin, C. E. Cosnev, *Impact Sled Test Evaluation of Restraint Systems Used in Transportation of Handicapped Children* (paper presented to the Society of Automotive Engineers, Detroit 1979) discussed in IHS STATUS REPORT 5 (Mar. 19, 1979).

57. See, e.g., Colorado H.B. 1440; Massachusetts S.B. 1097, ACTS, *supra* note 5.

58. See, e.g., Michigan S.B. 394, ACTS, *supra* note 5.

59. See note 2 *supra*.

ered that a CRD provides up to four years of protection and that each CRD can be re-used by several children. The price of the device could simply be considered, along with license plates, safety inspections, and insurance, as one of the costs of owning and operating a motor vehicle.

On the other hand, CRD legislation would probably receive greater public acceptance if it were accompanied by programs designed to minimize the cost of compliance. Legislative efforts toward this end could include the tax credit mentioned above and, possibly, Medicaid coverage of CRD purchases for the poor. It has been suggested that Medicaid payments for CRDs could be justified under the same theory that applies to childhood vaccinations—that such devices constitute effective preventive medicine.⁶⁰

As an alternative to government help, many innovative private programs offer means of keeping compliance costs down. Examples include CRD rental programs which have been successfully established in several parts of the country, as well as programs which offer used restraint devices for sale at minimal cost.⁶¹ A different approach has been implemented by one insurance company which provides CRDs to its insured families without charge, thereby spreading the cost of the devices among all of its policy holders.⁶² Thus, several possibilities exist in both the government and private sectors which could minimize the financial burden imposed by CRD-use laws.

A final concern about the practicality of these statutes centers on the enforcement problems that they may present, although these problems appear to be no greater than those which accompany many other traffic regulations. As in the case of driving without a valid license, which is against the law⁶³ but usually goes undetected, CRD violations might often be found only after the driver of the car is stopped for another infraction. More likely, an officer would simply

60. Action for Child Transportation Safety is among those groups exploring the possibility of Medicaid payments for CRD purchases. Allowing such payments was urged by the safety coordinator of a pediatric preventive medicine program in testimony before the House Commerce Subcommittee on Oversight and Investigation. HHS STATUS REPORT 7 (May 17, 1979).

61. Several such programs are described in *Child Passenger Safety News*, *supra* note 24.

62. Robert E. Vanderbeck, president of the League General Insurance Companies of Southfield, Michigan told the House Commerce Subcommittee on Oversight and Investigation that "[t]he program . . . makes economic sense and we believe will be cost effective — it will pay for itself through reduced claims." HHS STATUS REPORT 6 (May 17, 1979).

63. See, e.g., COLO. REV. STAT. § 42-2-101 (1973).

notice a child standing on the seat of a vehicle or riding on another person's lap and then pull that vehicle over in order to issue a ticket to the driver. Children traveling in dangerous positions are often visible to other motorists on the road and no extraordinary surveillance techniques would be needed by police charged with halting that practice.

THE POLICE POWER

Each state possesses authority to pass laws which protect the health, safety, or welfare of the public.⁶⁴ This authority is an inherent aspect of the state's sovereignty and is known as its police power.⁶⁵ In determining the validity of any legislation passed pursuant to this power, courts typically employ a two-step analysis. Such a law will be upheld if it furthers a legitimate state objective and if the means employed to attain it are reasonably related to that end.⁶⁶

A Legitimate Objective

An appropriate state objective has been held to be any one which promotes or protects the public welfare.⁶⁷ This definition is elastic enough to encompass the wide variety of laws which are enacted in response to changing public needs. The shift from an agrarian to an industrial society, for example, created the need for regulations such as workmen's safety, pure food, and urban housing and sanitation laws.⁶⁸ More recently, the public welfare concept has been expanded to include rent control laws,⁶⁹ anti-deceptive credit practice laws,⁷⁰ and anti-billboard and landmark preservation statutes

64. See *Berman v. Parker*, 348 U.S. 26, 32 (1954); *East New York Bank v. Hahn*, 326 U.S. 230, 232 (1945); *Nebbia v. New York*, 291 U.S. 502, 523 (1934); *License Cases*, 46 U.S. (5 How.) 504, 583 (1847).

65. The term "police power" appears to have been first used by Justice Marshall in *Brown v. Maryland*, 25 U.S. (12 Wh.) 419, 433 (1827). It is a residuary power, one which was retained by the states after certain enumerated powers had been transferred to the new federal government.

66. "To justify the state in . . . interposing its authority in behalf of the public, it must appear, first, that the interests of the public . . . require such interference; and, second, that the means are reasonably necessary for the accomplishment of the purpose, and not unduly oppressive upon individuals" *Goldblatt v. Hempstead*, 369 U.S. 590, 594-95 (1962) quoting *Lawton v. Steele*, 152 U.S. 133, 137 (1894).

67. See, e.g., *In re Interrogatories of the Governor*, 97 Colo. 587, 595, 52 P.2d 663, 667 (1935) which notes that this power is as "broad as the public welfare."

68. See *Morrisette v. United States*, 342 U.S. 246, 253-54 (1952).

69. *Hutton Park Gardens v. West Orange Town Council*, 68 N.J. 543, 350 A.2d 1 (1975).

70. *Birkenfield v. City of Berkeley*, 17 Cal.3d 129, 550 P.2d 1001, 130 Cal. Rptr. 465 (1976).

designed to protect the aesthetic features of an area.⁷¹

Regulations such as these can be viewed as an attempt to redress an unequal balance of power. When members of the public are faced with some threat with which they cannot deal on an individual level, the constitutional niche known as the police power has enabled the state to attempt to protect their well-being by regulating the conduct of those who do have the power and ability to mitigate the potential harm. Thus, the acts of the employer, the manufacturer, and the polluter may be regulated for the benefit of the worker, the consumer, and the public at large.

The CRD statutes fit easily into this pattern. In passing these laws, states are seeking to protect a particularly powerless class of people by regulating the behavior of those in the best position to minimize the risk to that class. Insofar as they seek to promote safety, these statutes are at the core of the police power doctrine.⁷²

Highway Regulations. Specifically, CRD legislation is addressed to the problem of highway safety, an area in which the states have extensively exercised their rule-making powers.⁷³ Since the arrival of the automobile, both drivers and vehicles have been subjected to a variety of statutory requirements designed to protect the driving and riding public. In evaluating the validity of CRD laws as highway safety regulations, a useful analogy can be drawn from the motorcycle helmet laws which, like CRD laws, mandated the use of specialized equipment.

The controversial helmet laws, which swept the country approximately a decade ago, were sustained as valid police power legislation by the overwhelming majority of courts which faced the issue.⁷⁴ The Colorado Supreme Court's discussion in the case of *Love v. Bell*⁷⁵ is typical of many of these opinions. As with most of the courts across the country which addressed the problem, the Colorado

71. *Penn Central Transp. Co. v. New York*, 438 U.S. 104, 129 (1978); *John Donnelly & Sons v. Mallar*, 453 F. Supp. 1272 (S.D. Me. 1978).

72. *Kelley v. Johnson*, 425 U.S. 238, 247 (1976).

73. *South Carolina Highway Dep't v. Barnwell Bros.*, 303 U.S. 177 (1938); *Bibb v. Navajo Freight Lines*, 359 U.S. 520 (1959); *People v. Brown*, 174 Colo. 513, 485 P.2d 500 (1971); *Zaba v. Motor Vehicle Div.*, 183 Colo. 335, 516 P.2d 634 (1973).

74. Helmet statutes were struck down in only two of the thirty-three states in which they were challenged. Illinois, *People v. Fries*, 42 Ill.2d 446, 250 N.E.2d 149 (1969) and Michigan, *American Motorcycle Association v. Davids*, 11 Mich. App. 351, 158 N.W.2d 72 (1968). The Michigan Supreme Court upheld a very similar municipal law several years later in *City of Adrian v. Poucher*, 398 Mich. 316, 247 N.W.2d 798 (1976). The helmet cases are collected in 32 A.L.R.3d 1270.

75. 171 Colo. 27, 465 P.2d 118 (1970).

court studiously avoided the most salient issue which grew out of the helmet legislation, the issue of whether mandatory self-protection and of regulating a person for his own good was a valid state objective.⁷⁶ Instead, the court sought to find some benefit which the helmet statutes provided to other highway users in order to sustain the law. It found one such benefit in the economic area, noting the "laws may be passed within the police power to protect the public from financial loss."⁷⁷ In drawing upon a record which showed a higher frequency of serious head injuries and deaths among bare-headed riders than among those who wore helmets, the court ruled that the law protected the public's financial health since it prevented motorists involved in accidents with motorcycles "from being required to respond in damages more heavily than might be the case if the motorcycle driver and passenger were wearing helmets."⁷⁸ Other courts also employed the "financial health" argument and cited increased public medical and welfare costs which would have to be paid to disabled cyclists, as well as higher insurance rates.⁷⁹

Most of the helmet law opinions did not rest solely on this economic protection analysis, but also sought some connection between helmets and the public's physical well-being. Many courts found such a connection in the "flying debris" theory, which is based upon the hypothesis that an unprotected cyclist might be struck in the head by loose gravel or other objects thrown up by passing vehicles, thereby causing the cyclist to lose control and possibly cause an accident.⁸⁰ The courts were unswayed by the argument that such a chain of events had never been known to have occurred.

If CRDs are substituted for helmets in the analysis above, the reasoning employed in the typical helmet case not only remains valid but is, in fact, strengthened. As with helmets, CRDs offer the potential for mitigating physical, and therefore, financial damages resulting from highway accidents. More importantly, a CRD law would not leave a court having to strain for a "loose gravel" rationale in

76. Few courts were willing to ground their opinions on the self-protecting aspect of helmet legislation. Two cases which did discuss this issue were *People v. Carmichael*, 56 Misc. 2d 388, 288 N.Y.S.2d 931 (1968) (state has an interest in preserving strong, healthy citizens) and *State v. Mele*, 103 N.J. Super. 353, 247 A.2d 176 (1968) (state has an interest in protecting people from their own carelessness).

77. 171 Colo. at 33, 465 P.2d at 121.

78. 171 Colo. at 33, 465 P.2d at 121-22.

79. See, e.g., *State v. Anderson*, 3 N.C. App. 124, 164 S.E.2d 48 (1968), *aff'd*, 275 N.C. 168, 166 S.E.2d 49 (1969).

80. See 171 Colo. at 33-34, 465 P.2d at 122 and the cases cited therein.

searching for a connection between the regulation and the physical safety of non-regulated members of the public. In contrast to the helmet law discussions on this point, the potential beneficiaries of CRD legislation are not hypothetical, their existence is clearly documented in the "0-4 years" column of each state's accident reports.

The mandatory helmet statutes are perhaps on the periphery of valid police legislation. They raise the difficult problem of the extent to which an individual can be regulated for his own good. Shifting political attitudes on just this point have resulted in the repeal of helmet laws in twenty-eight of the forty-nine states which originally enacted them.⁸¹ The notion of protecting a person against himself is not a factor in CRD legislation, however, for in requiring the use of child restraints the state is attempting to protect those too young to make rational choices in their own best interest. In this vein, it is interesting to note that of those states which repealed helmet laws, nearly two-thirds reenacted such legislation applicable only to minors.⁸²

Parens Patriae. The state's interest in the well-being of its youth is of ancient origin. Plato believed that the good of the state as a whole justified the regulation of child-rearing practices.⁸³ His pupil, Aristotle, differed on this point, suggesting that regulations were necessary only to protect the interests of the individual child.⁸⁴ These two theories have survived to the present and are often meshed with a third concern, an interest in preserving the family structure as the basic unit in society.⁸⁵

81. California is the only state never to have enacted helmet legislation. A summary of the recent status of helmet laws in this country, including dates of enactment, repeal and pending legislation is compiled in ILLIS STATUS REPORT 5-8 (Apr. 30, 1979).

82. *Id.*

83. PLATO, *REPUBLIC* Bk. V (E. Hamilton & H. Cairns, eds., *THE COLLECTED DIALOGUES OF PLATO* 1961, at 698-702), mentioned in *Meyer v. Nebraska*, 262 U.S. 390, 401-2 (1923).

84. ARISTOTLE, *POLITICS* 32-33 discussed in Kleinfeld, *The Balance of Power Among Infants, Their Parents and the State*, 4 *FAM. L. Q.* 410-412 (1970).

85. See text accompanying notes 105-08, *infra*. An example of the interweaving of these ideals is the preamble to the Colorado Children's Code, *COLO. REV. STAT. § 19-1-102* (1973):

The general assembly declares that the purposes of this title are:

- (a) To secure for each child subject to these provisions such care and guidance, preferably in his own home, as will best serve his welfare and the interests of society;
- (b) To preserve and strengthen family ties whenever possible, including improvement of home environment;
- (c) To remove a child from the custody of his parents only when his welfare and safety or the protection of the public would otherwise be endangered; and
- (d) To secure for any child removed from the custody of his parents the necessary

The Platonic theory was mentioned more often in early cases dealing with child-related legislation than it is today. For instance, in sustaining the state's compulsory schooling law, the Colorado Supreme Court in 1927 stated flatly that "[t]he state, for its own protection, may require children to be educated. This needs no citation."⁸⁶ This "good-of-the-state" approach is also reflected in statutory provisions, such as those which override parental objections to immunization whenever a community is threatened with an epidemic.⁸⁷

Statutes usually demonstrate a more Aristotelian concern for the welfare of individual children, rather than for the state as a whole. Examples are child abuse laws,⁸⁸ child labor laws,⁸⁹ and those mandating specific medical procedures to prevent blindness⁹⁰ and mental retardation⁹¹ in newborns. The "child protection" rationale is also cited frequently by state courts since the United States Supreme Court has stated that "[t]he well-being of its children is of course a subject within the State's constitutional power to regulate. . . ."⁹²

Although CRD legislation arguably benefits the state as a whole by preserving the health of future productive citizens and by reducing the number of those who might require long-term public aid because of automobile injuries, its primary purpose is to prevent needless harm from being inflicted upon young children. This latter goal is an entirely appropriate one, as has previously been shown. The question that remains is whether requiring individual drivers to obtain and use child restraints is a reasonable method of attaining that objective.

care, guidance, and discipline to assist him in becoming a responsible and productive member of society.

86. *Vollmar v. Stanley*, 81 Colo. 276, 280, 255 P. 610, 613 (1927).

87. *See, e.g.*, COLO. REV. STAT. §§ 25-4-303 to -305 (1973 & Supp. 1978).

88. *See, e.g.*, COLO. REV. STAT. §§ 19-10-101 to -115 (1973) which deal with reporting abuse, and COLO. REV. STAT. § 18-6-401 (1973 & Supp. 1979) describing the crime of child abuse.

89. *See, e.g.*, COLO. REV. STAT. §§ 8-12-101 to -117 (1973 & Supp. 1979), the Colorado Youth Employment Opportunity Act of 1971, which details the types of employment that youths of various ages may engage in.

90. *See, e.g.*, COLO. REV. STAT. §§ 25-4-303 to -305 (1973), requiring that the eyes of all newborns be treated with a prophylaxis within one hour of birth.

91. *See, e.g.*, COLO. REV. STAT. § 25-4-801 (1973): "The general assembly declares that, as a matter of public policy of this state and in the interest of public health, every newborn infant should be tested for phenylketonuria and other metabolic defects in order to prevent mental retardation resulting therefrom. . . ."

92. *Ginsberg v. New York*, 390 U.S. 629, 639 (1968).

Reasonable Means

The legislature is given wide discretion in implementing its goals, and a presumption of validity attaches to each statute it enacts.⁹³ In order to rebut this presumption, an opponent must prove that a law, when applied, violates some provision of the state or federal constitution,⁹⁴ or that the law does not reasonably relate to the state's objective in passing it.⁹⁵ The question of its "reasonableness" is, in fact, the central issue in any challenge to a police power regulation.⁹⁶

Most statutes promulgated under the police power seek to protect public welfare by regulating conduct in the manufacturing and professional sectors. Individual behavior may also legitimately be regulated so long as the burden imposed does not infringe on a fundamental right.⁹⁷ A mere showing "that in its operation a police measure may increase their labor, decrease the value of their property or otherwise inconvenience individuals" will not suffice to render a law void.⁹⁸ Securing a child in a CRD before each automobile trip may at times be inconvenient, but the question of concern to a reviewing court would be whether a law mandating that action infringes upon a fundamental right.

An opponent of CRD legislation could claim that any one of several rights are infringed upon by such a law: the right to parental autonomy⁹⁹ and privacy;¹⁰⁰ the right to equal protection under the

93. *Kelly v. Johnson*, 425 U.S. 238 (1976); *Day-Brite Lighting, Inc. v. Missouri*, 342 U.S. 421, 423 (1952); *Prince v. Massachusetts*, 321 U.S. 158, 168-70 (1944).

94. *Day-Brite Lighting, Inc. v. Missouri*, 342 U.S. 421 (1952); *Jackson v. Massachusetts*, 197 U.S. 11, 25 (1905); *City of El Paso v. Simmons*, 379 U.S. 497, 508-09, *rehearing denied*, 380 U.S. 926 (1964).

95. See *Paris Adult Theatre I v. Slayton*, 413 U.S. 49 (1973); *NAACP v. Alabama*, 377 U.S. 288 (1964); *Guldblatt v. Town of Hempstead*, 369 U.S. 590 (1962).

96. "The legislature may devise *reasonable* schemes for regulations of activities which affect the health and safety of the public." *People ex rel. Dunbar v. Kogul*, 179 Colo. 394, 399, 501 P.2d 738, 740 (1972) (emphasis in original).

97. Fundamental rights are those rights "implicit" in the concept of ordered liberty." *Palko v. Connecticut*, 302 U.S. 319, 325 (1937).

98. *In re Interrogatories of the Governor*, 97 Colo. 587, 596, 52 P.2d 663, 667 (1935). One example of a law which puts the burden of compliance on individuals is COLO. REV. STAT. § 33-31-105 (1973 & Supp. 1979). This law makes it the duty of a boat owner or operator — not of the boat manufacturer — to provide an adequate life preserver for each person on board.

99. Parental rights are afforded constitutional protection against unwarranted or unreasonable interference by the state. *Planned Parenthood v. Danforth*, 428 U.S. 52, 73 (1976); *Wisconsin v. Yoder*, 406 U.S. 205 (1972); *Meyer v. Nebraska*, 262 U.S. 390 (1923). See also *Smith v. Organization of Foster Families*, 431 U.S. 816, 842-44 (1977); *Ginsberg v. New York*, 390 U.S. 629, 639 (1968).

law;¹⁰¹ and the right to free and unrestricted travel between the states.¹⁰² The last claim can be quickly dispensed with by once again analogizing to the helmet cases, which consistently held that the right to travel was not unreasonably restricted by requiring motorcyclists to obtain and use a relatively inexpensive piece of safety equipment.¹⁰³ This right was not infringed even though the helmet statutes were written to apply to all, and not just resident, motorcyclists travelling on the enacting state's roads.¹⁰⁴ The CRD laws are not as broad as the helmet statutes since they typically apply only to resident parents or to those driving vehicles registered in the enacting state. Non-resident tourists therefore would not be subject to the law's provisions.

Parental Autonomy and Privacy. The allocation of power between parent and state in making decisions concerning the best interests of the child is always a sensitive issue. Supreme Court cases have "consistently recognized that the parents' claim to authority in their own household to direct the rearing of their children is basic in the structure of our society."¹⁰⁵ Indeed, the integrity of the family unit has found protection in the Due Process¹⁰⁶ and Equal Protection¹⁰⁷ Clauses of the fourteenth amendment and in the ninth amendment.¹⁰⁸

Despite this high regard for the family unit, laws which restrict parental autonomy in order to further the welfare of children are usually sustained. Such laws are struck down only if they are arbitrary and capricious. For example, a law attempting to promote good citizenship by banning the teaching of foreign languages in elementary schools was struck down in *Meyer v. Nebraska* on these grounds.¹⁰⁹ Similarly, if the state's objective in passing the law is not sufficiently compelling to overcome a parental objection based on a

100. Fundamental rights include the "right of personal privacy, or a guarantee of certain areas or zones of privacy." *Roe v. Wade*, 410 U.S. 113, 152 (1973). The source of this right is not specifically defined, but is derived from the first, third, fourth, fifth, and ninth amendments, the penumbra of the Bill of Rights, and the guarantee of liberty in the fourteenth amendment. *Griswold v. Connecticut*, 381 U.S. 479, 481-85 (1965).

101. U.S. CONST. amend. XIV.

102. The states may not enact rules and regulations which unreasonably burden the right to travel freely between the states. *Shapiro v. Thompson*, 394 U.S. 618 (1969).

103. See, e.g., *Love v. Bell*, 171 Colo. 27, 36, 465 P.2d 118, 123 (1970).

104. See, e.g., *COLO. REV. STAT. § 42-4-231* (1973) (repealed 1977).

105. *Ginsberg v. New York*, 390 U.S. 629, 639 (1968).

106. *Meyer v. Nebraska*, 262 U.S. 390, 399 (1923).

107. *Skinner v. Oklahoma*, 316 U.S. 535, 541 (1942).

108. *Griswold v. Connecticut*, 381 U.S. 479, 496 (1965) (Goldberg, J., concurring).

109. 262 U.S. 390 (1923).

freedom of religion claim it will be held void.¹¹⁰

CRD statutes could not be invalidated under either theory. These laws are narrowly drawn, requiring the use of an effective, readily available device designed specifically for the purpose of protecting children in motor vehicles, and are therefore not vulnerable to charges of arbitrariness or caprice. Nor could these laws, which are essentially traffic safety regulations, conceivably be subject to any objections based on religious grounds. In short, the statement that it is "fundamental . . . that parental rights must yield to the interest and welfare of the child"¹¹¹ would appear to be particularly uncontroversial when applied to the issue of highway safety.

Parental rights are based to a large extent on the broader claim of a right to privacy—the "right to be let alone."¹¹² This broader right itself is not unreasonably infringed upon by traffic regulations, as aptly pointed out by the Wisconsin Supreme Court:

There is no place where any such right to be let alone would be less assertible than on a modern highway. . . . When one ventures onto such a highway, he must be expected and required to conform to public safety regulations and controls, including some that would neither have been necessary nor reasonable in the era of horse-drawn vehicles.¹¹³

Equal Protection. CRD statutes distinguish between children less than four years old and all other highway users. If a court were convinced that no rational basis existed for this distinction, it could void such legislation on the ground that it denies the public equal protection under the law. A statutory discrimination will not be invalidated, however, if any state of facts reasonably can be conceived to justify it.¹¹⁴

When reviewing CRD legislation, a court could rely on several supporting factors to sustain the legislature's classification. A court could find that members of the statutorily created class of children four years of age or younger face a greater risk of injury or death than do others in accident situations, are incapable of making ra-

110. *Wisconsin v. Yoder*, 406 U.S. 205 (1972).

111. *Stjernholm v. Mazaheri*, 180 Colo. 352, 356, 506 P.2d 155, 157 (1973). *See also* *Fulton v. Martensen*, 129 Colo. 125, 267 P.2d 658 (1954); *Graham v. Francis*, 83 Colo. 346, 265 P. 690 (1928).

112. *Olmstead v. United States*, 277 U.S. 438, 478 (1928) (Brandeis, J., dissenting).

113. *Bisemus v. Karns*, 42 Wis. 2d 42, 55, 165 N.W.2d 377, 384 (1969), *appeal dismissed*, 395 U.S. 709 (1969).

114. *Dandridge v. Williams*, 397 U.S. 471, 485 (1970), *rehearing denied*, 398 U.S. 914 (1970).

tional choices to further their self-preservation, and are not afforded the same degree of protection by existing safety belts as are older passengers for whom such belts are designed.¹¹⁵ Furthermore, although all legislatively imposed age restrictions are arbitrary to some extent, the class delineated by CRD legislation is not unreasonable since it corresponds to that class for which CRDs are designed and manufactured.¹¹⁶ These factors could support a finding that a state of facts sufficient to justify the statutory distinction exists.

Finally, it should be noted that although all automobile passengers could benefit by mandatory seatbelt laws, the fact that such laws have not been enacted is insufficient to void CRD laws under the Equal Protection Clause. A law will not be invalidated for violating that Clause merely because the legislature has not "comprehensively remedied all problems at once—it is entitled to proceed one step at a time."¹¹⁷

In sum, CRD legislation is valid under both the "ends" and the "means" prongs of the police powers analysis. The state is operating in traditional areas when it seeks further highway and child safety, and no fundamental rights are threatened when the state mandates the use of appropriate equipment in attempting to attain that safety objective.

CIVIL PROCEEDINGS

Aside from the constitutional issues, the legal ramifications which could attend CRD legislation in certain civil cases remain to be examined.¹¹⁸ Although the only two CRD laws currently in force expressly provide that a breach of their respective terms may not be

115. See text accompanying notes 9-25 *supra*.

116. See note 2 *supra*.

117. *Bushnell v. Sapp*, 194 Colo. 273, 280, 571 P.2d 1100, 1104 (1977).

118. CRD statutes could also have an impact on certain criminal proceedings, particularly vehicular homicide and vehicular assault cases. Drunk driving typically is a misdemeanor, but if death to another results, it may be filed as vehicular homicide, a felony. If a drunk driver collides with a vehicle in which an unsecured child is riding and the collision results in the death of that child, a decision to file a felony charge against the drunk driver may pose problems. In Colorado, for example, such a charge can be brought only against a person whose wrongful acts were the "sole proximate cause" of a highway death. *Goodell v. People*, 137 Colo. 507, 509, 327 P.2d 279, 280 (1958). If the child would not have died had he been properly secured in a CRD, then the failure to use that device would be another proximate cause of his death. Hence, felony charges could not be lodged against the drunk motorist.

The problem is not merely a speculative one, for prosecutors in Michigan have contacted state highway officials to seek advice on this particular issue. Telephone interview with David Shinn, Driver and Vehicle Admin., Mich. Dep't of State, July 1980.

raised in any civil action,¹¹⁹ future enacting states may pass such laws without this limitation. The discussion below evaluates the impact which a CRD statute without a "no liability" clause could have in negligence lawsuits.

Civil Liability

Negligence per se. In the absence of CRD legislation, a suit for negligence brought on behalf of a child injured in an automobile accident against the child's driver would face serious obstacles. Typically, in order to support a negligence claim, the burden is on the plaintiff to establish by a preponderance of the evidence that the defendant owed him a certain standard of care, that the standard was breached, and that the breach was a cause of the harm suffered.¹²⁰ Without a CRD law in force the plaintiff's burden on the question of "standard of care" would be substantial. He would have to assume the burden of educating and persuading six or twelve peers from the community on the practicality and wisdom of CRDs. The fact that the community as a whole has shown little inclination to use child restraints indicates the size of the plaintiff's task in proving this element of the case.

Were a CRD-use law in existence, however, the mere fact of its enactment would greatly lessen the plaintiff's burden. In passing that law, the legislature would have established in specific language the appropriate standard of care which was owed by the defendant, and that question would be removed from the jury's consideration.¹²¹ In other words, the plaintiff could show that the defendant acted negligently simply by showing that the defendant breached the statute. The only further burden the plaintiff would have in this negligence *per se* claim would be to show a causal link between the harm suffered and the negligent act or omission.¹²²

As previously shown,¹²³ proof of causation should not be difficult, particularly if the child's injuries resulted from his ejection from the vehicle, or from his collision with some portion of its inte-

119. See notes 33 and 41 *supra*.

120. See cases cited in W. PROSSER, HANDBOOK OF THE LAW OF TORTS 143 (4th ed. 1971).

121. See, e.g., *Martin v. Herzog*, 228 N.Y. 164, 126 N.E. 814 (1920); *Konow v. Southern Pacific*, 105 Ariz. 386, 465 P.2d 366 (1970); *Zerby v. Warren*, 297 Minn. 134, 210 N.W.2d 58 (1973); *Stahl v. Cooper*, 117 Colo. 468, 190 P.2d 891 (1948).

122. See, e.g., *Plains Transport of Kansas v. Baldwin*, 217 Kan. 2, 535 P.2d 865 (1975); *Pratt v. Thomas*, 80 Wash. 2d 117, 491 P.2d 1285 (1971); *Hamilton v. Gravinsky*, 28 Colo. App. 408, 474 P.2d 185 (1970), *modified*, 174 Colo. 206, 483 P.2d 385 (1971).

123. See text accompanying notes 10-25 *supra*.

tempts to shift some of the responsibility for the harm done to the injured child to that third party, but no doctrine would provide this original defendant with complete immunity from liability. Contributory or comparative negligence statutes which limit or totally bar the payment of compensation to a plaintiff would be inapplicable to CRD related lawsuits. Those statutes apply only when the plaintiff has been shown to have contributed to his injuries by his own careless actions.¹³⁰ A pre-school aged child is, in many states, legally incapable of negligence,¹³¹ and his failure to look out for his own safety cannot be raised as a defense in any suit in which that child is a plaintiff.¹³²

Nor can the defendant obtain complete immunity from liability by claiming contributory negligence due to the carelessness of a plaintiff child's parents. The "doctrine that the negligence of the parents of a child of tender years shall be imputed to the child" was dismissed in one early case as "not only unsound, but absurd and inhuman,"¹³³ and that doctrine is universally rejected today.

The child's driver, on the other hand, stands a better chance of claiming immunity if he is brought into the negligence case as a third party defendant. If he is unrelated to the plaintiff he can seek to avoid liability under any guest statutes which exist in that state. These laws, which are no longer as prevalent as they once were, prevent a person from suing his "host" driver for any injuries sustained while riding as a non-paying passenger in that driver's vehicle.¹³⁴ The laws have been justified in part by an "assumption of the risk" type of theory and for that reason have often been held inapplicable to young children.¹³⁵ The child's driver has a much better chance of claiming immunity, and therefore of imposing the full cost of compensating the child on any other defendants, if he is the plaintiff

130. See, e.g., *COLO. REV. STAT. § 13-21-111* (1973 & Supp. 1979). The Colorado court has made it clear that "[t]he comparative negligence statute is inapplicable where no negligence on the part of the plaintiff can be proven." *Donham v. Kampman*, 37 Colo. App. 233, 236, 547 P.2d 263, 266 (1975), *aff'd*, 192 Colo. 448, 566 P.2d 91 (1977).

131. See, e.g., *Lewis v. Buckskin Joes*, 156 Colo. 46, 396 P.2d 933 (1964) (children of "very tender years" are incapable of negligence and assume no risks).

132. See, e.g., *Majors v. J.C. Penney Co.*, 31 Colo. App. 568, 506 P.2d 399 (1972) (six year old child incapable of contributory negligence).

133. *Denver City Tramway Co. v. Brown*, 37 Colo. 484, 493, 143 P. 364, 368 (1914). See also W. PROSSER, *HANDBOOK OF THE LAW OF TORTS* 490 (4th ed. 1971).

134. See *Brown v. Merlo*, 8 Cal. 3d 855, 516 P.2d 212, 106 Cal. Rptr. 388 (1973).

135. See, e.g., *Burhans v. Witbeck*, 375 Mich. 253, 134 N.W.2d 225 (1965); *Wood v. Morris*, 109 Ga. App. 148, 135 S.E.2d 484 (1964); *Green v. Jones*, 136 Colo. 512, 319 P.2d 1083 (1957).

such lawsuits will tend to preserve family harmony.¹⁴² In any CRD related action, the plaintiff would necessarily be a very young child, incapable of maliciously plaguing his parents with lawsuits. The decision to bring a suit on his behalf will most likely be made by the child's parents, with an awareness that their liability insurer will be the true defendant. Under those circumstances, commencing an action is not evidence of a family's internal strife, but rather of the "provident management of its affairs."¹⁴³

The invalidity of the first two arguments, which ignore the existence of liability insurance, must be conceded before credence can be given to the third argument: allowing children to sue their parents will lead to widespread collusion and fraud against insurance companies.¹⁴⁴ A trust in the jury system and its ability to distinguish between valid and fraudulent claims is the first step which must be taken to reject the argument. The courts have consistently reaffirmed that trust and have relied on juries to prevent injustice to insurance companies in automobile cases between husbands and wives¹⁴⁵ and between close friends.¹⁴⁶ No readily apparent reason exists for refusing to extend that trust to cases involving a parent and child.¹⁴⁷ Indeed, an attempt by a parent to defraud an insurance company in a case which centered on the lack of CRD use would be quite difficult. Because of his age, the plaintiff could not be an active participant in the scheme and could not be counted on to convincingly fake a non-existent harm.

The strongest reason for abrogating parental immunity, at least under the limited circumstances of a CRD law, is largely unrelated

142. The family harmony argument originated in *Ruller v. Roller*, 37 Wash. 242, 79 P. 788 (1905), a much maligned case in which a daughter was prevented from bringing a civil action for rape against her father based on the family harmony theory.

143. *Badigan v. Badigan*, 9 N.Y.2d 472, 479, 174 N.E.2d 718, 723, 215 N.Y.S.2d 35, 41 (1961) (Fuld, J., dissenting).

144. See *Windauer v. O'Connor*, 13 Ariz. App. 442, 477 P.2d 1157 (1971), modified, 107 Ariz. 267, 485 P.2d 561 (1971); *Breinmecke v. Kilpatrick*, 336 S.W.2d 68 (Mo. 1960); *Small v. Rockfield*, 66 N.J. 231, 330 A.2d 335 (1974).

145. See, e.g., *Rains v. Rains*, 97 Cal. 19, 46 P.2d 740 (1935) (abolished interspousal immunity in the context of an automobile negligence case).

146. See, e.g., *Johnson v. Hassett*, 217 N.W.2d 771 (N.D. 1974) in which the court noted the "good sense of the juries" as a protection against fraud in the absence of a guest statute.

147. In abrogating parental immunity, one court stated: "Even assuming that a few fraudulent and collusive claims will slip through judges and juries (and there is no empirical [sic] evidence that the assumption is valid) we believe that this price would not be too great since the alternative is to continue a prophylactic rule which indiscriminately bars all claims." *France v. A.P.A. Transp. Corp.*, 36 N.J. 500, 505, 267 A.2d 490, 493 (1970).

American
Academy of
Pediatrics



563-1948

March 16, 1984

Alaska Chapter

Chairman
Clinton B. Lillibridge,
M.D.
4001 Dale Street,
Suite 213
Anchorage, 99508

Alternate Chairman
Tom Porter, M.D.
Dept. of Pediatrics
Box 7-741
Anchorage 99510

Secretary-Treasurer
Charles Ryan, M.D.
3300 Providence Drive,
Suite 206
Anchorage 99504

Representative Charlie Bussell
House Judiciary Committee
Pouch V
Juneau, AK 99811

Re: House Bill 464 regarding child passenger restraints
(Cato's bill)

Dear Representative Bussell:

In our telephone conversation on Friday, March 9th, you indicated you were philosophically opposed to such legislation as it interfered with the family's responsibility to care for their own children.

I disagree with this opinion for the following reasons:

Twenty percent of accidents in which unrestrained children are involved are actually caused by the child. Alaska Department of Highway Safety statistics show that 253 serious injuries and 9 deaths occur to children each year (1979 - 1981 data). This translates into approximately 50 serious injuries and 2 deaths caused because people are not acting responsibly by buckling in their children. Philosophically, I can permit you to swing your fist all you want as long as you don't hit anyone innocent. When your fist contacts my nose, that's no longer a matter of your relationship with your fist. That action then becomes a matter of public concern.

This is not a matter of inconvenience to the parents. This is smashed heads, crushed babies, bleeding, dying, agony! Education programs and seat loaner programs achieve only 15-19% compliance in many states that have tried this approach over many years.

Many children are killed and more children are maimed from riding in automobiles than any other risk. In fact, the second and third causes of death (congenital malformations, prematurity and sudden infant death syndrome) combined do not add up to the carnage produced by the automobile.

You, as a legislator, can do more to save lives than the combination of all the pediatricians in Alaska.

Your refusal to support this issue strongly is parallel to being passive regarding the murder of unborn children by the abortionists.

Representative Charlie Bussell

March 16, 1984.

Page Two

The pediatricians of Alaska, in their quarterly meeting March 8th, unanimously supported passage of House Bill 464. I look forward to hearing that you also support it.

Sincerely yours,

A handwritten signature in cursive script that reads "Clint Lillibridge".

Clinton B. Lillibridge, M.D.
State Chairman

CBL:ken

BRIEFING PAPER CS SB 163 (Rules)

The Department of Health and Social Services has two vested interests in seeing this bill enacted this session:

- 1) it will improve the health status of our children and
- 2) it will ^{probably} save the Department money.

Point No. 1. Regarding health status: Accidents kill and injure more Alaskan children than any other disease, infection, or condition. When we examine the specifics of these accidents using the tools of epidemiology and common sense it is clear that ~~the greatest~~ ^{major} reductions can be derived from occupant protection on our streets and highways. Child safety devices (car seats) have been available for 10-15 years. When properly used we know they save infants and children from death and injury in event of a crash or sudden stop.

Experience has shown that utilization of car seats improves somewhat with just education and loaner programs. But, the biggest improvements have been experienced only after enactment of mandatory child safety device legislation. Tennessee has led the nation in this mandatory approach. Their experience over a seven year period has demonstrated a 55% reduction of highway fatalities of children under 4 years of age, from an average of 15-20 deaths per year before mandatory usage to 6-10 deaths per year after enforcement. This enforcement has leveled off at approximately 4,000 citations per year in Tennessee. That is an average of one child's life saved for every 500 citations. Would your child's life be worth that investment?

According to the Michigan EMS Office, one year after a child passenger safety law went into effect in April, 1982, which required children under 4 years old to be restrained in approved passenger safety devices while travelling in automobiles, the death rate for children under 4 dropped 35 percent. A survey during this same period showed that use of child restraints rose from 6% to 82%.

An article in Pediatrics in 1981 reported a study by R.G. Schurtz in Washington State that showed when children under 4 are properly restrained in automobiles, deaths in crashes can be reduced by up to 90% and injuries can be reduced up to 63%.

The issue of protection of civil rights has been raised as an argument against passage of this bill. ^{we} ~~I~~ submit the same argument, protection of an individual's rights, can be made for passage if you consider the child's rights, a child who cannot exercise his/her own right to health and growing up to be a productive citizen. If parents fail to protect the child's interests, then the state has an obligation to do so - particularly in an instance of this nature where the protection is cheap, not intrusive, and actually contributes to improved behavior of children.

At the recent meeting of the Regional EMS Coordinators and State Advisory Council on EMS in Juneau a couple of weeks ago, they unanimously endorsed legislation to require child restraints in automobiles. Emergency medical responders report that they have seen too many accidents in which small children were seriously injured or killed because they were not properly restrained in child passenger safety devices. One member reported a case in Fairbanks a couple of years ago where an infant was crushed in his mother's arms when she hit the dashboard in an auto crash. Any preventable death or serious injury is tragic, but it is even more tragic when this happens to an infant or small child, especially when it often can be so easily prevented.

According to the Insurance Institute for Highway Safety, 42 states have passed some type of child restraint legislation. Most states provide for citations if parents are transporting an unrestrained child in an automobile, but there usually is no fine if they prove they have obtained a child restraint device within a certain period of time. These laws are not meant to be punitive, rather, they are designed to protect the lives of small children who cannot look out for their own well-being. Furthermore, many parents still may not be aware of the hazards of transporting unrestrained children in cars. No doubt the mother in Fairbanks, whose infant died in her arms, would rather have had a citation, than a dead child. She probably didn't realize that carrying the infant in her arms was potentially lethal.

Point No. 2. Saving money: Please consider the out-of-pocket costs of passing this legislation versus the costs of your letting the bill die in this committee. ^{The} ~~My~~ ^{of Public Health} Division has the Handicapped Children's Program that covers medical expenses of chronic, handicapping conditions of children. For every death on the highway there are 10 serious injuries, some of which result in lifelong handicaps like cerebral palsy, mental retardation, seizures, and paralysis. ^{The Handicapped Children's} ~~Our~~ program and other third party payors (Medicaid, Insurance, Catastrophic Illness - all programs that are familiar to this body's finance committees) ^{likely} will have reduced expenditures if you pass this legislation.

A couple of the EMS Coordinators said they would rather see passage of this legislation than an increase in their budget this year. They felt that actions to prevent deaths and injuries are more important than spending more money on treatment, even though improved emergency medical treatment is extremely important.

We know of ^{few} ~~no~~ other public health programs which can have as great an impact immediately on saving lives or reducing disabilities in small children, and saving the state money at the same time, as legislation requiring child passenger safety devices.

SECTIONAL ANALYSIS: CS SB 163 (Rules)

An act relating to the use of child safety devices in motor vehicles

*Sec. 1 AS 28.05.095 is amended by adding new sections to read:

Sec. 28.05.095 CHILD SAFETY DEVICES.

(a) requires children under the age of seven to be properly secured while being transported in a motor vehicle in Alaska if

(1) in a front seat and under the age of four, in an approved child safety device (CSD)

(2) in a back seat and under the age of four, in an approved CSD or in a seatbelt

(3) between the age of four and six in an approved CSD or a seatbelt

(b) exempts the following vehicles and passengers

(1) mass transit vehicles (school bus, taxi, emergency vehicles etc.)

(2) off road vehicles (ATV's, snow mobiles, motorcycles etc.)

(3) children exempted by regulations under AS 28.05.096 (handicapped, disabled, or children with physical or medical conditions that preclude the use of standard restraining devices).

(4) when all seats equipped with seatbelts are occupied by passengers using the seatbelts

(5) when the motor vehicle is not equipped with seatbelts

(6) motor vehicles exempt under AS 28.10.011(11) - (areas in Alaska not connected to the state marine or road highway system, specifically northern and western Alaska).

(c) prohibits a person removing seatbelts from passenger vehicles in order to be exempted under (b) (4) or (5)

Sec. 28.05.096 EXEMPTIONS; ALTERNATIVE SAFETY DEVICES.

(a) permits the Commissioner of public safety to adopt regulations to exempt a child or class of children from the requirements of this bill if it's determined a CSD is impractical because of physical or medical conditions.

(b) permits the Commissioner to designate alternative means of protection for children exempted under this section

Sec. 28.05.097 PENALTY.

(a) Any person convicted of violating AS 28.05.095 (a) or (c) is guilty of an infraction and eligible for a fine and demerit points against their driver's license unless

(b) they provide a peace officer, within 30 days of issuance of the citation, proof of purchase or acquisition and installation of an approved CSD. If the proof is provided within 30 days the citation is dismissed and no points are assessed under (a) of this section unless

(1) they have been convicted previously for violating that section by failing to provide a CSD or seatbelt

(2) they have been cited for failure to provide a CSD or seatbelt and forfeited the bail required by the citation; or

(3) provided the proof required by this subsection on a prior occasion

* Sec. 2. Effective date is one year after enactment.

STATE OF ALASKA 1984 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date: _____

REQUEST

Bill/Resolution No.: HCS CSSB163(JUD)
Title: "An Act relating to the use of child safety devices..."

Sponsor: Sen. V. Fischer
Requestor: House Judiciary
Date of Request: _____

FISCAL DETAIL

Agency Affected: Public Safety
Program Category Affected: Life & Property Protection

BRU, Program or Subprogram(s) Affected: Highway Safety Planning Agency

EXPENDITURES/REVENUES: (Thousands of Dollars)

	FY 84	FY 85	FY 86	FY 87	FY 88	FY 89
OPERATING						
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 SUPPLIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS, CLAIMS						
800 MISCELLANEOUS						
TOTAL OPERATING						

CAPITAL	100					
---------	-----	--	--	--	--	--

REVENUE						
---------	--	--	--	--	--	--

FUNDING: (Thousands of Dollars)

GENERAL FUND	100					
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

SOURCE OF FUNDS TO OFFSET FISCAL IMPACT OF BILL:

ANALYSIS: Attach a separate page for analysis

Prepared By: House Judiciary Committee
Division: _____

Phone: 465-4990

Date: 16 May, 1984

Approved by Commissioner: Rep. Charlie Bussell
Agency: Chairman

Date: 16 May, 1984

Distribution (by Agency preparing fiscal note):

- Legislative Finance
- Legislative Sponsor
- Requestor
- Office of Management and Budget
- Impacted Agency(ies)

12/1/83



Official Business

Alaska State Legislature

Senate Committee on State Affairs

Vic Fischer, Chair • Pouch V
Juneau, Alaska 99811
(907) 465-4954

MEMORANDUM

TO: Rep. Charlie Bussell
Chair, House Judiciary Committee

FROM: Sen. Vic Fischer

DATE: February 22, 1984

SB 163, a bill relating to the use of child safety devices (car seats), is currently before the House Judiciary Committee.

This bill is an important one for the children of Alaska and their parents. I believe it is the single most effective thing this legislature can do to address the greatest cause of death and serious injury to Alaska's children - automobile accidents.

In addition, it is a strong personal priority of mine. I would appreciate it greatly if you could schedule this bill for hearing before the committee at your earliest convenience.

Attached is back-up material for the committee. Please let me know if additional material is necessary.

Thanks.



Alaska State Legislature

Senate Committee on State Affairs

Vic Fischer, Chair • Pouch V
Juneau, Alaska 99811
(907) 465-4954

Official Business

To: Members, Alaska State Senate

From: Senator Vic Fischer

Date: February 7, 1984

Re: SB 163 - an act relating to the use of child safety devices in motor vehicles in Alaska

Senate Bill 163 is before the Senate today and I ask for your support. I believe this bill is the single most effective thing we will do this session to protect the life, health and safety of our children.

As of 1984, Alaska remains one of the few states in the Union that has no laws pertaining to the use of child restraints in automobiles. A massive education and advocacy program has gone on nationwide over the last decade, spearheaded by physicians, pediatricians, and public safety officials. There are compelling reasons for this. Among them are:

- * Automobile accidents kill more children under the age of five in the United States than are killed by the total of all major childhood diseases.
- * Because children's bodies have a higher center of gravity (an infants head comprises over 20% of body weight as opposed to 10% in adults) an infant becomes a high speed projectile, head first, in any accident, even those at relatively low speeds (20 mph).
- * Each year 4,300+ children under the age of five are killed in auto accidents and another 100,000 are injured.
- * Infants, particularly young infants, are at greater risk of death in automobile accidents than any other passenger.

Statistics on motor vehicle accidents in Alaska are equally compelling.

- * The number 1 cause of death in Alaska for ages 1-4 is accidents. The mortality rate for accidents in Alaska is 105% higher than the U.S.
- * 40% of all accidental deaths in Alaska for ages 1-4 are due to motor vehicle accidents.
- * In 1978 there were 137 fatalities in Alaska from motor vehicle accidents and 4,962 injuries. In all there were 15,030 motor vehicle accidents resulting in an economic loss of \$20,136,864.00.

* The average lifetime medical costs for a head-injured child are a staggering \$1,192,000! Virtually none of Alaska's citizens can afford that level of care, even with medical insurance. Subsequently, the state can expect to pick up the tab for medical costs for children needlessly injured in automobile accidents.

You may ask what can prevent such tragedy? The answer is specially constructed car seats. When used properly and consistently, these restraints can save 91% of the lives and prevent 78% of the injuries attributable to car accidents involving preschoolers. In spite of this, car seats or restraints are used for less than 7% of children under 4.

In response to this national tragedy, over 40 states have instituted child restraint laws in the last decade. These laws range from a polite request to criminal charges for failure to restrain children. In Alaska, we've chosen to take the "middle ground" in the form of SB 163.

WHAT SB 163 DOES

- * Requires children age 1-4 to be restrained in an approved car seat (or in lieu of a car seat, restrained in a seat belt in a rear seat).
- * Requires children age 4-6 to be restrained in an approved car seat or a seat belt.
- * Violation of this act is treated as an equipment violation with points assessed against your drivers license. If a person cited for failure to comply with this act shows a peace officer (including village safety officers) proof of having purchased or installed an approved CSD within 30 days of the infraction, the citation is dismissed.

WHAT SB 163 DOES NOT DO

SB 163 does not apply to:

- * A mass transit vehicle, a school bus, an emergency vehicle, a taxicab or other commercial vehicle.
- * A motor vehicle designed for and used primarily off the highway (RV's).
- * Vehicles that are not required to be equipped with seatbelts as original equipment.
- * Children riding as passengers in a motor vehicle in which all seating positions equipped with seatbelts or child safety devices are occupied by other passengers using the seatbelts or devices. (in other words, SB163 does not require anyone to install additional seatbelts above and beyond what the vehicle is normally equipped with).
- * Areas in Alaska not connected to the state road or marine

highway system, specifically Northern and Western Alaska.

WHY SB163 DESERVES YOUR SUPPORT

The leading cause of death to children age 1-4 in Alaska is automobile accidents. Seat belts and approved CSD's can be expected to reduce those deaths by 90% and to reduce injuries to preschoolers by 70%. The single most effective thing you can do to save the lives of children under age four is to see that every driver in Alaska uses child safety devices!

What those numbers mean in "real" terms is that there will be seven more children alive in Alaska the year SB 163 becomes effective than there will be without it. That's a pretty convincing argument to me.

Some more food for thought:

* In many states, extensive educational programs have been tried, with very little increase in usage. Education programs alone do not work.

* Use of a CSD will be more likely to save your child's life than all the immunizations, vitamin pills and preventative health care available to you.

* 20% of all motor vehicle accidents where children are passengers were caused by the children not being adequately and safely restrained while the vehicle was in motion.

* Your chances of being in a major vehicle accident is greatly increased by other drivers not adequately restraining their passengers.

* Most vehicle accidents in Alaska that result in serious injury or death occur in daylight, with dry roads and excellent driving conditions, within 25 miles of your home.

The legislature constantly deals with serious issues adversely affecting children in this state. Child abuse, assault, abandonment, disease, delinquency. All these issues literally keep us awake at night trying to find the best programs, adequate funding and trained staff to turn the tide of destruction and despair for Alaska's children. Funding for the above programs is considerable; funding for SB163 is nil.

Yet, as a legislator, the single most effective thing you can do to save Alaska's children from serious injury, dismemberment, and death is to vote for SB 163.

EFFECTIVENESS OF CHILD SAFETY DEVICES (CAR SEATS)
IN PREVENTING DEATH AND SERIOUS INJURY TO CHILDREN UNDER SEVEN YEARS OLD

ILLINOIS

Law went into effect July 1, 1983. In 1982 3,485 children were injured in automobile accidents, 27 killed. For nine months of 1983 there were 2,471 injured and 6 killed.

TENNESSEE

Before Tennessee passed their child restraint law between 20-25 children died each year in automobile accidents. The law was enacted in 1978. In 1980 there were 14 deaths (none of the children were restrained) and in 1981 10 deaths (in which one of the children was in an approved child restraint device).

MASSACHUSETTS

Massachusetts instituted an education program for the use of car seats in 1979. In 1980 they instituted mandatory car seat laws.

Usage of seat restraints	Education Program	Mandatory
Age 1 year	41%	70%
2 years	22%	49%
3 years	12%	40%

WASHINGTON STATE

In Washington state from 1970-79 39,500 accidents in which children were passengers claimed 148 children's lives. For 6,300 of those accidents where children were restrained, 2 died. Of the remaining 33,200 where children were not restrained 146 died.

The death rate for unrestrained children was 13 times as great than for restrained children. Twenty percent of the unrestrained children were being held on an adult's lap but were killed. Nine out of every ten adults holding the child were not killed.

WISCONSIN

Legislation was passed in 1982 with penalties enacted in 1983. From January to July of 1983 head injuries to children under 4 in automobile accidents was down 19%. Wisconsin is currently in the process of applying the law to all persons transporting children from the present requirement for guardians and parents only.

*This survey was done using a child passenger protection laws summary prepared by the State Relations Department of the Motor Vehicle Manufacturers Association and updated by the National Transportation Safety Board.

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C. 20594

SAFETY STUDY

Adopted: September 7, 1983

CHILD PASSENGER PROTECTION
AGAINST DEATH, DISABILITY, AND DISFIGUREMENT
IN MOTOR VEHICLE ACCIDENTS

INTRODUCTION

Motor vehicle accidents are the number one killer andcrippler of children in the United States. Infants and small children riding as passengers in motor vehicles are especially vulnerable to death, disability, and disfigurement, even in minor accidents and noncrash incidents, such as sudden stops. Although it is estimated that most fatalities and injuries to infants and small children in motor vehicles could be prevented by the proper use of child safety seats, 1/ safety seat use remains low, and most children continue to be transported in motor vehicles without proper protection.

In 1982, because of its increasing concern about the continuing high levels of highway fatalities and injuries, the National Transportation Safety Board began a study of child passenger protection as part of an expanded effort to concentrate its highway accident investigations and its other activities on safety problems having high potential for success in reducing fatalities and injuries.

In mid-1982, the Safety Board launched a series of detailed investigations of accidents involving infants and small children. Fifty-three investigations were conducted in 19 States by highway accident investigators in four field offices located in Los Angeles, New York, Kansas City, and Atlanta, and in the Safety Board's Washington, D.C., headquarters. The investigations examined the use and crash performance of child safety seats as well as accident consequences to infants and small children who were not traveling in child safety seats. The accident investigations were not intended to produce statistically representative accident data. The Safety Board selected each accident individually to obtain cases which would permit investigation of potentially significant safety issues in motor vehicle transportation of infants and small children. 2/

The 53 accidents were identified with the assistance of State and local law enforcement agencies, State highway safety agencies, and other organizations, including Physicians for Automotive Safety, the American Academy of Pediatrics, the American Association for Automotive Medicine, the National Child Passenger Safety Association and some of its State and local chapters, the Highway Safety Research Center of the University of North Carolina, the University of Michigan Transportation Research Institute, the Rehabilitation Institute of Chicago, the National Safety Council and some State and local safety councils, and some of the National Accident Sampling System teams of the National Center for Statistics and Analysis of the National Highway Traffic Safety Administration, U.S. Department of Transportation.

1/ In this report, "child safety seat" is used generally to refer to any of a number of types of child restraint systems, which include infant safety seats, toddler safety seats, convertible child safety seats, booster seats, safety harnesses, and handicapped child safety seats. For a complete description of each of these types, see appendix D.

2/ Case summaries of the 53 accidents investigated for the study appear at appendix E. For ease of reference, the case summaries are organized by topic and are numbered 1 through 53.

On December 7, 1982, based on the preliminary results of its initial investigations, the Safety Board issued Safety Recommendations H-82-59 and -60 to the Governors or Governors-elect of 31 States and the Mayor of the District of Columbia. (See appendix A.) Safety Recommendation H-82-59 urged the adoption of child passenger protection laws requiring the proper use of child safety seats, and Safety Recommendation H-82-60 urged the adoption of comprehensive, statewide child passenger safety programs. When the recommendations were issued, 19 States had passed child passenger protection laws requiring safety seat use. In the next 7 months, 22 more laws were enacted, bringing the nationwide total to 41 child passenger protection laws in 40 States and the District of Columbia. (Additionally, Pennsylvania enacted a law on November 1, 1983. Data hereinafter do not reflect this additional law.)

In early 1983, the Safety Board held regional public hearings in Dallas (January 13, 1983), Philadelphia (February 4, 1983), and St. Louis (March 24, 1983), on the problem of child passenger safety. The hearings were held to gather information for the public record and to increase public awareness of the problem of child motor vehicle deaths and injuries and the importance of proper child passenger protection. Testimony was received from 54 witnesses, including families of children involved in crashes, accident investigators and law enforcement officials, pediatricians and other medical personnel, highway safety and accident prevention specialists, and State legislators. (See appendix B.)

This report presents the findings and recommendations of the Safety Board's child passenger protection study. The report presents investigative results; illustrates the problem of deaths and injuries of infants and small children in motor vehicle accidents and the benefits of proper use of child safety seats; identifies misuse of child safety seats as a significant problem in accidents; identifies other problems and issues developed in the accident investigations; identifies a need for improvements in child passenger safety laws and programs; identifies elements for inclusion in an effective child passenger protection law; and includes further recommendations to reduce child passenger fatalities and injuries.

BACKGROUND

In the United States, more infants and small children under 5 years old are killed or crippled while riding as passengers in motor vehicles than the total killed or crippled by the seven common childhood diseases that children are immunized against. Motor vehicle accidents are the number one traumatic cause of epilepsy, and are a major traumatic cause of mental retardation and spinal cord injury in children. In the last 5 years (1978 through 1982), nearly 3,400 child passengers under 5 years old were killed in traffic accidents, ^{3/} and more than 250,000 more were injured. Most of these deaths and injuries are preventable; up to 90 percent of the fatalities and 67 percent of the disabling injuries could have been prevented by the proper use of child safety seats. ^{4/}

^{3/} Fatal Accident Reporting System data base, National Center for Statistics and Analysis, National Highway Traffic Safety Administration, U.S. Department of Transportation (See appendix C, "Child Passenger Fatalities by State, Age 0 through 4, 1978-1982").

^{4/} Robert G. Scherz, M.D., "Summary of Statistics on the Children Age 0-15 Years Who Were Passengers in Motor Vehicles Involved in Accidents," Washington State Seat Belt Study 1970-77, Mary Bridge Children's Health Center, Tacoma, Washington, 1978; and Robert G. Scherz, M.D., "Restraint Systems for the Prevention of Injury to Children in Automobile Accidents," American Journal of Public Health, Vol. 66, No. 5, May, 1976.

Child car seats have been available for some 50 years as a means of keeping children confined, supported, and elevated for better behavior and a better view from windows in motor vehicles. However, it has only been in the last 10 to 15 years that the injury prevention potential of child safety seats has been recognized and more fully developed as a result of the efforts of concerned physicians and engineers, initiatives by individual manufacturers, and the adoption of a Federal safety regulation.

Child safety seats are specially designed to prevent the infants or small children riding in them from striking the vehicle interior during a collision or sudden stop. In a head-on collision into a brick wall or a tree at 30 mph, the car stops almost instantly, but the occupants inside continue traveling forward at 30 mph, or 44 feet per second. Unless restrained by some means, the car's occupants will collide with brutal force into whatever object is in front of them — the instrument panel, windshield, steering wheel, or seatback. Previous accident investigations by the Safety Board have shown that a frontal collision into a tree can be fatal to an unrestrained adult at speeds as low as 19 mph. 5/

Modern child safety seats are designed to provide more protection for infants and small children than a standard vehicle safety belt. They work by using a safety harness or protective shield, or both, to distribute the crash forces over a larger area of the child's fragile body than a safety belt, and to cushion the body to a stop before the child can strike the vehicle interior.

Federal Safety Standard

All child safety seats marketed in this country must meet the requirements established by the National Highway Traffic Safety Administration (NHTSA) in Federal Motor Vehicle Safety Standard (FMVSS) 213, 6/ Child Restraint Systems, which became effective April 1, 1971. Through the efforts of Consumer's Union and concerned health and safety professionals, FMVSS 213 was later upgraded to include stricter requirements for safety seats manufactured on or after January 1, 1981. Currently FMVSS 213 requires that safety seats be dynamically tested in a simulated 30-mph frontal crash using a test dummy representative of a 6-month-old infant or a 3-year-old toddler (convertible safety seats must be tested with both dummies). During the tests, the forward movement of the dummy's head and knees and the amount of force exerted on the head and chest are measured. To pass the test, the seats must not allow such forces to exceed certain limits. Safety seats and booster seats which require use of a tether strap must pass both a 30-mph crash test with the tether strap used and a 20-mph "misuse" test without use of the tether strap. Safety seats designed with a nonprotective front armrest also must pass a misuse test at 20 mph with the harness unfastened and only the armrest in front of the dummy.

FMVSS 213 also requires that safety seat manufacturers label their products with certain basic instructions for use and that they provide a place on the safety seat where the complete, detailed usage instructions may be stored. The label must identify the manufacturer and must contain a statement warning the user that failure to follow the instructions exactly "can result in your child's striking the vehicle interior during a sudden stop or crash."

5/ Special Study of Motor Vehicle Collisions with Trees Along Highways, Roads and Streets: An Assessment, Report No. NTSB-HSS-81-1, May 13, 1981.

6/ Code of Federal Regulations, Title 49, Part 571, Section 571.213, U.S. Government Printing Office, Washington, D.C., 1982.

Although many child restraint systems have been certified under FMVSS 213 for motor vehicle use, few have received the approval of the Federal Aviation Administration (FAA), which specified additional testing requirements for child restraint systems for use in aircraft. 7/ In a February 24, 1983, recommendation letter (Safety Recommendation A-83-1) to the FAA, the Safety Board expressed its concern that the extremely limited availability of FAA-approved child safety seats not only limits the opportunity for children to be protected adequately during air travel, but also discourages families traveling by air from taking their child safety seats with them for motor vehicle use before and after the air travel portion of their trips.

To increase the availability of child safety seats for use before, during, and after air travel, in August 1983 the NHTSA began rulemaking action to combine the existing FMVSS 213 requirements and the separate FAA requirements into a single standard administered by a single agency. 8/ To speed certification of child restraint systems for use in both motor vehicles and aircraft, the NHTSA also began a program to test the ability of current child restraint systems to meet the FAA requirements for aircraft use.

Public Education and Safety Seat Loan Programs

Between the mid-1960's and the late 1970's, efforts to increase public awareness of the problem of child passenger safety spread from individual pediatricians and other concerned physicians to a wide variety of organizations. As early as 1963, two out of five pediatricians were counseling parents on the need to protect their children in motor vehicles; 9/ by 1978, the American Academy of Pediatrics began to expand its ongoing support for these efforts by developing a national "First Ride, A Safe Ride" program. The program, which was developed to encourage child safety seat protection for small children beginning with the newborn's first motor vehicle trip (usually the trip home from the hospital), was officially launched in 1980.

Some of the earliest organized efforts to educate the public about child passenger protection were undertaken by Physicians for Automotive Safety, a national organization now based in Armonk, New York. Through its efforts, child passenger safety education programs for new parents had been established in a number of hospitals throughout the country by the early 1970's, and with its help, concerned parents in Seattle, Washington, founded a national organization, Action for Child Transportation Safety (ACTS), in 1972. ACTS developed educational brochures, pamphlets, films, slides, posters, and bumper stickers; encouraged the development of public education programs in many communities throughout the country; and with funding from the NHTSA, ACTS developed an "Early Rider" educational curriculum for health professionals. After 10 years of active public service, ACTS was dissolved as a national organization due to financial and other reasons.

By the mid-1970's public education programs were being conducted by many hospitals, community volunteer and civic organizations, and State public health and highway safety agencies. Safety seat loan programs also were established by hospitals,

7/ On May 28, 1982, the FAA issued Technical Standard Order (TSO) C-100, Child Restraint Systems. The intent of this TSO is to describe the minimum performance requirements for infant and child restraint devices permissible for use on aircraft as "approved" seats.

8/ NHTSA Notice of Proposed Rulemaking, "Child Restraint Systems for Use in Motor Vehicles and Aircraft," Docket No. 74-09, Notice 13, Federal Register, Vol. 48, No. 158, August 15, 1983, pp. 36849-53.

9/ I.B. Pless, K. Roghmann, and P. Algranati, "The Prevention of Injuries to Children in Automobiles," Pediatrics, Vol. 49, No. 3, March 1972.

community groups, and public agencies to encourage safety seat use by making them widely available at nominal cost. The NHTSA sponsored two series of regional workshops during the 1970's to improve coordination and communication among the various groups involved and to foster the sharing of information about effective approaches to child passenger safety. Public education efforts also were supported at the Federal level by the U.S. Department of Health, Education and Welfare, which had developed printed materials to guide parents in selecting child safety seats as early as 1967. 10/

In 1981, the National Child Passenger Safety Association (NCPSA) was formed as a national non-profit organization dedicated to working with individuals, organizations, and government agencies to ensure the right of every child to protection against death or injury while being transported as a passenger in a motor vehicle. Its national headquarters is located in Ardmore, Pennsylvania, and it is affiliated with State and local child passenger safety associations throughout the country. NCPSA also serves as a central national clearinghouse to assure the uniformity and accuracy of child passenger safety information disseminated to safety and health professionals, legislators, and the public.

Public education and safety seat loan programs were effective in increasing safety seat use, especially when both programs were conducted together, 11/ but these programs alone were unable to bring about usage increases of the magnitude necessary to achieve proper protection for the majority of infants and small children nationally. While programs in some communities achieved significant increases in safety seat use, most children under 5 years old continued to be transported unrestrained even by safety belts, which are found almost universally in automobiles. 12/

Child Passenger Protection Laws

To increase the use of child safety seats and safety belts by infants and small children and reduce child passenger fatalities and injuries more effectively, most States have adopted a legislative approach. As of July 1, 1983, 40 States and the District of Columbia had enacted child passenger protection laws to "immunize" infants and small children against death, disability, and disfigurement in traffic accidents (see figure 1). Twenty-seven were already in effect on that date, and the remainder were scheduled to go into effect on various dates between then and July 1, 1984.

10/ Randy L. Perry, K.W. Heathington, John W. Philpot, C.A. Penty, and Mark Lo, Transportation Center, University of Tennessee, The Impact of A Child Restraint Law and a Public Information and Education Program on Child Passenger Safety In Tennessee, prepared for the National Highway Traffic Safety Administration, U.S. Department of Transportation, October 1980 (Report No. DOT HS-805 640).

11/ K.S. Reisinger and A.F. Williams, Evaluation of Programs Designed to Increase the Protection of Infants in Cars, Insurance Institute for Highway Safety, Washington, D.C., 1977.

12/ James L. Nichols, Ph.D., Effectiveness and Efficiency of Safety Belt and Child Restraint Usage Programs; The Safety Potential of Safety Belts, Child Restraint and Programs to Promote Their Use, National Highway Traffic Safety Administration, U.S. Department of Transportation, January 1982.

UNRESTRAINED INFANTS AND SMALL CHILDREN—UNSAFE AT ANY SPEED

Case 15: About 6:55 a.m. on April 16, 1983, a 1974 Chevrolet Chevelle sedan was traveling about 25 mph on a four-lane boulevard in Paramount, California, when the driver of a pickup truck approaching from the opposite direction attempted to make a left turn across the path of the Chevelle. The driver of the Chevelle braked sharply but was unable to avoid colliding into the right front of the pickup truck. The Chevelle was occupied by an 18-month-old girl seated on a fold-down center front armrest, her mother, who was driving, and her grandmother, who was seated in the right front. All three occupants were unrestrained and were thrown forward and to the left on impact. The mother and grandmother in the Chevelle and the driver of the pickup truck received minor injuries. The 18-month-old girl struck the windshield with her head, the instrument panel with her chest, and the gear selector lever with her neck. She died of multiple injuries within 10 hours after the accident. (NTSB Investigation No. LAX83HCR13)

Accident investigations conducted by the Safety Board show that it is extremely dangerous for an infant or small child to ride without proper protection in a motor vehicle at any time, under any circumstances. In the 23 accidents investigated involving unrestrained infants and small children, 18 children were killed and 9 were injured, including infants as young as 8 days, 5 weeks, and 7 weeks old.^{13/} Most of the accidents were not severe, and other (older) occupants of the same vehicle, while injured, survived.

The accidents which killed or injured unrestrained infants and small children included minor accidents and cases of severe braking without a collision on city business or residential streets, as well as more serious crashes on highways. Some of the children were killed or seriously injured on routine trips as little as 50 yards from the family's home while going to or returning from shopping, taking a child to a babysitter's, traveling to a local restaurant, going to visit grandparents or other relatives, driving a friend or relative to work, or taking the children out for ice cream.

The investigations illustrate that, far from being less subject to the risk of death or injury, unrestrained infants and children are more likely to be killed or to suffer severe injuries if they are being held in the arms of an adult or if they are ejected from the vehicle. Virtually all fatal and serious injuries to unrestrained children in the accidents investigated were head or spinal injuries resulting from being propelled into the instrument panel, windshield, or other interior surfaces, and from contacts with other unrestrained occupants. These injuries are common to all unrestrained infants and children. In addition, unrestrained children being held in the arms of an adult are often crushed into the instrument panel or other interior surfaces by the weight and acceleration of the adult holding them. Further, unrestrained infants and children who are ejected from the vehicle suffer collisions with exterior surfaces, such as another vehicle or the pavement, or are crushed by the vehicle's overturning on top of the child (in addition to injuries sustained from contact with the vehicle interior before or during ejection).

^{13/} The accidents involving unrestrained infants and small children were Cases 1-18, 25, 27, 29, 30, and 38.

The investigations show also that an unrestrained infant or small child is in danger of being killed or injured in certain common, everyday driving incidents even if the vehicle is not involved in a crash. Such noncrash incidents include sudden stops, swerves, turns, and children falling from moving vehicles.

In addition, unrestrained children can cause accidents which endanger not only the children involved and other occupants of the vehicles in which the children are riding, but other motorists, their passengers, pedestrians, and bicyclists.

The Vulnerability of Infants and Small Children to Fatal or Serious Injury

Medical witnesses heard by the Safety Board in the regional public hearings on child passenger safety identified several reasons why infants and small children are more likely to be killed or injured even in minor accidents or noncrash incidents. According to pediatricians and specialists in pediatric surgery and pediatric emergency medicine, infants and small children have less built-in anatomical protection against injury. Muscle mass, which provides some protection in adults, is less well-developed. The skull of an infant or small child is thin and soft, and an infant has an open fontanelle, or boneless area, which does not close until late in the first year of life. The ribcage of an infant or small child is flexible and offers less protection for the chest and upper abdominal organs. The spine also is less protected and susceptible to injury. Consequently, infants and small children are subject to a significantly higher risk of serious head, spine, chest, and abdominal injury in accidents than are older passengers. In infants and small children, the head is also large and heavy in relation to the body, resulting in a higher center of gravity. In an accident, the infant or small child is likely to be catapulted through the air toward the vehicle's point of impact head-first as a helpless "unguided missile" or human torpedo, into a violent collision with the vehicle interior.

When infants and small children are propelled against the vehicle interior, they do not benefit as much as adults from padding and energy-absorbing materials which, if they are provided, are placed in areas more likely to be contacted by adults. Infants and small children also are more likely to contact the protruding controls, knobs, door handles, window cranks, and ashtrays usually found on the instrument panel, doors, and seatbacks. Finally, injured children do not show symptoms of injuries in the way that adults do, and their injuries are more difficult to diagnose and treat effectively.

According to testimony given in Philadelphia by the President of Physicians for Automotive Safety:

In a crash, children are projected so frequently head-first, helpless missiles striking unyielding interior surfaces, or worse, are ejected from the car, sustaining so frequently irreversible brain damage. More American children have been rendered paralyzed, epileptic, or mentally retarded by car accidents than by any other trauma or crippling disease. Considering the rather delicate aspects of infant and child anatomy -- skin, torso, skeletal weaknesses -- the devastating injuries to [unrestrained] children in traffic accidents should be no surprise.

Children Riding in the Arms of Adults—The Most Dangerous Way to Travel



Figure 2.—Head-on Collision on July 27, 1982, near Addison, New York.

Case 1: About 5:15 p.m. on July 27, 1982, a Dodge sedan traveling on a two-lane State Route near Addison, New York, crossed the yellow centerline and collided head-on with a Ford sedan. The Dodge was occupied by three adults and two infants, all of whom were in the front seat unprotected by safety belts or child safety seats. The infants, ages 5 months and 15 months, were riding in the laps of their parents. The two infants were crushed into the dashboard by the weight and acceleration of their parents' bodies and died of massive head injuries. (See figure 2.) The parents and the driver survived with moderate injuries. (NTSB Investigation No. NYC82HCR05)

Case 2: About 5:28 p.m. on November 2, 1982, a Subaru station wagon occupied by a man, his wife, and their 5-week-old baby was traveling about 32 mph on East Riverside Drive in Austin, Texas, when it was struck head-on by a Ford sedan that crossed the centerline traveling about 57 mph. At the time of impact, the infant was being held in the arms of his mother while her husband drove. The mother and father, who were not using safety belts, received minor-to-moderate injuries. The 20-year-old driver of the Ford, who was charged with driving while intoxicated, received bruises on both legs. The baby was crushed into the dashboard by the weight and acceleration of his mother's body and died at the hospital from massive head injuries. (NTSB Investigation No. MKC83HCR02)

Eight of the accidents investigated involving 10 infants held in the arms of adults or of another child passenger illustrate why this is one of the most dangerous ways for infants or small children to travel in a motor vehicle. In these four frontal collisions and four side impact accidents, the 10 adults who were holding infants in their arms were unable to protect them from harm. Nine lap-held infants ranging in age from 5 weeks to 15 months were killed, and one infant survived with head and facial injuries.

The investigations show clearly that a mother's arms (or the arms of any person) are not a safe place for an infant in a motor vehicle. In a 30-mph collision, a 20-pound infant who is unrestrained can generate a propelling force of 300 to 600 pounds. Experiments have shown that even a restrained adult cannot hold onto and protect a lap-held infant in a moderate collision, and that many adults may not be able to protect a lap-held infant even in a minor collision. ^{14/} If the adult is unrestrained, the lap-held infant is subject to being crushed against the vehicle interior by the adult's body, which, being heavier, can generate a propelling force of several thousand pounds in a moderate accident.

In the frontal collisions, the six adults who were holding infants in their arms not only were unable to protect them, the adults also increased the severity of the injury to the infants. At least four of the infants were crushed into the dashboard or windshield by the bodies of the adults who were holding them, causing massive, fatal head injuries to the infants. In one accident, a lap-held infant was killed, although another infant who was lap-held in the rear seat received relatively minor head and facial injuries from being thrown into the rear of the front seatback. In all four frontal collisions, the lap-held infants who were killed were the only fatalities in the vehicle. None of the adults holding infants who were killed in frontal collisions received more than minor or moderate injuries because the infants cushioned the impact of the adult with the vehicle interior. In two cases, the infant's mother or grandmother reported that the baby was "still in my lap" or they were "still holding" the baby after the crash. Both infants were fatally injured by being crushed into the instrument panel.

In the side impact collisions, infants were propelled from the arms of the persons holding them and received fatal injuries from contact with the vehicle interior (or in one case, from being crushed by the vehicle after ejection).

The accidents investigated did not include any cases of a safety belt being fastened around both the adult and the infant in the adult's lap, although the Safety Board would expect this also to produce very severe crushing forces on the infant in a crash.

Increased Risk of Death for An Unrestrained Child Ejected from the Vehicle

Case 7: About 12:30 a.m. on July 26, 1982, a 1976 Chevrolet sedan occupied by a young couple and their two-year-old daughter who were returning home after a weekend visit to the child's grandmother was traveling on a two-lane State Route in Maddox, Maryland, when the driver failed to negotiate a curve and the vehicle ran off the road. The Chevrolet sideswiped a utility pole, severed a wooden signpost, and descended a 4-foot embankment, sliding on its side until it rolled over completely and came to rest on its wheels in a soybean field. The two unrestrained adults received minor injuries. The 2-year-old girl, who was sleeping unrestrained on the rear seat, was ejected from the vehicle and died of massive head injuries. (NTSB Investigation No. NY 82HCR03)

^{14/} D. Mohan and L. Schneider, "An Evaluation of Adult Grasping Strength for Restraining Lap-Held Infants," Human Factors, Vol. 21, No. 6, The Human Factors Society, Inc., 1979.

Case 8: About 6:25 p.m. on November 28, 1982, the driver of a 1982 Oldsmobile Custom Cruiser station wagon was cresting a hill on the New York Thruway when he saw the brake lights of vehicles stopping and colliding on icy pavement ahead and attempted to stop. The station wagon skidded first to the left, then to the right on the slight downgrade and struck the rear of a vehicle with its left side, shattering the left rear side window. The Oldsmobile was traveling about 27 mph when the impact occurred, and the vehicle it struck was traveling about 10 mph. The Oldsmobile was occupied by two adults in the front seat and their two children, who were sleeping on top of the folded down rear seatback which formed part of the station wagon's rear cargo area. The two restrained adults received minor injuries. The father, who was wearing a lap/shoulder safety belt in the driver's seat, sustained a strained shoulder and the mother, who was wearing a lap/shoulder safety belt in the right front, sustained a strain of the lower right leg. The two unrestrained children, ages 3 and 5 years old, were ejected from the cargo area through the shattered left rear window of the station wagon, struck the roof and hood of the other vehicle, and collided with the pavement. They slid on the ice and came to rest on the roadway and shoulder about 50 feet ahead of the vehicles' point of rest. Both children sustained multiple injuries, including fatal head injuries probably received when they struck the pavement. (NTSB Investigation No. DCA83HCR03)

A particularly serious hazard to unrestrained infants and small children in accidents, in addition to their being propelled into violent collisions with the vehicle interior and other occupants, is ejection from the vehicle. Ejection increases the potential for additional injury from windshield and window glass and collisions with the pavement, other vehicles, and other exterior objects, thereby compounding injury severity and further reducing the chances of survival. In five accidents investigated by the Safety Board, six unrestrained children under 5 years old and one 5-year-old were ejected from the vehicle during collision impacts or overturn (Cases 7-11). All but one of the children ejected were fatally injured. An additional accident involving a child seated on a safety seat in which he was not restrained by a safety harness or shield resulted in ejection with fatal injury (Case 42).

The only child ejected who was not fatally injured suffered serious injury in a minor accident (Case 9) in which the only other occupant of the vehicle, an adult who also was unrestrained, remained in the vehicle and escaped without injury. The 3-year-old boy who was ejected sustained a concussion and facial and knee abrasions from contact with the vehicle interior, and a fractured elbow. The boy's collision with the pavement probably contributed to the severity of his head injury.

One of the accidents involving ejection (Case 11) was an extremely severe head-on collision with a tractor-semitrailer. Two children who were unrestrained in the rear seat of the case vehicle and one unrestrained adult in the front seat were ejected and fatally injured. The unrestrained driver was thrown into the rear seat and remained in the vehicle, but was fatally injured. While the proper use of child safety seats probably would have prevented ejection and might have enabled the two children to survive, data on the performance of child safety seats under such extremely severe impact forces are insufficient to support a finding as to the probability of the children's survival in this accident had they been properly restrained. In this case, the possibility of the children's survival, even with proper use of child safety seats, was compromised by the unrestrained driver being thrown into the rear seat.

In their testimony in the regional public hearings, doctors and law enforcement officers cited other accidents involving ejection of children with fatal or severe consequences. One mother's testimony described an accident in which her unrestrained 3-year-old son was ejected and killed, while her unrestrained 22-month-old daughter remained in the car and survived, although she was severely injured. (See appendix F.)

Noncrash Incidents — Unrestrained Children Killed or Injured During Swerves, Turns, and Sudden Stops

Case 12: About 2:30 p.m. on October 28, 1982, a mother, her two children, and their grandmother were departing a local convenience grocery store in Mt. Vernon, Kentucky, to return home. The grandmother was driving her 1973 Chevrolet station wagon, and the children's mother was seated in the right front. Her 4-month-old daughter was properly harnessed in a child safety seat in the center front, and her 4-year-old son was in the rear seat. As they drove away from the store, the boy was standing up, leaning over the front seatback and playing with his sister. Suddenly, as the station wagon was negotiating a slight left curve, the 4-year-old boy fell to the pavement through the right rear door when it opened for undetermined reasons. Before his grandmother could stop the station wagon, the boy had been run over and fatally injured by the right rear wheel. (NTSB Investigation No. MKC83HCR01)

Three investigations of noncrash incidents highlight one of the most tragic and least recognized kinds of accidents that can occur to unrestrained child passengers -- the kind that involves no crash or external impact but results in death or injury to an unrestrained child. Each noncrash incident investigated involved a child either falling from a moving vehicle or being propelled into the windshield in a sudden stop.

In Case 43, a 2-month-old infant fell to the roadway when the partially open right front door swung wide as his mother backed the car into the road in back of their house. The infant was run over by the right front wheel of the car and fatally injured. Because the infant had been seated in a child safety seat with the harness not fastened and the safety seat not secured to the vehicle, the infant was considered unrestrained.

Case 13 involved a driver who made a sudden stop to avoid collision with another vehicle that made an unexpected maneuver. Although he was traveling only 25 to 30 mph, the driver was powerless to protect his unrestrained 4-year-old son. The boy was thrown head-first into the windshield and sustained moderate head and facial injuries, although the vehicle was not involved in a collision and no other person was harmed. In each noncrash incident investigated, the proper use of either a child safety seat or a safety belt would have prevented the child's death or injury.

Pediatricians and surgeons testified in the public hearings that in their professional experiences, cases of unrestrained children injured in noncrash incidents are common. One doctor described the case of a 6-month-old infant riding in his mother's lap, who was fatally injured in a sudden stop when his head was crushed against the instrument panel by his mother's body. No one else was injured in the incident. Evidence suggests that at least one out of every four or five children injured while riding as passengers in motor vehicles is injured in a noncrash incident. Moreover, because nonfatal, noncrash incidents typically are not reported to or investigated by police, more than 20 percent of all injuries to child passengers may not be included in motor vehicle injury statistics. ^{15/}

^{15/} Phyllis F. Agran, M.D., M.P.H., "Motor Vehicle Occupant Injuries in Noncrash Events," Pediatrics, Vol. 67, No. 6, American Academy of Pediatrics, June 1981.

In the course of normal law enforcement activities, law enforcement officers have significant opportunities to identify usage errors, to provide the user information as to how misuse errors can degrade safety seat performance, and to encourage corrective action. Data on safety seat use and misuse in actual crashes, which could be collected in police traffic accident reports and could be included in a State's traffic accident data system, are needed to identify the kinds of problems that are occurring, as a basis for adjusting child passenger safety programs to combat those problems more effectively. Some jurisdictions have conducted training for police on safety seat use, and an increasing number of jurisdictions have tried to improve the occupant restraint data collected in accident investigations and to ensure that limited child safety seat data are collected and reported to the traffic accident data system. Generally, however, these kinds of activities have been limited. In virtually all Safety Board-investigated accidents which involved safety seat misuse, the misuse was not identified in the police report of the accident.

Another reason for police training to identify safety seat misuse is that, in some cases, news reports relying on police-reported information will report that a child was killed in a safety seat in an accident, without reporting, for example, that the safety harness was not fastened around the child and that the child was, in effect, unrestrained. One accident investigated by the Safety Board in North Carolina (Case 3) was originally reported as involving an infant killed in a safety seat. The investigation established that the safety seat was being carried loose and unused in the rear of the car when the accident occurred. The prompt identification of safety seat misuse (or nonuse) in accidents can help to avoid unintentionally misleading media reporting, which may undermine the public education efforts undertaken by State and local jurisdictions.

Improving Safety Seat Design, Instructions, and Labeling.—The misuse problems identified in the accidents investigated by the Safety Board indicate that it is absolutely essential that safety seat design and instructions for use of safety seats be as simple, clear, and precise as possible. However, trained professional highway accident investigators familiar with child safety seats and their use found that instructions accompanying many safety seats involved in the accidents were complex, imprecise, confusing, and not clearly illustrated. This was especially true for convertible models where the thresholds specified for conversion from forward-facing to rear-facing orientation and for changes between infant and toddler harness routing were variously specified in terms of when a child can sit upright by himself, a height or height range, a weight or weight range, or a sitting height (which requires a special measurement exclusively for this purpose). In some cases, two different standards were used, and, in one case, the instructions specified the use of a cushion under the child "if the child sits too low in relation to the shield" without any guidance for determining how low is "too low."

In one study ^{23/} of factors affecting the acceptance and use of child safety seats, "observations made during the study concerned the role of the marketplace and Federal regulation in adversely affecting the design of child restraints. Marketing reactions to the preferences of ill-informed consumers have sometimes encouraged cumbersome and uncomfortable systems with "something in front," to the exclusion of innovations in the form of harness-only and other systems." The study concluded that child safety seat designers "need to concentrate on obvious, simple systems that accommodate real children."

^{23/} Kathleen Weber and Nancy Polchik Allen, "Child Restraint Systems: Factors Affecting Their Acceptance and Use," The HSRI Research Review, University of Michigan Highway Safety Research Institute, Ann Arbor, May-June 1982, Vol. 12, No. 6.

Some recent revisions of instructions have resulted in improvements. For example, Questor Juvenile Furniture Company made significant improvements in instructions issued with one of its safety seats, including improvements which were suggested by the findings of one of the Safety Board's first accident investigations for the child passenger protection study (Case 43). The instructions were revised with the assistance of a child passenger safety consultant engaged for that purpose. Some manufacturers also have begun to use labels on the safety seat to identify correct safety belt routing locations. These kinds of initiatives can help to make the correct locations readily identifiable, even when the detailed usage instructions are not available or are not used.

FMVSS 213 requires that child safety seats have an instruction label attached to the safety seat itself, and that a more detailed instruction booklet be furnished with the safety seat. However, in the accidents investigated, labels of some of the safety seats had been torn off or were missing, wrinkled and difficult to read, or abraded. In some cases involving misuse, including cases involving children who were killed or injured, the family did not have any instructions because they were not included with the seat when it was purchased second-hand at a yard or garage sale or when it was handed down by a friend or relative. Misuse appeared to be a prevalent problem in these cases, and some of the seats were incomplete, with part of the harness missing, when they were acquired. The family did not have the detailed usage instructions and did not realize that the safety seat was not complete.

SAFETY BELT USE BY SMALL CHILDREN

Case 52: About 11:45 a.m. on November 25, 1982, a 1979 Ford sedan occupied by a 17-year-old driver and his 18-month-old niece was traveling on a 2-lane U.S. highway near Cynthia, Kentucky, when the Ford crossed the centerline in a curve and collided head-on with a 1981 Oldsmobile sedan. The unrestrained 17-year-old driver of the Ford sustained fatal head, neck, and chest injuries. The 18-month-old girl, secured by an adult lap safety belt in the center front seating position, sustained minor injuries which included facial abrasions and a laceration of the upper lip. (NTSB Investigation No. ATL83HCR01)

Emphasis on the need for special protection for infants and small children may have led to an incorrect perception that safety belts do more harm than good to children in crashes. 24/ At a time when more children are riding in safety seats than ever before, nearly all infants and small children who are not riding in safety seats are being transported completely unrestrained -- without even the use of available safety belts -- and the use of safety belts by older children is rare. 25/ There appears to be a need to develop a better public understanding of the benefits and limitations of safety belt use by children both to encourage greater use of child safety seats and other child restraint systems for superior protection, and to reduce the incidence of children being transported unrestrained when safety belts are available.

24/ Physicians for Automotive Safety, "Safety Belts OK for Small Children," PAS News, Rye, New York, Fall 1982 - Winter 1982-83.

25/ James L. Nichols, Ph.D., Effectiveness and Efficiency of Safety Belt Usage Programs; the Safety Potential of Safety Belts, Child Restraints, and Programs to Promote Their Use, National Highway Traffic Safety Administration, U.S. Department of Transportation, January 1982.

Testimony at the public hearings and other research and accident data from several countries 26/ indicate that children of all ages (including infants) generally are safer in crashes if they are wearing safety belts, especially in the rear seat, than if they are unrestrained. Pediatricians and surgeons testified that adult safety belts can prevent the ejection of children, which would be likely to result in fatal or severe injury, and can prevent or reduce the occurrence of fatal and serious head injuries, irreparable brain damage, and other serious injuries which may be suffered by unrestrained children who are thrown against the vehicle interior or other passengers in a crash. Safety belt use also can be expected to be virtually 100 percent effective in preventing child fatalities and injuries in noncrash incidents. 27/

The limitations of safety belt use by children are known in a general sense, but have not been fully crash tested in the laboratory, or fully documented in actual crashes (largely because safety belt use by children is rare). Several decades of medical research beginning in the 1920's identified unique anatomical characteristics of infants and small children. In the 1950's and 1960's researchers examining the question of effective crash protection for children emphasized that infant and child anatomy differs from that of adults in a number of ways which make the use of adult safety belts less effective in protecting infants and children than adults. 28/ The increasing recognition of the need for more effective protection designed specifically for children led to the development of child safety seats and other child restraint systems. The medical evidence that is available and limited data on crash injuries to safety-belted children indicate that while safety belts prevent ejection and prevent or reduce impact injuries to children from contact with interior vehicle structures, safety belt-induced injuries can occur. The risk of these kinds of injuries to children appears to be significantly greater for infants, and generally appears to decrease with age. 29/ However, it is important to stress that this risk is less than the risk of transporting children unrestrained.

Parents and others transporting infants and small children need to be encouraged to at least use safety belts to protect child passengers who otherwise would be transported unrestrained. At the same time, crash test studies and further accident research are needed to provide the public, legislators, and others with better information about the benefits and limitations of safety belt use by children at various ages so that informed choices can be made about child passenger protection. Data currently available are inadequate to answer questions about the relative degree of safety provided by a safety belt to a child at various ages, what the limitations are, and the kinds of results that can be expected in crashes. There is a need especially for a greater understanding of the interaction of safety belts with the body regions where they can be expected to localize

26/ Allan F. Williams, Insurance Institute for Highway Safety, "Restraint Use Legislation: Its Prospects for Increasing the Protection of Children in Cars," Accident Analysis and Prevention, Vol. II, Pergamon Press, Ltd., 1979; Allan F. Williams and P. Zador, "Injuries to Children in Automobiles in Relation to Seating Location and Restraint Use," Accident Analysis and Prevention, Vol. 9, 1977; and John W. Melvin, Richard L. Stalnaker and Dinesh Mohan, "Protection of Child Occupants in Automobile Crashes," Proceedings of the 22nd Stapp Car Crash Conference, Society of Automotive Engineers, Warrendale, Pennsylvania, 1978.

27/ Phyllis Agran, M.D., M.P.H., Op. Cit.

28/ A.R. Burdi, D.F. Huelke, R. G. Synder, and G.H. Lowrey, "Infants and Children in the Adult World of Automotive Safety Design: Pediatric and Anatomical Considerations For Design of Child Restraints," Journal of Biomechanics, Vol. 2, Pergamon Press, 1969. (Presented at the American Society of Mechanical Engineers Third Biomechanical and Human Factors Division Conference at the University of Michigan, Ann Arbor, June 12-13, 1969.)

29/ Ibid.

crash forces — the pelvis, abdomen, spine, chest, and neck — at different stages of child anatomical development.

Proper child passenger protection for older children also remains a problem. Motor vehicle accidents are the leading cause of death for children at all ages after the early weeks of life. In 1982, nearly 3,500 children ranging from age 5 to age 17 were killed in traffic accidents in the United States. In passenger cars and trucks only, during the last 5 years nearly 18,500 child passengers from age 5 through age 17 were killed in traffic accidents. (See appendix H.) Although substantial progress is being made in improving the safety of child passengers under age 5, little or no progress has been made in the protection of children age 5 and older. Currently, virtually none of the 41 child passenger protection laws are designed to foster the transition of children from safety seat use to safety belt use. A notable exception is the State of New York, which in 1983 enacted legislation which, in each of the next 4 years, gradually will extend the age requirements for mandatory safety seat or safety belt use until children through the age of 9 years will be covered effective April 1, 1987.

Moreover, there is no evidence that use of child safety seats leads to safety belt use later, after a child outgrows conventional safety seats. In the accidents investigated by the Safety Board, 14 child passengers ranging from age 5 to age 17 were unrestrained, including at least two who had traveled in child safety seats until they had outgrown them. Ten of the older children were injured, two fatally. In two other accidents, two children who outgrew their safety seats at age 3 or 4 also were unrestrained when the accident occurred, and both children were killed. Children, beginning when they are too large to use conventional safety seats, need to be protected by either safety belts or booster seats designed for motor vehicle crash protection.

There is a potential for misuse of both booster seats and safety belts. Virtually all booster seats require the use of a tether strap and safety harness unless the seat is used in conjunction with a lap/shoulder safety belt. Considering the results of surveys indicating that failure to install and use a tether strap with conventional safety seats which require them is a common problem, similar problems may be encountered with the use of booster seats. Crash test results for a booster seat used with a lap belt only, without the required shoulder harness or tether strap, suggest that greater injury can occur in a crash than would occur to a child using a lap belt only, and there may be a greater potential for head injury. 30/

While concern about potential neck injuries to small children using an adult shoulder belt passing across the neck are considered by some researchers to be generally unfounded, 31/ one study of children in crashes found that adult safety belts did not provide adequate protection to children when the safety belt was fastened loosely. 32/ Crash tests have identified significant potential for serious injury when a single lap safety belt is fastened around two children. In the tests, the bodies of the dummies collided with each other. 33/

30/ Kathleen Weber and John Melvin, University of Michigan Transportation Research Institute, "Dynamic Testing of Innovative Solutions to Child Protection Problems," presentation at the National Highway Traffic Safety Administration, Washington, D.C., August 16, 1983.

31/ A. F. Williams and P. Zador, *Op. Cit.*

32/ B. A. Vazey, Child Restraint Field Study, Traffic Accident Research Unit, Department of Motor Transport, New South Wales, Australia, November 1977.

33/ Kathleen Weber, University of Michigan Transportation Research Institute, presentation at Lifesavers Conference sponsored by the National Safety Council and the National Highway Traffic Safety Administration, U.S. Department of Transportation, Denver, Colorado, April 6, 1983.

In one accident investigated by the Safety Board (Case 53), a 3-year-old girl was sharing a single lap/shoulder safety belt with an adult in the right front seat. The child also was out of position on impact, with her head and shoulders lying across the adult's lap. The child sustained moderate head and facial injuries, including a concussion, contusions and abrasions, from striking the unpadded area of the lower right instrument panel. The adult passenger also received moderate injuries.

Another accident investigated by the Safety Board (Case 41) involved a lateral right side impact to the vehicle with secondary impact in the right front. A 4-year-old girl was restrained by a lap-type safety belt in the left rear, next to a 2-year-old boy seated in a forward-facing convertible child safety seat in the right rear. The 4-year-old girl weighed 32 pounds and was 38 inches tall. On impact, her upper body was propelled toward the right, and her head contacted the tubular steel frame of the safety seat, causing fatal injury. The 2-year-old boy in the safety seat sustained minor facial abrasions from contact with the side of the safety seat. The unrestrained driver sustained severe injuries. In this accident, the 4-year-old girl probably would have survived if she had been properly protected by a child safety seat, which would have restrained the movement of her upper torso and head and probably would have prevented any contact with the safety seat in the right rear. However, the accident indicated that further improvements may be needed in child safety seats through additional padding or other means to minimize the injury potential from an unrestrained or lap-restrained occupant contacting a safety seat installed in the vehicle.

THE ECONOMIC COSTS OF CHILD PASSENGER DEATHS AND INJURIES

In addition to the tragic human costs of crash consequences to unrestrained children and their families in terms of fatalities, pain and suffering, physical and mental disabilities, psychological trauma, and the loss of human potential, significant economic costs are paid not just by the families involved, but by virtually all Americans. The total bill for these costs (and the share paid by each citizen) is not well documented because there is no system for collecting these cost data on any broad scale. However, there are indications that the costs are considerable. Moreover, the expenses are paid, directly or indirectly, by every State and Federal taxpayer; everyone who pays premiums for automobile, health, or life insurance; and everyone who pays a hospital bill.

Testimony presented at the Safety Board's public hearings included some indications of the kinds of costs that can be involved when a child is killed or injured in a motor vehicle accident. Doctors and other health professionals from several parts of the country testified that the cost of a single emergency room visit for a child with very minor injuries who is treated and released immediately typically would be about \$50 (less than the cost of most safety seats), or up to about \$200 if a few x-rays or routine tests are necessary. For minor injuries requiring hospitalization, the cost would run several hundred dollars for each day in the hospital, with additional costs for tests, x-rays, medications, and followup examinations after discharge.

One review ^{34/} examined the cases of 12 children between 12 months old and 4 years old who were injured in motor vehicle accidents and treated at St. Louis Children's Hospital in Missouri during one 6-month period. The average hospital stay was 2 weeks, and the costs incurred during their hospitalization alone ranged from \$936 to \$26,839,

^{34/} Greg Echele, Director of Community Services Development, St. Louis Children's Hospital, "Case Examples: Cases Treated at St. Louis Children's Hospital Who Were Involved in Automobile Accidents and Survived," unpublished summary.

with an average cost of \$6,226. It was estimated that the medical costs for 20 percent of the children were paid by Medicaid funds from Missouri and Federal tax dollars.

In a typical example of a seriously injured child with a broken neck, witnesses testified that the injury would require approximately 21 days in an acute care hospital at a cost of about \$600 per day, and an additional 4 months care in a rehabilitation hospital at a cost of approximately \$78,000, for a total cost of more than \$90,000 (not counting any additional costs which might be expected following hospitalization).

As an indication of the kinds of costs that can be incurred for treatment of children severely injured and disabled in auto accidents, one witness cited an actual case of a patient treated at the Rehabilitation Institute of Chicago and Northwestern Children's Memorial Hospital, which together constitute the largest of the 17 spinal cord injury treatment centers in the United States. ^{35/} The patient, an 18-day-old girl, was injured in a low-speed collision while taking her second car ride with her grandparents. She was cradled in the arms of her grandmother and on impact was crushed by her grandmother's body, resulting in a brain stem contusion. Three years after the accident, the child was still believed to be cortically blind, and she had not been able to ingest food or breathe for herself.

From the time of her injury to her first birthday, the baby was kept alive by life support systems in the intensive care unit of Children's Memorial Hospital. When she was discharged, the hospital costs were \$450,000. At that time she was brought home, where she receives continuous nursing care and must be on a ventilator most of the day.

Before she was 3 years old, the child's care had cost \$700,000. Her parents raised more than \$15,000 of that amount and their insurance company paid the rest. At an annual cost of more than \$100,000 for the child's continuing medical care and rehabilitation, the \$1 million limit on the insurance policy was expected to be reached before the child's sixth birthday.

Although this is an extreme example, it is not an isolated case. Another medical witness cited the case of a child who has now been hospitalized for nearly 10 years as a result of a spinal cord injury suffered in a motor vehicle accident, and whose care has cost more than \$1 million. ^{36/} These kinds of cases, and many others involving medical costs of hundreds of thousands of dollars, occur annually.

Besides the economic costs of injuries to children in crashes and noncrash incidents, other evidence suggests that substantial additional costs result from accidents caused by unrestrained children. One study of a majority of the reported accidents which occurred

^{35/} Testimony of Ms. Mary Beth Berkoff, Director of Accident Prevention, Rehabilitation Institute of Chicago, before the National Transportation Safety Board, Public Hearing on Child Motor Vehicle Passenger Safety, St. Louis, Missouri, March 24, 1983.

^{36/} Testimony of William A. Anderson, M.D., Director of Emergency Services, The Children's Mercy Hospital, Kansas City, Missouri, before the National Transportation Safety Board, Public Hearing on Child Motor Vehicle Passenger Safety, St. Louis, Missouri, March 24, 1983.

in North Carolina during a 5-year period identified 748 accidents caused by unrestrained children. ^{37/} The accidents occurred when the children either interfered physically with the driver or the vehicle controls, or distracted the driver by falling onto the floor or by moving around the car, etc. Besides the occupants of the vehicles in which the unrestrained children were riding, the accidents involved 562 other persons (other motorists, their passengers, bicyclists, or pedestrians) and resulted in 1 fatality, 572 injuries, and costs of at least \$4.1 million. The study found that all the accidents could have been prevented if the children had been properly restrained. In 309 other accidents which resulted in costs of \$1.5 million, the information about the accidents was insufficient to determine whether or not the accidents were preventable.

CHILD PASSENGER PROTECTION LAWS—BENEFITS, LIMITATIONS, AND LOOPHOLES

The first child passenger protection law in the United States was enacted in Tennessee in 1977 as the result of a campaign led by pediatricians. Effective January 1, 1978, the law required that children through age 3 be properly protected by a child safety seat when transported by the child's resident parent or legal guardian in a vehicle owned by the parent or legal guardian. The law established a fine of \$2 to \$10 for violation. The Tennessee law also included an amendment which permitted a child to be held in the arms of an older passenger in lieu of being protected by a child safety seat. The amendment was known as the "Babes in Arms Amendment," but later became known as the "Child Crusher Amendment" after some 13 infants and small children were killed in accidents in Tennessee while riding in the arms of other passengers. The amendment was repealed in 1981. ^{38/}

After enactment of the law, a 3-year public information and education program was begun with funding from the Governor's Office of Highway Safety and the NHTSA. The purpose of the program was to inform the public about the requirements of the law and to provide public education through a campaign which included brochures, billboards, posters, public service announcements, and news media reporting. A child safety program was conducted by the Tennessee Department of Public Health with the goal of establishing safety seat loan programs throughout the State in all 95 county health departments.

Initially, oral warnings were given to violators, then law enforcement officers began to issue citations; aggressive enforcement did not actually begin until September 1979. The Tennessee Highway Patrol in the Department of Safety also developed a positive enforcement policy under which all 800 Highway Patrol cruisers were equipped with child safety seats for troopers to loan to violators on-the-spot. The seats were to be returned at the time of the court appearance, and if the violator could show at that time that a safety seat had been acquired, the law enforcement agency would ask the court to waive the fine and court costs. Although thousands of citations were issued, virtually all

^{37/} William L. Hall and Forrest M. Council, Highway Safety Research Center, University of North Carolina, "Warning: In Cars, Children May Be Hazardous to Their Parents' Health: The Role of Restraints in Preventing Collisions," Proceedings of the Twenty-Fourth Conference of the American Association for Automotive Medicine, AAAM, Morton Grove, Illinois, 1980.

^{38/} Testimony of Robert S. Sanders, M.D., before the National Transportation Safety Board, Public Hearing on Child Motor Vehicle Passenger Safety, Dallas, Texas, January 13, 1983; and Robert S. Sanders, M.D., "Legislative Approach to Auto Safety: The Tennessee Experience," in A.B. Bergman, ed., Preventing Childhood Injuries. Report of the Twelfth Ross Roundtable on Critical Approaches to Common Pediatric Problems, Ross Laboratories, Columbus, Ohio, 1982.

violators appeared in court with the required proof, and the assessment of a fine was extremely rare. When given a citation, violators frequently thanked Highway Patrol Troopers for their concern and assistance. In terms of fostering good law enforcement-community relations, the enforcement policy was considered the most effective public relations activity in the history of the Tennessee Highway Patrol. 39/

Child safety seat usage rates in Tennessee began to increase after enactment of the child passenger protection law. After the public information and education and safety seat loan programs were established to support the law, usage rates reached 29 percent, or more than triple the prelaw average of 9 percent. However, the impact of the law and the support programs on usage was considered to have been weakened to some extent because for the first 3 years citizens could also comply with the law without safety seat use by having children ride in the laps of their parents or other passengers. 40/

Before the Tennessee law was enacted, 20 to 25 child passenger fatalities occurred yearly in the State in the 3-and-under age group covered by the law. After the law's enactment and the supporting enforcement, public information and education, and safety seat loan programs were put in place, child passenger fatalities in that age group dropped to 15 in 1980, 10 in 1981, and 6 in 1982. While the reductions may have been affected somewhat by other factors (such as changes in the accident exposure of this age group), the reductions are considered to be attributable primarily to the child passenger protection law and support programs.

In the 5 years following enactment of the Tennessee law, other States gradually began to enact similar legislation, and those States are beginning to report similar results. For example, during the first 10 months after the North Carolina law went into effect child safety seat use by children under age 2 increased from 30 percent to 46 percent and an estimated 8 deaths and 23 serious injuries were prevented. 41/ Since the Rhode Island law became effective on April 1, 1981, Rhode Island has not reported a single child passenger death in the 3-and-under age group covered by the law. During the first 9 months the Michigan law was in effect, total child passenger casualties (fatalities and injuries combined) in the 3-and-under age group covered dropped by 31 percent compared to the same period the previous year, while adult motor vehicle occupant fatalities dropped only 10 percent.

All 41 child passenger protection laws which had been enacted in the United States by mid-1983 contain provisions which define and limit their applicability. While some limitations are necessary, others have the effect of excluding children from the

39/ Testimony of Sgt. Marion Ramsey, Tennessee Highway Patrol, before the National Transportation Safety Board, Public Hearing on Child Motor Vehicle Passenger Safety, Dallas, Texas, January 13, 1983; and Gene Roberts, Commissioner, Tennessee Department of Safety, "Child Passenger Safety: The Tennessee Enforcement Strategy," paper presented at the International Forum on Occupant Restraint, Toronto, Ontario, Canada, June 1-3, 1981.

40/ Randy L. Perry, et al., op. cit., and Allan F. Williams, "Evaluation of the Tennessee Child Restraint Law," American Journal of Public Health, Vol. 69, American Public Health Association, 1979.

41/ University of North Carolina Highway Safety Research Center, The North Carolina Child Passenger Protection Law: Summary of First Year Experience, Interim Report to the General Assembly, June, 1983.

protection of the law unnecessarily. Consequently, the laws fail to place a clear prohibition on transportation of children unrestrained. Accident investigations illustrate the gaps created by four kinds of limitations: those on the adults responsible for complying with the law; those on the children who must be protected; those based on "personal needs" exemptions; and those which restrict the enforcement of the law. (See Summary of Child Passenger Protection Laws at appendix G.)

Adults Responsible for Compliance

On September 4, 1982, in an accident near Winston-Salem, North Carolina, a 9-month-old girl riding in her grandmother's lap was killed, along with her grandparents (Case 3). A child safety seat that was being carried loose and unused in the rear of the car was ejected during impact and was found lying next to the car after the accident. If the baby had been riding properly secured in that safety seat, rather than riding in her grandmother's lap, she probably would have survived the accident. North Carolina's child passenger protection law had been in effect for 2 months when this accident occurred. The law applies to every driver required to have a North Carolina driver's license when transporting his or her own child under age 2 in his or her own motor vehicle; it does not apply to transportation of children by any other person, including grandparents, other relatives, or friends.

Laws in 33 States, expressly or indirectly, restrict the applicability of the law to residents of the State, or to drivers of vehicles registered in the State, or both. In 16 jurisdictions, the law applies to the child's parent or legal guardian only, and 11 of those laws are further limited to motor vehicles owned by the parent or legal guardian. Three laws are limited to drivers who regularly and customarily transport a small child, and two provide exceptions for use of a temporary or a substitute vehicle.

The effect of these limitations in many cases is to exclude infants and small children from the protection of the law because the person transporting them is not subject to the law. The limitations may have been made for reasons that seemed valid at the time of enactment -- for example, out of concern that having to purchase a child safety seat would be an unreasonable financial burden for persons other than a child's parent or guardian, or for nonresidents who were not subject to similar requirements in their own State. Now, however, four out of five States either already have a child passenger protection law in effect or will have one in effect by mid-1984, and more laws are expected to be enacted by the remaining States. Rather than excluding from the coverage of the law children in nonparental driving situations and allowing them to be transported with no protective restraint, some States, such as California, provide a safety belt option. Under the California law, the child passenger protection requirement may be met by use of either a safety seat or a safety belt in a nonparental driving situation or when a parent is driving someone else's vehicle.

Children Not Required to be Protected

Many children also are excluded from the protection of the law by provisions which limit applicability only to certain children based on age, weight, height, or some combination thereof. The laws vary considerably, with 3 covering children through 1 year old only, 2 extending through age 2, 20 through age 3, 10 through age 4, 4 through age 5, 1 through age 9, and 1 which applies to children 40 inches or less in height. Some laws provide exemptions for children whose weight meets or exceeds 40 pounds or who obtain a physician's certificate indicating that safety seat use is impracticable due to the child's size or weight, or medical reasons. Others provide a safety belt option, rather than an outright exemption, based on age, size, or weight.

In some of the accidents investigated, children who were not covered by an existing child passenger protection law were not using any protective restraint and were killed or injured. For example, in Mt. Vernon, Kentucky (Case 11), an unrestrained 4-year-old boy who was fatally injured in a noncrash incident when he fell from a moving vehicle was 42 inches tall — 2 inches taller than the maximum height specified by the Kentucky law for mandatory safety seat use. This law requires the superior protection provided by a safety seat until a child outgrows it, and then does not require any protection at all.

In an accident in Herkimer, New York (Case 8), a 3-year-old girl and her 5-year-old brother, both unrestrained, were ejected from the family station wagon, collided with another vehicle and the pavement, and were fatally injured. Both children almost certainly would have survived, probably with little or no injury, if they had been wearing safety belts. However, the New York child passenger protection law in effect at that time covered children only through age 4, and, thus, did not apply to the 5-year-old boy. The law did apply to his 3-year-old sister; however, she was 42 inches tall and had outgrown her safety seat. The New York law was amended in 1982 to include a safety belt option for 4-year-old children, but the option was not extended to 3-year-olds too large to use conventional safety seats. In other accidents investigated by the Safety Board involving infants and small children, 10 other unrestrained children over 4 years old were killed or injured. Safety belt options provide a means of extending child passenger protection requirements to older children who are not covered by existing laws as well as to children who cannot use conventional safety seats because of their size or weight.

Exemptions for Nursing, Diapering, or Other "Personal Needs"

An accident which occurred November 2, 1982, in Austin, Texas, involved a young mother who was nursing her 5-week-old son in the front seat of their 1974 Subaru while her husband was driving. All three occupants were unrestrained. A drunk driver traveling in the opposite direction in a 1968 Ford sedan suddenly veered across the centerline and collided head-on with the Subaru. The baby's father was seriously injured and the mother sustained moderate injuries. The 5-week-old baby was crushed into the instrument panel by the weight and acceleration of his mother's body and died of massive head injuries.

Since Texas had not enacted a child passenger protection law, it was not unlawful for the baby not to be properly protected by a child safety seat while he was being nursed by his mother. This practice also would not have been unlawful in five of the States that do have child passenger protection laws. In the five States — Georgia, Michigan, North Carolina, Tennessee, and South Carolina — a child does not have to be properly protected when the child is being nursed, and some of the exemptions extend to situations when an adult is attending to a child's "personal needs" or when a child "has any distress which makes it impractical to use a child restraint system."

"Personal needs" exemptions are based largely on convenience and do not adequately protect the child's health and safety. The exemptions may encourage or perpetuate a false notion that it is somehow "safe" to transport a child without proper protection if the child is being nursed or diapered. However, the Austin, Texas, accident shows that it is dangerous for a child to travel without proper protection while personal needs are being accommodated, even for a brief period. If a child has a personal need which cannot be attended to while the child is properly restrained, it should not be attended to while traveling in a moving vehicle.

Enforcement Limitations

The intent of child passenger protection laws is positive, rather than punitive. As one witness testified in the public hearings, child passenger protection laws are "education with teeth." ^{42/} Their purpose is to encourage the safe transportation of children and, especially, to encourage families to obtain and use child safety seats to protect infants and small children properly. Consequently, most laws provide that the fine specified for violations either must or may be waived upon showing proof that a child safety seat has been obtained. While the existence of a child passenger protection law in itself serves an educational function, the law must be enforced to be fully effective.

The child passenger protection laws of two States — Arizona and New Mexico -- do not permit law enforcement officers to stop a vehicle solely for the purpose of enforcing child passenger protection requirements. In effect, law enforcement officers in those States are prevented from enforcing the child passenger protection law even when a particularly hazardous situation, such as a child riding in the lap of a driver or passenger or standing in a moving vehicle, is observed, unless the officer has another reason for making a stop (such as a violation of another law). The child passenger protection laws of three other States — Kansas, Kentucky, and Oklahoma — do not provide any penalty for violations, and instead restrict enforcement action to the issuance of an oral or written warning which may be accompanied by printed educational materials provided to violators.

Even in States which do not have such restrictions, law enforcement agencies in many cases may not be conducting an active enforcement campaign. While much of the focus of child passenger safety efforts has been concentrated on the passage of legislation and the development of public information and education programs, there is a growing recognition that the implementation of the laws, and especially their enforcement, has not received sufficient attention. An increasing number of jurisdictions are finding that the passage of a child passenger protection law is just the beginning, and that a considerable amount of effort is required for effective planning and coordination of its implementation.

In addition to the law enforcement training discussed previously, a critical element of implementation is the training and education of law enforcement officers in the positive role that they have in enforcing a child passenger protection law. It cannot be assumed that individual officers and their superiors will automatically be supportive and committed to enforcing a child passenger protection law in the absence of such training and of a written enforcement plan.

The National Child Passenger Safety Association is concerned about the implementation of child passenger protection laws and is in an excellent position to assist the States in identifying implementation problems and developing effective implementation programs which would address the need for effective law enforcement plans and training, public information, education and safety seat loan programs, the evaluation of the effectiveness of such laws and programs, and efforts to combat safety seat misuse.

^{42/} Testimony of Robert S. Sanders, M.D., before the National Transportation Safety Board, Public Hearing on Child Motor Vehicle Passenger Safety, Dallas, Texas, January 13, 1983.

**TOWARD FURTHER ADVANCES IN CHILD PASSENGER SAFETY:
ELEMENTS OF AN EFFECTIVE CHILD PASSENGER PROTECTION LAW**

Based on the foregoing analysis, the Safety Board believes that to prevent or reduce more effectively the needless death, disability, and disfigurement of children in motor vehicle accidents and noncrash incidents, child passenger protection laws should incorporate the following major elements.

A. Age and Type of Protection

- 1) For infants and children through 4 years old whose height does not exceed 40 inches and whose weight does not exceed 40 pounds, require use of a child safety seat or other child restraint system; for a child 1 year old or older transported by a person other than his or her parent or legal guardian, or in a vehicle which is not owned by the parent or legal guardian, permit use of a safety belt, preferably in the rear seat, in lieu of a child safety seat.
- 2) For infants and children through 4 years old whose height exceeds 40 inches or whose weight exceeds 40 pounds, require use of a safety belt, preferably in the rear seat, or a child restraint system, such as booster seat, which is appropriate for the child's height and weight.
- 3) For all children age 5 and older, require use of a vehicle safety belt or a child restraint system, such as a booster seat.
- 4) Exceptions: a) when restraint use would be inappropriate for medical reasons or during an emergency; or b) when the number of passengers exceeds the number of seating positions equipped with safety belts, if all safety belts are in use and if preference in use of restraints is given to children.

B. Person Responsible for Child's Protection

The driver is responsible, except when the child's parent or legal guardian is present in the vehicle.

C. Vehicles Subject to Child Passenger Protection Requirements

All vehicles equipped with safety belts at the time of manufacture or currently equipped with safety belts.

D. Specific Prohibitions

- 1) Temporarily unrestraining a child for nursing, feeding, or diapering.
- 2) Using household infant carriers or home booster chairs not designed for motor vehicle crash protection.
- 3) Leaving a child under age 5 secured in a child safety seat or child restraint device in a vehicle that is unattended by an adult.

E. Acceptable Child Safety Seats and Child Restraint Systems

Those which meet applicable Federal Motor Vehicle Safety Standards in effect at the time of manufacture.

F. Proper Use Required

- 1) A child safety seat or other child restraint system must be used exactly in accordance with the manufacturer's instructions.
- 2) A safety belt must be used properly, according to the instructions of the vehicle manufacturer.

G. Penalty for Noncompliance

- 1) An appropriate fine, which may be waived for the first violation upon provision of proof that a child safety seat or other appropriate child restraint system has been acquired within a period of time established by the law.

H. Enforcement

Evidence of violation is sufficient cause for enforcement without the occurrence of a separate violation of law or other prerequisite.

I. Evaluation

Ongoing or periodic evaluations of effectiveness of State law, including measurements of the degree of compliance, the degree of misuse of child safety seats, the degree of enforcement, and accident consequences to restrained and unrestrained child passengers.

CONCLUSIONS

1. It is extremely dangerous for an infant or child to be transported in a motor vehicle without proper protection at any time, under any circumstances.
2. An infant or child in a moving vehicle cannot be restrained and protected properly by being held in the arms of another passenger, which adds the danger of the child being crushed against the vehicle interior by the weight and acceleration of the body of the holder in an accident, and increases the risk of fatal or serious injuries to the child.
3. Ejection of an unrestrained child from a vehicle increases the danger of fatal or serious injury from striking the pavement, other vehicles, or other exterior objects, in addition to the danger of injuries resulting from contact with the vehicle interior before and during ejection.
4. Children riding unrestrained in a motor vehicle are in danger of being killed or injured even if the vehicle is not involved in a crash; death or injury can result from common driving maneuvers, such as sudden stops, turns, swerves, or from the unrestrained child falling from a moving vehicle.

5. Household infant carriers and home booster chairs are not designed to provide any protection for children in motor vehicle accidents and cannot be relied upon to do so.
6. Child safety seats, when used properly according to the manufacturer's instructions, can provide excellent protection against the death or serious injury of children in motor vehicle accidents.
7. A second essential element of child passenger protection is that all other vehicle occupants be properly restrained to prevent fatal or serious injury to a child from violent contact with unrestrained occupants propelled by crash impact forces.
8. Misuse of child safety seats appears to be a significant and widespread problem. While in some kinds of accidents, a misused safety seat may still provide some protection, misuse can reduce or totally negate the protection provided by a safety seat.
9. The most prevalent misuse problem encountered in the Safety Board investigated accidents was the failure to use or to correctly anchor the tether on safety seats which require a tether and which rely on its use for effective crash performance. In almost every case where a tether was required, it was not used, and when it was used, it was sometimes tied to some part of the vehicle, rather than being properly secured to an anchor installed for that purpose.
10. Two of the most safety-critical misuses uncovered in the accidents investigated were the failure to fasten the safety seat harness around the child (or not securing it snugly) and the failure to use the vehicle safety belt (or failure to fasten it in the correct place on the safety seat) to secure the safety seat tightly to the vehicle. In the accidents investigated, these errors allowed infants and small children to be propelled from the safety seat, or both the safety seat and the child to be propelled together, against the vehicle interior.
11. Additional safety seat design improvements may be needed to prevent injury to a restrained or unrestrained vehicle occupant resulting from contact with a safety seat installed in the vehicle.
12. The possibility of developing abdominal load and neck load criteria, anthropomorphic dummies, and dynamic test procedures for certification of child safety seats should be explored by the National Highway Traffic Safety Administration through further research and developmental crash testing.
13. To combat the problem of misuse of child safety seats, additional action is needed to place special emphasis on the misuse problem in child passenger safety public education programs and in safety seat loan programs, to train law enforcement officers to identify misuse in their enforcement and accident investigation activities, to identify through accident data the kinds of misuse problems that are occurring in accidents, to determine their magnitude, and to simplify safety seat design and improve manufacturers' usage instructions and labels.
14. Many children are cut off from the benefits of child passenger protection laws by statutory provisions which unnecessarily limit the scope of the law in terms of the adults responsible for compliance, the children covered by the law, and the circumstances in which the law applies.

15. Virtually none of the child passenger protection laws enacted as of mid-1983 are designed to foster the transition of children from safety seat use to safety belt use; the vast majority of the laws require that a child be provided the superior protection of a safety seat until age 1, 2, 3, 4, or 5 (often with a safety belt option at the upper end of that age range), but permit a child to be transported without any protection whatsoever after the maximum age specified.
16. The proper use of safety belts by infants and small children, although not as effective as the proper use of safety seats in preventing death or injury, should be encouraged for those driving situations in which a child at any age would otherwise be transported unrestrained.
17. Crash test studies and accident data are needed to evaluate the use and crash performance of safety belts by small children, to better identify injury prevention benefits and limitations, and to provide guidance to legislators and the public.
18. The economic costs of motor vehicle deaths and injuries to unrestrained children (and adults) in the United States are paid by all American citizens through higher taxes for police services, emergency medical services, medical care and rehabilitation, public health and highway safety programs to reduce child fatalities and injuries, and special education for the handicapped; through higher hospital costs; and through higher insurance premiums.
19. Accidents caused by unrestrained children endanger the health and safety of other motorists and their passengers, pedestrians, bicyclists, and others, and result in substantial additional costs to taxpayers and consumers.

RECOMMENDATIONS

As a result of its Safety Study of Child Passenger Protection Against Death, Disability, and Disfigurement in Motor Vehicle Accidents, the National Transportation Safety Board made the following recommendations:

--to the Governors and legislative leaders of Alaska, Idaho, Iowa, Louisiana, South Dakota, Texas, Utah, Vermont, Wyoming, American Samoa, Guam, Puerto Rico, and the Virgin Islands:

Enact legislation requiring the proper protection of children traveling in motor vehicles, following as closely as possible the elements set forth by the National Transportation Safety Board in its Safety Study, "Child Passenger Protection Against Death, Disability, and Disfigurement in Motor Vehicle Accidents." (Class II, Priority Action) (H-83-49)

Include, as part of a statewide child passenger safety program, public information and education activities specifically aimed at combating misuse of child safety seats. (Class II, Priority Action) (H-83-50)

--to the Governors and legislative leaders of Alabama, California, Connecticut, Delaware, Florida, Illinois, Kansas, Kentucky, Massachusetts, Michigan, Minnesota, New York, North Carolina, Ohio, Rhode Island, Tennessee, Virginia, West Virginia, and Wisconsin:

Include, as part of a statewide child passenger safety program, public information and education activities specifically aimed at combating misuse of child safety seats. (Class II, Priority Action) (H-83-51)

--to the Governors and legislative leaders of Arizona, Arkansas, Colorado, Georgia, Hawaii, Indiana, Maine, Maryland, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Dakota, Oklahoma, Oregon, South Carolina, Washington, and the Mayor and Chairman of the Council of the District of Columbia:

Include, as part of a statewide child passenger safety program, public information and education activities specifically aimed at combating misuse of child safety seats. (Class II, Priority Action) (H-83-52)

--to the National Highway Traffic Safety Administration:

Expedite the issuance of a final rule requiring that newly-manufactured vehicles under 10,000 pounds gross vehicle weight be equipped with tether anchorages or predrilled holes for the installation of such anchorages at all rearmost seating locations. (Class II, Priority Action) (H-83-53)

Examine the consequences in accidents of nonuse and misuse of tether straps with safety seats requiring use of tether straps to determine whether such safety seats should be required to meet all the requirements of Federal Motor Vehicle Safety Standard 213, Child Restraint Systems, without the tether strap attached. (Class II, Priority Action) (H-83-54)

Examine the incidence of nonuse and misuse of a tether strap with child safety booster seats when used in a rear vehicle seat and the consequences in accidents of such nonuse or misuse to determine whether the advantages offered by such booster seats outweigh the disadvantages. (Class II, Priority Action) (H-83-55)

Amend Federal Motor Vehicle Safety Standard 213, Child Restraint Systems, to require that child safety seats and other child restraint systems include on their certification labels, information for obtaining a replacement copy of the manufacturer's detailed instructions for use. (Class II, Priority Action) (H-83-56)

Conduct research and developmental crash testing to explore the feasibility and desirability of developing abdominal and neck load criteria, anthropomorphic dummies, and test procedures for child safety seats and other child restraint systems. (Class II, Priority Action) (H-83-57)

Conduct research to examine the potential for other restrained or unrestrained vehicle occupants to sustain injuries in accidents from contact with a child safety seat when used in a motor vehicle and to determine whether additional safety requirements may be necessary and practicable to prevent or minimize potential injuries. (Class II, Priority Action) (H-83-58)

Conduct crash tests and accident research to examine the use and accident performance of safety belts with children at various ages to better identify the benefits and limitations of such use. (Class II, Priority Action) (H-83-59)

--to Child Safety Seat Manufacturer:

Review and revise instructions for use of child safety seats and other child restraint devices as needed to improve the clarity of the instructions and to establish specific height, weight, or other thresholds for required actions which depend on a child's physical characteristics (such as conversion between forward and rear-facing modes and harness rerouting on convertible child safety seats). (Class II, Priority Action) (H-83-60)

Attach permanent labels to safety seats to identify correct safety belt routing points, harness routing points, and correct recline positions for use in motor vehicles. (Class II, Priority Action) (H-83-61)

--the International Association of Chiefs of Police:

Coordinate and promote the development of training programs for State and local law enforcement officers on the use and misuse of child safety seats and safety belts for law enforcement and accident investigation purposes. (Class II, Priority Action) (H-83-62)

Promote the use of statewide traffic accident data systems to collect and analyze specific data identifying the use and misuse of child safety seats and safety belts in motor vehicles involved in accidents and the consequences of such use and misuse. (Class II, Priority Action) (H-83-63)

—to the National Child Passenger Safety Association:

Assist the States in developing effective programs to implement child passenger protection laws. (Class II, Priority Action) (H-83-64)

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

/s/ JIM BURNETT
Chairman

/s/ PATRICIA A. GOLDMAN
Vice Chairman

/s/ FRANCIS H. McADAMS
Member

/s/ G. H. PATRICK BURSLEY
Member

/s/ DONALD D. ENGEN
Member

September 7, 1983

**CHILD PASSENGER PROTECTION LAWS
SUMMARY OF KEY PROVISIONS
(40 STATES AND DISTRICT OF COLUMBIA)**

STATE CHILD PASSENGER SAFETY LAWS

State & Effective Date	Requires	Children	Where ⁽¹⁾ Seated	To Use ⁽²⁾	Vehicle	Exceptions	Penalties	Public Education Campaign	Other Provisions
Alabama 6-29-82	Resident Driver	Under Age 3	Not Specified	Approved Child Passenger Restraint System	Motor Vehicle	Non resident drivers bus and bus tour operation	Maximum fine \$100.00	No	Failure to use child restraint system shall not be considered contributory negligence or violation of law unless not timely or change of provisions of insurance contract
Arizona 7-27-81	Resident Parent or Guardian	Under Age 4 or Under 40 lbs	Not Specified	Approved Child Passenger Restraint System	Manufactured or Motor Vehicle	Non resident drivers, vehicle originally manufactured without passenger restraint device, more than one child in vehicle, motor vehicle not used for transportation purpose sufficient to be licensed	7-27-81 to 7-1-84 warning letter after 7-1-84 maximum fine \$75.00 fine will be waived if a portion of system is shown	Yes. The parent is required to provide parents of newborn with information regarding proper programs prior to leaving baby from hospital. Fines will be placed in fund for rental program	Prohibits police officer from stopping vehicle to check for an existing law violation concerning seat use or non use of system as inadmissible evidence in court
Arkansas 6-1-82	Resident Driver	Under Age 3 Ages 3-5	Not Specified Not Specified	Approved Child Passenger Safety Seat System Approved Child Passenger Safety Seat System or Seat Belt	Passenger Automobile Van or Pickup Truck	Drivers of the two vehicles (children who can't use system due to medical condition) who get out of vehicle during emergency situations, all other seats with seat belts are required rear seat belt drivers	8-1-81 to 5-30-84 warning letter after 7-1-84 \$10.00 to 25% of fine or part of acquisition of system	Yes. Law encourages law enforcement agencies and not parents to conduct public information campaign Fines will be placed in fund for rental program	Failure to use child restraint system does not constitute comparative or contributory negligence. Use or non use of system is inadmissible evidence in court
California 1-1-81	Resident Parent or Legal Guardian	Own Child (can't be Under Age 4 or Under 40 lbs)	Not Specified	Approved Child Passenger Seat Restraint System	Passenger Vehicle or Motor Truck Under 6,000 lbs. Not Owned by Parent or Guardian (Not Registered in State)	Non resident drivers (children who can't use system due to medical condition) or baby care	Child restraint system to be developed in next year of campaign. Charges dropped if parent or guardian of system is shown in court fine \$50.00 \$200	Yes. Law includes public information and education campaign on safe use of seat restraints for infants & children up to age 15. Campaign opens 11-84	None
	Resident Parent or Legal Guardian	Own Child (can't be Under Age 4 or Under 40 lbs)	Not Specified	Approved Child Passenger Seat Restraint System or Seat Belt	Passenger Vehicle or Motor Truck Under 6,000 lbs. Not Owned by Parent or Guardian (Not Registered in State)				
	Resident Driver	Any Child on Under Age 4 or Under 40 lbs	Not Specified	Passenger Seat Restraint or Seat Belt	Passenger Vehicle or Motor Truck Under 6,000 lbs. Registered in State		Charge against resident drivers will be dropped if child's parent or legal guardian is present in vehicle at time of violation		
Colorado 1-1-84	Resident Driver	Under Age 4 and Under 40 lbs	Not Specified	Approved Child Restraint System	Non Commercial Passenger Vehicle	Non resident drivers	\$25.00 fine will be waived if proof of acquisition is shown	Yes. Law includes public information and education campaign to be implemented 7-1-84	Failure to use child restraint device shall not constitute negligence or contributory negligence per se
Connecticut 10-1-82	Driver	Under Age 4 Under Age 4	Front Seat Rear Seat	Approved Child Restraint System Approved Child Restraint System or Seat Belt	Motor Vehicle	Non resident vehicle in truck or van system, bus or bus tour operation	Violation is deemed an infraction and will be waived if proof of acquisition of system is shown	No	Failure to use child restraint system shall not be considered contributory negligence or use or non use of inadmissible evidence in court
Delaware 6-2-82	Resident Parent or Legal Guardian	Under Age 4	Not Specified	Approved Child Passenger Restraint System	Motor Vehicle	Non resident drivers	Maximum fine of \$25.00 fine will be waived if proof of acquisition of system is shown	No	Failure to use child restraint system shall not be considered contributory negligence or use or non use of inadmissible evidence in court
Florida 7-1-83	Resident Parent or Legal Guardian	Under Age 4 Ages 4 & 5	Not Specified Not Specified	Approved Child Restraint System Approved Child Restraint System or Seat Belt	Passenger Car Van or Pickup Truck	Non resident drivers	\$15.00 fine or part of acquisition of system	Yes. Law specifies that law enforcement agencies should conduct a public information campaign. Agencies are required to send notice to all registered drivers with delivery of license plates	Failure to use child restraint system does not constitute negligence per se. Use or non use of system as an inadmissible evidence in court

NA - Not applicable

(1) Where not specified, we are assuming use is required for both front and rear seats

(2) Approved system is a system which meets Federal motor vehicle safety standards

STATE CHILD PASSENGER SAFETY LAWS (continued)

State Effective Date	Requires	Children	Where ⁽¹⁾ Seated	To Use ⁽²⁾	Vehicle	Exceptions	Penalties	Public Education Campaign	Other Provisions
Missouri 11/82 As Amended 8/1/83	Resident Parent or Legal Guardian	Under Age 4	Not Specified	Approved Child Passenger Restraint System	Motor Vehicle	Non resident drivers - vehicles not owned by parent or guardian - vehicles not equipped with seat belts	Maximum fine \$25.00. Fine will be waived if proof of acquisition of system is shown. Points will not be assessed.	No	None
Mississippi 7/1/81	Resident Parent or Legal Guardian	Under Age 2	Not Specified	Approved Child Passenger Restraint System	Motor Vehicle	Non resident drivers	Minimum fine \$10.00. Fine will be waived if proof of acquisition of system is shown.	Notice of new law will be sent to registered drivers with delivery of motor vehicle license plates.	Failure to use child restraint system does not constitute contributory negligence. A law does not create any new standard of duty on part of parent or child.
Missouri 11/84	Resident Driver	Under Age 4	Front Seat Rear Seat	Child Passenger Restraint System Approved by Department of Public Safety. Child Passenger Restraint System or Seat Belt Approved by Department of Public Safety.	Motor Vehicle	Temporary substitute vehicles for hire vehicles, such as resident drivers.	Maximum fine \$25.00	Yes. Law provides for public information program.	Failure to use child restraint system does not constitute negligence or contributory negligence. Use or non use of system is inadmissible evidence in court of all other seats with seat belts are occupied child shall be transported in rear seat.
Arkansas 11/84	Resident Parent or Legal Guardian	Under Age 2 Ages 2-4 or Under 40 lbs	Not Specified Not Specified	Approved Child Restraint Device Approved Child Restraint Device or Seat Belt	Motor Vehicle	Driver not required to use vehicle with more than three child restraint systems. Child restraints can't use system which made at construction body size less than 20 lbs. Motor bus or school bus - vehicle which only seat two persons and which is transporting over 2 persons over age 4 in vehicle. Vehicles not required to be equipped with seat belts rear resident drivers.	First violation - \$10.00 \$25.00. Fine will be waived if proof of acquisition of system is shown. Subsequent violation - under three years \$25.00 - \$100.00 fine.	No	Failure to use child restraint system shall not constitute negligence. Use or non use is inadmissible evidence in court.
Nebraska 8/26/83	Resident Driver	Under Age 1 Ages 1-4	Not Specified Not Specified	Approved Child Passenger Restraint System Approved Child Passenger Restraint System or Seat Belts	Motor Vehicle	1961 or earlier motor vehicle not equipped with seat belts. Inactive children who can't use system due to medical condition or body size rear resident drivers.	\$25.00 if proof of acquisition of system.		Failure to use system shall not constitute negligence. Use or non use of system shall not constitute a defense for recovery of medical expenses.
Nevada 7/1/82	Resident Driver	Under Age 5 Under Age 3 Ages 3-5	Front Seat Rear Seat Rear Seat	Approved Child Restraint Device Approved Child Restraint Device Approved Child Restraint Device or Seat Belts	Motor Vehicle	Non resident drivers - rental, school bus, and vehicle of other person can't use system. Use of non child restraint seats with seat belts are required.	\$35.00 - \$100.00 fine. Fine will be waived if proof of acquisition of system is shown. Points will not be assessed.	No	Failure to use child restraint system will not constitute negligence. Preference for use of safety seats should be given to children under age three and all children under age five should be seated in rear seat.
New Hampshire 6/27/83	Driver	Under Age 5	Not Specified	Child Passenger Seat or Seatbelt	Motor Vehicle	For hire vehicles - not required to be equipped with seat belts. Children can't use system because of medical condition.	Maximum fine \$10.00. Fine will be waived if proof of acquisition of system is shown.	No	Failure to use child restraint system shall not constitute contributory negligence.

(1) Where not specified - we are assuming use is required in both front and rear seats.

(2) Approved system is a system which meets Federal motor vehicle safety standards.

STATE CHILD PASSENGER SAFETY LAWS (continued)

State Effective Date	Requires	Children	Where ¹⁾ Seated	To Use ²⁾	Vehicle	Exceptions	Penalties	Public Education Campaign	Other Provisions
Arkansas 11/83	Resident Driver	Under Age 4	Rear Seat	Approved Child Passenger Restraint System or Seat Belt	Motor Vehicle	Non resident driver, school bus, taxicab, vehicle being required to be equipped with seat belts, all other seats with seat belts or occupied child restraint which use system for failure of mechanical conditions	Unlawful	Yes, Law provides for public education campaign	Use or non use of system is inadmissible evidence in court failure to use system will not be used in mitigation of damages
		Under Age 4 Ages 4-5	Front Seat Not Specified	Approved Child Passenger Restraint System Approved Child Restraint System or Seat Belt	Motor Vehicle or Pick-Up Truck Under 8000 lbs	Privately owned commercial vehicle, vehicle manufactured previous to 1966 and not equipped with seat belts, children who can use system, vehicle of only one of other seats with seat belts, and other seats with seat belts are equipped consistent of other states that don't have similar laws	11/84 6/30/84 warning after 7/1/84 maximum \$20.00 fine, based on number of period of equipment of system is shown	No	Failure to use system does not constitute negligence, use or non use of system is inadmissible evidence in court
California 7/1/81	Driver	Under Age 3	Front & Rear Seats (except 4-3-81)	Approved Child Passenger Restraint System	Motor Vehicle	None	Maximum fine of \$15.00 or period of suspension of system recorded on driver's record	No	Use or non use of system is inadmissible evidence in court failure to use child restraint system does not constitute negligence per se
South Carolina 7/1/83	Resident Driver	Under Age 1	Front or Rear Seat	Approved Child Passenger Restraint System	Passenger Car, Pick-Up Truck, Van, Recreational Vehicle	taxi, church, day care, and school bus driver, commercial motor vehicle, children being fed, children who can use system due to mechanical conditions	7/1/83 6/30/83 warning after 7/1/84 maximum fine \$25.00 based on period of suspension of system is shown	No	Failure to use system does not constitute negligence per se or inadmissible evidence in court, use or non use of system is inadmissible evidence in court, child restraint system may be checked out or taken into care, if a child restraint is checked out, the provider must be given to child on under age 16 age
		Under Age 4	Front Seat	Approved Child Passenger Restraint System					
		Ages 1-3	Rear Seat	Approved Child Passenger Restraint System or Seat Belt					
Illinois 11/78 As Amended 11/81	Resident Parent or Legal Guardian	Under Age 4	Not Specified	Approved Child Passenger Restraint System	Motor Vehicle	Child being nursed, attended to by mother, wife, child's family, parents, or guardian, non resident driver	\$1.00 \$10.00 fine or court costs	No	Use or non use of system is inadmissible evidence in court failure to use child restraint system is not negligence per se
Virginia 11/83	Resident Parent or Legal Guardian	Under Age 3 & Under 40 lbs	Not Specified	Child Restraint System Approved by State Police	Motor Vehicle Manufactured After 11/1/81	Public bus or school bus, vehicle which has been designed for front seat use, child using system, if use of system is a matter of emergency, if a motorist is required to use child restraint, driver, driver of vehicle must be furnished with 11/1/81	\$25.00 fine \$10.00 (if under 18) or suspension of license (if over 18), fine may be waived if not used if child is under 18	No, if non resident provides for compliance of law program to provide child restraint systems to parents who are financially unable to provide system	Failure to use child restraint system is not negligence per se, use of system will not be used in mitigation of damages, payment of medical costs
		Ages 3-4 & Over 40 lbs	Not Specified	Child Restraint System Approved by State Police or Seat Belt					
Washington 12/31/81	Resident Parent or Legal Guardian	Under Age 1	Not Specified	Child Passenger Restraint Device Approved by State Commissioner of Department of Social Services	Motor Vehicle Operated by Parent or Guardian after Registration in State	Non residents	11/84 6/30/84 warning starting after 7/1/84 maximum fine \$5.00 based on number of period of suspension of system is shown	No	Failure to use child restraint device is not negligence, use or non use of system is inadmissible evidence
		Ages 1-4	Not Specified	Child Passenger Restraint Device Approved by State Commissioner of Department of Social Services or Seat Belt					

1) Where not specified, we are assuming use is required in both front and rear seats

2) Approved systems is a system which meets Federal motor vehicle safety standards

STATE CHILD PASSENGER SAFETY LAWS (continued)

State Effective Date	Requires	Children	Where ⁽¹⁾ Seated	To Use ⁽²⁾	Vehicle	Exceptions	Penalties	Public Education Campaign	Other Provisions
Washington (1/1/83)	Resident Driver	Under Age 3	Not Specified	Approved Child Restraint Seat	Motor Vehicle	Taxi and limo purpose vehicles or resident drivers of other vehicles with seat belts are exempt.	\$25 fine; no credit available; cost of acquisition of system is proved; points will not be assessed.	Yes. Law specifies that public information programs will be undertaken.	Failure to use child restraint system shall not constitute negligence or carelessness; negligence or carelessness will not provide basis for civil action for damages.
		Ages 3-6	Not Specified	Approved Child Restraint Seat or Seat Belt					
West Virginia (7/81)	Resident Driver	Under Age 3	Not Specified	Approved Child Passenger Restraint System, Car Seat or Car Seat	Passenger Automobile, Van or Pick Up Truck	For hire vehicles, non-resident drivers.	Misfeasance \$10.00; \$20.00 fine or proof of purchase of system.	No.	Failure to use system does not constitute negligence per se.
		Ages 3-5	Not Specified	Approved Child Passenger Restraint System, Car Seat or Seat Belt					
Wisconsin (11/82)	Resident Parent or Legal Guardian	Under Age 2	Not Specified	Child Safety Restraint System Approved by State Department of Transportation	Motor Vehicle	Children who don't use system because of medical condition or baby size; motor bus; school bus; taxicab; vehicles which only seat 2 persons and which are 8 and passing over 2 persons over age 4 in vehicle; non-resident drivers.	\$30-\$75 fine for children under age 2; \$10-\$25 for first offense and \$25-\$200 for second offense for children aged 2-4; fines waived if proof of acquisition of system is shown.	No. However, fines will not be assessed until 5/1/83.	Failure to use system does not constitute negligence per se; use or non-use of system is inadmissible evidence in court.
		Ages 2-4	Not Specified	Child Safety Restraint System Approved by State DOT or Seat Belt					
Pennsylvania (11/1/81)	Resident Parent or Legal Guardian	Under Age 1	Not Specified	Approved Child Passenger Restraint System	Passenger Car, Class 1 & 2 Trucks, Class 3 & Antique Motor Vehicle, Motorhome	Non-residents; Medical conditions; or size of child.	Oral warning thru 1/85; after \$25 fine; waived if proof of acquisition is shown.	Yes. Hospital information on loan or rental of child seats.	Fines will be used to support loan a seat program. Must use Child Restraint if transporting child in vehicle cargo area. Failure to use system does not constitute negligence; not admissible in court.
		Ages 1-4	Rear Seat	Approved Child Restraint System or Seat Belt					

(1) Where not specified, we are assuming use is required in both front and rear seats.
 (2) Approved system is a system which meets Federal motor vehicle safety standards.

mvma

Prepared by: Mary Jones
 State Highway Department
 Motor Vehicle Manufacturers Association
 8/15/83

Updated by the National Transportation Safety Board
 November 14, 1983