

HB

105

STATE OF ALASKA
THE LEGISLATURE

LEGISLATIVE AFFAIRS AGENCY
LEGISLATIVE REFERENCE LIBRARY

POUCHY - STATE CAPITOL
JUNEAU, ALASKA 99811
907-465-3800

Copies of minutes listed below were originally included in this file. The minutes are available on the STAIRS database CMPR. In order to save space copies of minutes have not been left in the files.

Mary Van Nimwegen

HB 105

H. State Affairs

1/31/89



Matanuska-Susitna Borough

BOX 1608, PALMER, ALASKA 99645 • PHONE 745-9689

BOROUGH MANAGER

February 16, 1989

To: Judiciary Committee
From: Lee Hall, Director of Human Resources
Subject: House Bill 91

I wish to express a question or concern re. HB 91. Briefly, the definition of "matter of public concern" concerns me.

Gross mismanagement, substantial waste of funds, clear abuse of authority, etc. are very, very broad terms that a mal-contented employee could easily use to hide behind in order to gripe, complain, accuse, or otherwise express dissatisfaction with impunity. The bill needs modification or clarification.

Alaska State Legislature



House of Representatives House Judiciary Committee

P. O. Box V
State Capitol
Juneau, Alaska 99811
(907) 465-4990

February 20, 1989

MEMORANDUM

TO: Rep. Ben Grussendorf

FROM: Reps. Max Gruenberg and Peter Goll
Co-Chairs, House Judiciary Committee

RE: CSHB 105 (Jud) (Mandatory Seat Belt Law):
Judiciary Committee Amendments to HB 105

The House Judiciary Committee passed two amendments to HB 105:

1. Amendment No. 1 (by Rep. Gruenberg): Page 1, line 18, delete "provided and"

This amendment, adopted unanimously, was a "housekeeping" change. In current law, and in HB 105 as drafted, the verb "provided" is surplusage. There is no object for the verb "provided" in AS 28.05.095. The amendment therefore deletes the wording, with no substantive effect.

2. Amendment No. 2 (by Rep. Gruenberg): page 1, line 28, after "in", insert "a school bus or"

This amendment was offered at the request of the Department of Education. It was adopted without opposition after extensive discussion. The amendment exempts school bus passengers (not drivers) from the mandatory use of seat belts, if any belts are installed on the bus. The amendment thus continues the exemption for school bus passengers written into current AS 28.05.095.

CSHB 105 (Jud) incorporates these two amendments; there are no other changes from HB 105.

TESTIMONY IN SUPPORT OF HB105
SAFETY BELT USE LAW

Presented by Frank Bickford, Alaska Seat Belt Coalition, to House Judiciary Committee
February 15, 1989

THE ALASKA SAFETY BELT USE COALITION STRONGLY ENDORSES HB105--SAFETY BELT USE LAW. THE COALITION, FORMED IN 1985, ADVOCATES THE PASSAGE OF A SAFETY BELT USE LAW AND PROMOTES THE USE OF SAFETY BELTS.

SAFETY BELT USE LAWS THAT HAVE BEEN PASSED IN 31 STATES AND D.C. MOTIVATE PEOPLE TO BUCKLE UP. THOSE STATES FOUND THAT VOLUNTARY USE WAS LOW AND THROUGH LEGISLATING THE USE OF SAFETY BELTS THE INCENTIVES TO USE THEM HAVE RESULTED IN SIGNIFICANT NUMBERS OF LIVES SAVED AND COSTS REDUCED.

THE COALITION IS A GRASS ROOTS MOVEMENT COMPRISED OF OVER 8,000 INDIVIDUALS AND 51 ORGANIZATIONS REPRESENTING A WIDE RANGE OF INTERESTS, INCLUDING HEALTH CARE DELIVERY SYSTEMS, BUSINESS AND INDUSTRY, EDUCATION, FRATERNAL, SERVICE AND CIVIL ORGANIZATIONS WHO BELIEVE THAT A SAFETY BELT USE LAW WILL SAVE LIVES, DECREASE INJURIES AND SAVE THE STATE OF ALASKA MILLIONS OF DOLLARS IN EXPENDITURES EACH YEAR.

THE LATEST HIGHWAY USERS FEDERATION REPORT ESTIMATES THAT A MANDATORY SEAT BELT USE LAW CAN SAVE 35 LIVES A YEAR, REDUCE THE HARDSHIP AND COST OF OVER 60 INJURIES AND SAVE \$18 MILLION A YEAR TO THE STATE OF ALASKA IN MEDICAL COSTS, INSURANCE EXPENSES, LEGAL COSTS, LOSS OF PRODUCTIVITY AND OTHER COSTS SUCH AS POLICE, FIRE DEPARTMENT AND EMERGENCY SERVICE COSTS.

EDUCATIONAL CAMPAIGNS PROMOTING SAFETY BELT USE HAVE BEEN LAUNCHED HERE AND ACROSS THE COUNTRY. SAFETY BELT USAGE INCREASES TEMPORARILY DURING THE CAMPAIGN AND THEN RETURNS TO A LOW PERCENTAGE. THE AMOUNT OF MONEY SPENT IS GREAT AND THE RESIDUAL IMPACT SLIGHT. SAFETY BELT USE LAWS AND AN AGGRESSIVE EDUCATIONAL CAMPAIGN MUST BE COMBINED TO ACHIEVE MAXIMUM USE. IN THE ABSENCE OF A LAW EVEN WITH AN EDUCATIONAL CAMPAIGN, LESS THAN 32% OF THE POPULATION WILL BUCKLE UP. HOWEVER, A STATEWIDE POLL (ALASKA) LAST SHOWED THAT 81% OF ALASKANS WOULD WEAR SAFETY BELTS IF REQUIRED BY LAW.

A SAFETY BELT USE LAW IS THE INCENTIVE TO ESTABLISH THE SAFETY HABIT IN THOSE WHO OTHERWISE WOULD NOT BUCKLE UP.

IF A PERSON IS KILLED OR INJURED, IT AFFECTS MORE PEOPLE THAN THE VICTIM. PERSONS ARE NOT ALLOWED A "FREEDOM TO CHOOSE" TO PAY THE HEALTH CARE COSTS OF THOSE WHO "CHOOSE" NOT TO WEAR THEIR SAFETY BELTS.

THE COST OF NEEDLESS FATALITIES AND SERIOUS INJURIES ARE PAID BY ALL PERSONS--NOT SIMPLY THE VICTIM--IN INCREASED TAXES, INSURANCE PREMIUMS AND HEALTH CARE COSTS.

UNBELTED OCCUPANTS CAUSE INJURIES TO OTHER OCCUPANTS BY BECOMING "UNGUIDED MISSILES." THUS, THE "FREEDOM TO CHOOSE" TO WEAR THE BELT DOES AFFECT OTHERS DIRECTLY.

OTHER SIMILAR TRAFFIC-SAFETY LAWS PROTECT MOTORISTS AND OTHERS, SUCH AS SPEED LIMITS, DRINKING AND DRIVING AND DRIVER LICENSING. SAFETY BELT USE LAWS ARE CONSISTENT WITH THESE AND OTHER LAWS.

TRAFFIC ACCIDENTS DO NOT HAPPEN ON PERSONAL HIGHWAYS AND STREETS. THE COSTS TO SOCIETY IN TERMS OF MEDICAL, REHABILITATION, UNEMPLOYMENT AND WELFARE SERVICES SUPERCEDE THE "RIGHT" OF PEOPLE TO SERIOUSLY OR FATALLY INJURE THEMSELVES OR OTHERS BY NOT BUCKLING UP. IN 1985, 1986 AND 1987, 201 OUT OF 231 ALASKANS KILLED IN MOTOR VEHICLE ACCIDENTS WERE NOT "BUCKLED UP." THIS TRAGEDY COULD HAVE BEEN PREVENTED. STATISTICS FROM SAFETY EXPERTS SHOW THAT THERE IS A BETTER THAN 50 PERCENT PROBABILITY THAT THE DEATHS WOULD HAVE BEEN AVOIDED IF ALASKA HAD A SAFETY BELT USE LAW.

THE PROPOSED SAFETY BELT USE LAW IN ALASKA IS A SECONDARY OFFENSE, REQUIRING THAT A MOTORIST BE STOPPED FOR ANOTHER OFFENSE BEFORE A \$15 TICKET (WHICH MAY BE DONATED TO THE EMERGENCY MEDICAL SERVICES) CAN BE ISSUED FOR NOT USING SAFETY BELTS.

SECONDARY ENFORCEMENT WILL NOT IMPOSE ADDITIONAL BURDENS ON LAW ENFORCEMENT OFFICERS RESPONSIBLE FOR CITING MOTORISTS UNDER THIS ACT. SAFETY BELTS REDUCE TRAFFIC FATALITIES, WHICH ARE EIGHT TIMES AS EXPENSIVE TO INVESTIGATE AS NON-INJURY ACCIDENTS. IN FACT, OFFICERS WOULD HAVE MORE TIME TO CONCENTRATE ON OTHER TRAFFIC ENFORCEMENT PROGRAMS.

ONCE HB105 PASSES THE LEGISLATURE AND IS SIGNED BY THE GOVERNOR, THE ALASKA SAFETY BELT USE COALITION PAYS FOR A ONE YEAR EDUCATIONAL CAMPAIGN (T.V., RADIO, NEWSPAPER, DIRECT MAIL, PUBLIC SERVICE ANNOUNCEMENTS, AS WELL AS PRESENTATIONS TO INTERESTED ORGANIZATIONS, SCHOOLS AND COMMUNITIES) PROMOTING THE LAW. THIS SERVICE PROVIDED BY THE COALITION WILL MEAN THE STATE WILL NOT HAVE TO SPEND MONEY TO IMPLEMENT THE LAW.

THE STATISTICS, THE PUBLIC SUPPORT, THE EDITORIAL SUPPORT (ANCHORAGE TIMES, ANCHORAGE DAILY NEWS, FRONTIERSMAN, VALLEY SUN, JUNEAU EMPIRE AND FAIRBANKS DAILY NEWS MINER), AND LEGISLATIVE SUPPORT SHOWS THAT THE PROPOSED SAFETY BELT USE LAW IS ONE THAT ALASKA CAN LIVE WITH.

STEVE COWPER, GOVERNOR

DEPARTMENT OF EDUCATION

OFFICE OF THE COMMISSIONER

GOLDBELT PLACE
801 WEST 10TH STREET
P.O. BOX F
JUNEAU, ALASKA 99811-0500

February 8, 1989

The Honorable Max Gruenberg
Alaska State Representative
P. O. Box V
Juneau, Alaska 99811

Dear Representative Gruenberg:

As indicated in a conversation with your staff today, the Department of Education requests an amendment to HB 105, "An Act Relating to Mandatory Use of Safety Devices in Motor Vehicles," to exempt school buses. Our specific request is that Sec. 28.05.095 (c)(1) be amended to read:

- (c) Subsections (a) and (b) do not apply to
(1) passengers in a school bus or an emergency vehicle;

The reasons for our request are as follows:

1. Safety belts are not required in large school buses - The U.S. Department of Transportation has concluded in a report titled Safety Belts in School Buses (June, 1985) that the current construction of school buses referred to as "compartmentalization" (high back, close together, well padded, energy absorbing seats) provides adequate occupant protection, and that a Federal requirement for safety belts in large school buses is not warranted.
2. There are no standards for installation of safety belts in large school buses - The Federal government has not issued standards for installation of safety belts in large school buses. Seat strength, floor strength, anchorage requirements, belt type and size, etc. have not been specified.
3. Some large school buses in Alaska are nevertheless partially equipped with safety belts - The fact that safety belts are not required in large school buses, and that no installation standards exist, does

not preclude a local school district, private school or bus operator from installing belts if it so desires. Many belts serve only as restraining devices for special education students and are not intended to protect students in the event of an accident.

The Department of Education does not maintain statistics on the age, size and number of buses equipped with safety belts, nor how the belts were installed. It is conceivable that some belts have not been adequately installed and that the following situations may exist:

- a. buses with belts on seats not well anchored to the floor and, in some cases, which have no padding to cover the metal seat frame.
 - b. buses with seat construction inadequate to withstand the forces generated by safety belts which could collapse with pupils belted to them.
 - c. buses with floor strength that has deteriorated due to severe weather conditions and varied maintenance making the floor less capable of withstanding the forces of the bus seat with belted passengers in a crash situation.
 - d. buses with inoperable safety belts.
 - e. buses with safety belts at some seating positions and not at other seating positions.
4. Possibly more injuries to belted passengers in school buses - Crash testing conducted by the Canadian government and reported in the publication School Bus Safety Study issued January, 1985, by Transport Canada (an agency equivalent to the U.S. Department of Transportation) indicates that the use of lap seat belts in various sizes of school buses may result in more severe head and neck injuries for a belted occupant than for an unbelted one in a severe frontal collision. On smaller buses, the heads of all the restrained dummies experienced forces that were judged to be life threatening or fatal.

Based on the above factors, we believe that the State of Alaska should leave the decision to local school districts as to whether or not they want to mandate use of belts on school buses.

Your support of our requested amendment to HB 105 to exempt school buses will be appreciated. If you have questions, feel free to contact

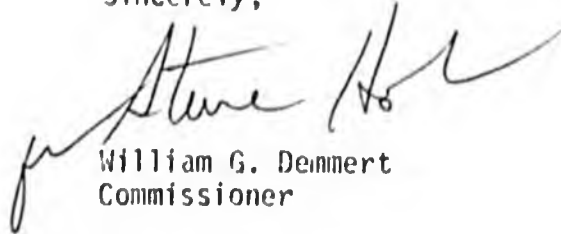
Representative Gruenberg

-3-

February 8, 1989

Romayne Kareen, the Department's Administrator of Pupil Transportation Services at 465-2890.

Sincerely,

A handwritten signature in cursive script, appearing to read "Steve Hole", is written over the typed name of William G. Dennert.

William G. Dennert
Commissioner

cc: The Honorable Sam Cotton
Alaska State Representative
Steve Hole, Deputy Commissioner
Department of Education
Romayne Kareen, Administrator
Pupil Transportation Services
Department of Education

ALASKA STATE FIREFIGHTERS ASSOCIATION
LEGISLATIVE TESTIMONY
February 15

House Bill 105 Mandatory Use Of Seatbelts

The Alaska State Firefighters Association supports H B. 105 and the mandatory use of seat belts in all motor vehicles. Members of the A.S.F.A. are first responders to motor vehicle accidents either as emergency medical technicians or as firefighters. In our experience seat belts reduce injuries and save lives.

We urge you to not exclude rural areas from this legislation for several important reasons. The rural victim of a serious motor vehicle accident is less likely to survive than the urban victim with the same injury, due to increased transportation time required to receive critical medical care. Serious injuries often require medical emergency evacuation from rural areas. By reducing the severity of injuries through mandatory use of seat belts, locally available medical treatment will be sufficient more often, and more victims will survive the critical first hours after the accident.

Accidents in rural areas often go undetected for long periods of time. A person who is severely injured because of not wearing a seat belt is less likely to be able save himself than a less seriously injured person.

Rural accidents often are the result of poorly maintained roads and vehicles. Seat belts are available in virtually every vehicle in the state. Seat belts are low tech devices which seldom if ever need maintenance. Malfunctioning seat belts are easily identified and repaired in rural areas. Air bags will not be available in the majority of vehicles in the state for many years. When they are widely available, they will not be serviceable in rural areas. Air bags are most effective in front end collisions. Seat belts are effective in all types accidents.

Rural residents are less likely to be covered by health insurance. The financial burden for uninsured persons injured in serious motor vehicle accidents falls on the family. If the family is unable to pay, the burden shifts to the rest of us through higher health care costs.

The most important reason to mandate seat belts is the family. The death or serious injury of a family member is traumatic. Nothing is more heartbreaking than to have surviving children ask about their dead parents all the way to the hospital after a serious motor vehicle accident. When the death could have been easily prevented with seatbelts,

the loss is even more tragic. Seat belts preserve family members.

The Alaska State Firefighters Association urges you to pass this legislation without amendment. The use of seat belts is a simple solution to a serious problem. The bill hurts no one. At worst it may inconvenience some. We believe a little inconvenience is a small price to pay for reducing injuries and saving lives. We believe the benefits of this bill transcend urban and rural boundaries. This bill is good for everyone.

FISCAL NOTE

REQUEST:

Revision Date: 3/8/89 Agency Affected: Public Safety
Title: Mandatory use of safety devices BRU: Highway Safety Planning Agency
in motor vehicles
Sponsor: House Judiciary Component: _____
Requestor: Senate Transportation

EXPENDITURES/REVENUES: (Thousands of Dollars) (Inflation not included)

OPERATING	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-

CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-
---------	-----	-----	-----	-----	-----	-----

REVENUE	-0-	-0-	-0-	-0-	-0-	-0-
---------	-----	-----	-----	-----	-----	-----

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

POSITIONS:

FULL-TIME	0	0	0	0	0	0
PART-TIME	0	0	0	0	0	0
TEMPORARY	0	0	0	0	0	0

ANALYSIS: (Attach a separate page if necessary)

No fiscal impact is anticipated. Section 4 of the bill allows the judge to waive the \$15.00 fine if a donation is made to the Emergency Medical Services entity serving the locale where the violation occurred. Revenue generated for the State is therefore expected to be negligible.

Prepared by: Ellen Moore, Program Coordinator Phone: 465-4375
Division: Highway Safety Planning Agency Date: 3/8/89

Approved by Commissioner: Arthur English Date: 3/8/89
Agency: Department of Public Safety

FISCAL NOTE

REQUEST:

Revision Date: _____
 Title: "An Act relating to mandatory use
 of safety devices in motor vehicles."
 Sponsor: Repr. Cotten
 Requestor: House State Affairs

Agency Affected: Department of Law
 BRU: Prosecution
 Components: All

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-

CAPITAL						
---------	--	--	--	--	--	--

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

FUNDING: (Thousands of Dollars)

GENERAL FUND	-0-	-0-	-0-	-0-	-0-	-0-
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME	-0-	-0-	-0-	-0-	-0-	-0-
PART-TIME						
TEMPORARY						

ANALYSIS : (Attach a separate page if necessary)

Please see the attached analysis.

Prepared by: Richard I. Pegues, Director Phone: 465-3672
 Division: Administrative Services Date: January 30, 1989
 Approved by Commissioner: Richard I. Pegues / FOR
Grace Berg Schaible, Atty. Gen. Date: January 30, 1989
 Agency: Department of Law

Distribution (by preparer):

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

CONTINUATION of FISCAL NOTE ANALYSIS

For Bill/Resolution No. HB 105

This bill amends AS 28.05 to require the mandatory use of safety belts in motor vehicles, and the bill also provides certain exemptions for mail and newspaper delivery vehicles. Under the bill's provisions, a peace officer may not stop or detain a motor vehicle to determine compliance, unless the peace officer has probable cause to stop or detain for some other reason. A person convicted of violating mandatory seat belt use would be guilty of an infraction and fined up to \$15. This bill will not have a fiscal impact on the Department of Law, because infractions are handled in traffic court, which does not require involvement of the department's staff or resources.



Official Business

COMMITTEE:

HOUSE JUDICIARY

DATE: February 16, 1989

SIGN-IN

Subject of meeting:

HB 91 Protection of "Whistleblowers"
 HCR 1 Amend Uniform Rule 56: Session Schedule
 Unfinished Business.
 HB 58 Fire Protection
 HB 105 Mandatory Seatbelts - held over from
 2/15/89

NAME

ADDRESS FULL ADDRESS PLEASE

PHONE..

REPRESENTING

DO YOU WANT TO TESTIFY? WHICH BILL?

Bob Cooksey		586-3090	NEA-AK	HB 91
Mark S. Johnson	AKSS EMS PO Box H-06C Juneau	465-3027	Health & Social Services	HB 105
Juneau Fowler	Box 400 Juneau 99811	4970	Office of the Ombudsman	HB 91
David Otto	Box 0201 Juneau 99811	4430	Personnel	HB 91
Bill Glude Karen Wood	PO Box 22151 Juneau 99802	463-3366	AK Env. Lobby	HB 91
Mike Lewis	P.O. Box N Juneau AK 99811	465-4374	Public Safety	Yes HB 105
Karen Lanfer	3970 N Douglas Juneau	586-3210	MADD Seat Belt Coalition	HB 105

HOUSE COMMITTEE ON STATE AFFAIRS

**RECAP OF
HB 105**

Mandatory Seatbelts

Received January 20, 1989
by Reps. Cotten, Ulmer, Zawacki, Gruenberg and
Hanley

Heard January 31, 1989

Passed Out of Committee January 18, 1989
4 Do Pass
2 No Recommendation

TABLE OF CONTENTS

HB 105: Mandatory Seatbelts

- Item 1: HB 105 by Cotten, Ulmer, Zawacki, Gruenberg and Hanley
- Item 2: Letter of Intent and Public Safety Fiscal Note
- Item 3: State Newspaper Editorials
- Item 4: Seatbelt Coalition Backup Materials Submitted by Frank Bickford
- Item 5: HESS Position Paper

Item 2

BILL NO: HB 105

DATE: January 26, 1989

TITLE: "An Act relating to mandatory use of safety devices in motor vehicles."

CONTACT: Ellen Moore
Highway Safety Planning Agency
465-4375

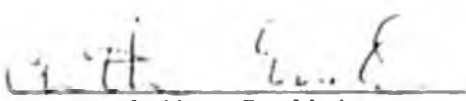
DEPARTMENT OF PUBLIC SAFETY
PUSH TO OPEN COVER

The intent of this legislation is to reduce deaths and serious injuries to occupants of motor vehicles by promoting the great use of safety belts by the motoring public.

Thirty-one states have enacted bills requiring the use of safety belts. Jurisdictions that have had the longest experience with their laws have found that the greater the level of increase in seatbelt use, the greater reduction in fatalities and serious injuries.

House Bill 105 has the potential to save as many as 35 lives in Alaska each year. This figure assumes a 70% compliance rate and a 50% effectiveness rate. Because the bill allows only "secondary" enforcement, it may be difficult to achieve this level of use; however, surveys conducted since 1985 by Hellenthal and Associates indicate that approximately 80% of the Alaskans surveyed will wear safety belts simply because such a law exists.

We recommend passage of HB 105 as written.



Arthur English
Commissioner

FISCAL NOTE

REQUEST:

Revision Date: _____
Title: Mandatory use of safety devices
in motor vehicles
Sponsor: Representative Corten, et al
Requestor: House State Affairs

Agency Affected: Public Safety
BRU: Highway Safety Planning Agency
Component: _____

EXPENDITURES/REVENUES: (Thousands of Dollars) (Inflation not Included)

OPERATING	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-

CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-
---------	-----	-----	-----	-----	-----	-----

REVENUE	-0-	-0-	-0-	-0-	-0-	-0-
---------	-----	-----	-----	-----	-----	-----

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

POSITIONS:

FULL-TIME	0	0	0	0	0	0
PART-TIME	0	0	0	0	0	0
TEMPORARY	0	0	0	0	0	0

ANALYSIS: (Attach a separate page if necessary)

No fiscal impact is anticipated. Revenue generated will be negligible. Section 3 provides for judicial waiving of the \$15.00 fine if a donation is made to the Emergency Medical Services entity serving the locale where the violation occurred.

Prepared by: Ellen Moore, Program Coordinator
Division: Highway Safety Planning Agency

Phone: 465-4375
Date: 1/26/89

Approved by Commissioner: Arthur English
Agency: Department of Public Safety

Date: 1-27-89

Tuesday, January 17, 1989

Make it mandatory

The Legislature could do a simple thing that would save lives, reduce injuries and save money. It could pass a law making the use of safety belts in vehicles mandatory.

Many people don't like the idea of mandatory safety belt laws. The use of safety belts should be a personal choice, they say. The government has no business dictating personal choices.

It's a compelling argument, but not so compelling as the harm that is done by not wearing safety belts. According to a 1987 study, mandatory use of safety belts in Alaska would save 35 lives a year, reduce injuries to more than 600 persons, save \$5 million worth of lost labor and decrease other economic losses associated with highway death and injury by \$13 million. Not just the victims, but everyone pays the cost of not wearing safety belts in terms of increased taxes, insurance premiums and health care costs.

Thirty-one states and the District of Columbia have passed mandatory safety belt laws. In every state, use of safety belts has increased substantially.

Educational programs promoting safety belt use fail to provide the incentive to buckle up that a law requiring it does. We reluctantly move from a position of advocating voluntary compliances to urging the Legislature to make safety belts mandatory. They should, however, avoid some of the problems that Washington state encountered when they initially failed to provide for exemptions for certain types of delivery vehicles.

FAIRBANKS

Daily News - Miner

A matter of safety ¹⁻²⁵⁻⁸⁹

THERE IS truly only one basic question to be answered when it comes to trying to decide whether Alaska should adopt a law which requires motorists to buckle up their seat belts when they get behind the wheel.

Do seat belts save lives?

And the overwhelming evidence — from all kinds of national statistics down to the doctors in the emergency rooms of Anchorage hospitals — is that they do.

It also is evident that without a law some people will not buckle up. So the law is necessary.

It is necessary in the same way that everyone who boards an airplane is required to fasten his or her seat belt.

And it is no more onerous a requirement than making it a law that motorists must halt at stop signs and red lights, yield to emergency vehicles or obey speed limits.

THIS ISN'T a debate over the infringement of personal liberties, as some opponents attempt to make it.

If you think your freedom would be abridged by a mandatory seat belt law, you no doubt are in a simmering fit right now because the state requires you to have a driver's license before you can legally operate a motor vehicle.

What's the difference?

Both items, as a matter of fact, are life-saving ingredients to making our streets and highways safer. You don't want to be on the same road with drivers who are not licensed. That's a law that looks after your own safety. So, too, would one requiring you to do what you may now forget to do when you slip behind the wheel — and that's to snap the seat belt in place.

Opponents argue that the lobbying for enactment of the seat belt law is nothing more than a deceitful ploy by the auto industry to try to avoid eventually providing

air bags in all vehicles.

But so what if auto makers support the use of seat belts? So do a lot of other people, including the insurance industry, various medical societies and individual doctors, and every other motorist whose life has been saved because a seat belt was secure at the time of an accident.

Sen. Arliss Sturgulewski, the Anchorage Republican who is a prime sponsor of the seat belt law in this session of the legislature, is correct.

It's simply a matter of safety, pure and simple. Forget all the extraneous arguments. Stick to the basic reason why.

JUST THE other day, new statistics proved the point.

A study of all traffic accidents in North Carolina from 1983 to 1987 showed a dramatic drop in the number of deaths and serious injuries after a mandatory seat belt law was enacted. This report estimated that North Carolina may have 1,100 fewer severe and fatal highway injuries every year as a result of mandatory seat belt use.

A second study of 1,364 accident victims taken to trauma units of four Chicago-area hospitals showed that hospital admissions decreased by nearly 65 percent and related costs dropped 66 percent for those who were wearing seat belts. This study said the average cost of treating accident victims who were wearing seat belts was \$534, compared to \$1,583 for victims who didn't wear belts.

The Journal of the American Medical Association, reporting on the new studies, said this: "Safety belts turn out to be an economical way of trying to reduce that health-care dollar."

Thirty-one states and the District of Columbia have seat belt laws.

Alaska should become the 32nd state to get on this safety bandwagon.

COUNTRIES WITH SAFETY BELT USE LAWS

Country	Effective Date	Country	Effective Date
Australia	1/72	United States and Territories	
Austria	7/76	California	1/86
Belgium	6/75	Colorado	7/1/87
Brazil	6/72	Connecticut	1/1/86
Bulgaria	1976	Dist. of Columbia	12/12/85
Canadian Provinces		Florida	7/1/86
Alberta	7/87	Hawaii	12/16/85
British Columbia	10/77	Georgia	9/1/88
Manitoba	1/84	Idaho	7/1/86
Newfoundland	8/82	Illinois	7/1/85
New Brunswick	11/83	Indiana	7/1/87
Nova Scotia	1/85	Iowa	7/1/86
Ontario	1/76	Kansas	7/1/86
Quebec	8/76	Louisiana	7/1/86
Saskatchewan	7/77	Maryland	7/1/86
Czechoslovakia	1/69	Michigan	7/1/85
Denmark	1/76	Minnesota	8/1/86
East Germany	1/80	Missouri	9/28/85
Finland	7/75	Montana	10/1/87
France	10/79	Nevada	7/1/87
Greece	12/79	New Jersey	3/1/85
Hong Kong	10/83	New Mexico	1/1/86
Hungary	7/77	New York	12/1/84
Iceland	10/81	North Carolina	10/1/85
Ireland	2/79	Ohio	5/6/86
Israel	7/75	Oklahoma	2/1/87
Ivory Coast	1970	Pennsylvania	11/23/87
Japan	12/71	Puerto Rico	1/1/74
Jordan	12/83	Tennessee	4/21/86
Luxembourg	6/75	Texas	9/1/85
Malaysia	4/79	Utah	4/29/86
Netherlands	6/75	Virginia	1/1/80
New Zealand	6/72	Washington	6/11/86
Norway	9/75	Wisconsin	12/1/87
Poland	1/84	United Kingdom	1/83
Portugal	1/78	USSR	1/76
Singapore	7/81	West Germany	1/76
South Africa	12/77	Yugoslavia	1/85
Spain	10/74	Zimbabwe	7/80
Sweden	1/75		
Switzerland	1/76		
Turkey	10/84		

SOURCE: University of Michigan Transportation Research Institute.

Anchorage Daily News



Winner, 1976 Pulitzer Prize Gold Medal for Public Service

Gerald E. Grilly
Publisher

Howard Weaver
Managing Editor

Michael Carey
Editorial Page Editor

Katherine Fanning, Editor and Publisher 1971 to 1983
Lawrence Fanning, Editor and Publisher 1967 to 1971

Founded in 1946 by Norman C. Brown

A way to prevent needless deaths

This year, the legislature has a chance to help fight one of the most serious health problems in the state — and it can do so with very little money or effort.

The health problem is accidental injuries. They are the second leading cause of death for all Alaskans — and the leading cause among young Alaskans. Too many of these deaths come in motor vehicle accidents — some 231 over the past three years.



There's a simple way to cut this carnage on the state's highways: Require people to wear seat belts. Of those 231 victims, 201 were not belted in.

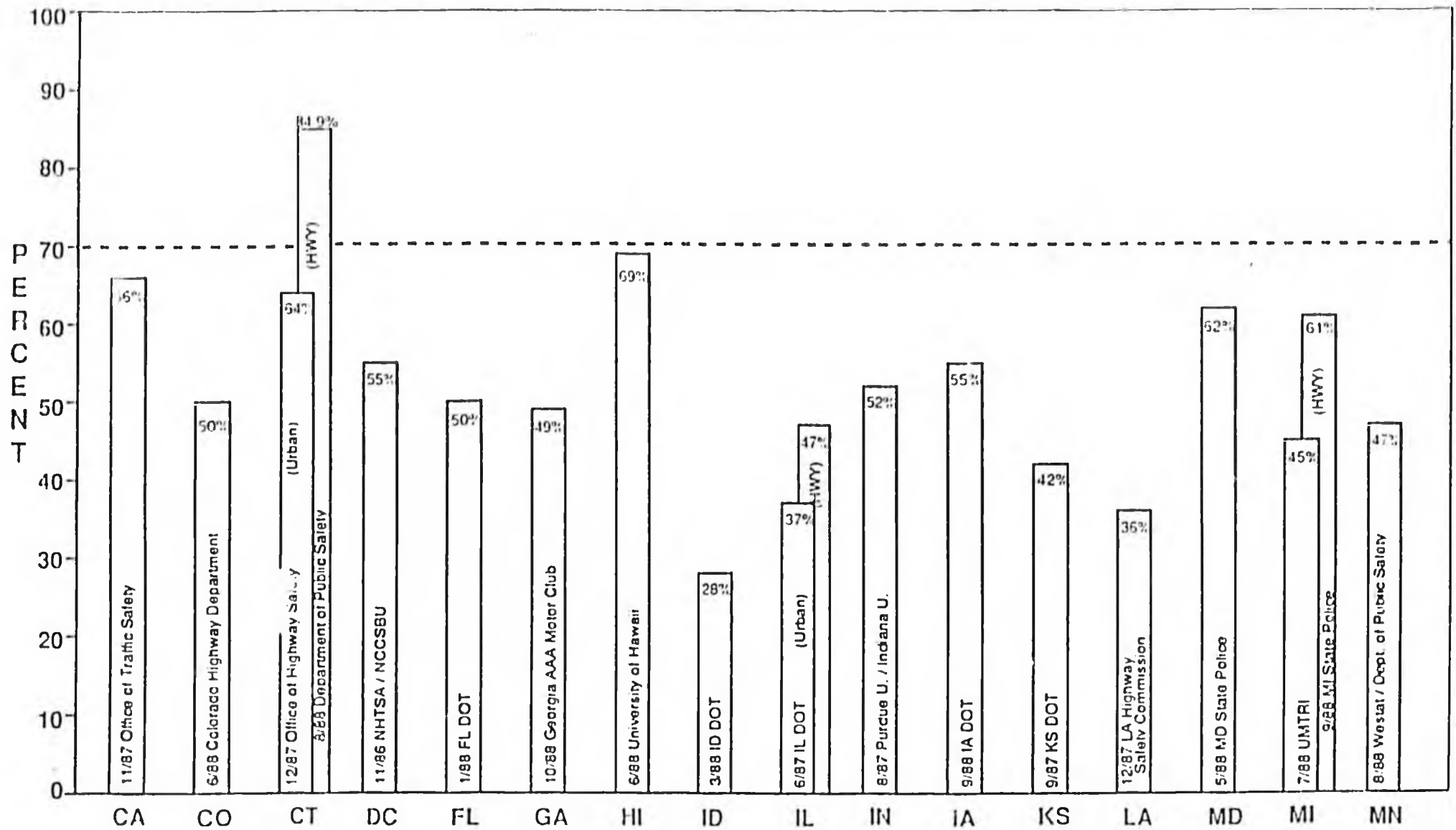
A bill to mandate seat belt use passed the state House last year but never made it to the Senate floor for a vote. This year, with new legislative leadership, prospects for a seat belt law look much better.

In the past, some people have resisted a seat belt law because they see it as an infringement on their personal freedom. Why they object is a mystery. The resulting "intrusion" into people's lives is on a par with a parking ticket — and has considerably more justification. When a parked car overstays its welcome, there's just one less parking space available. When car passengers fail to buckle up, they invite serious injury and death, and increase the costs we all pay for emergency services, insurance and health care.

Alaska's proposed seat belt law offers us all a gentle reminder to do what's good for everyone. The violation would be a secondary offense, meaning that drivers cannot be cited unless they are stopped for some other violation. The fine would be a mere \$15. If violators don't want to send their checks to the government, they can donate the \$15 to emergency medical services.

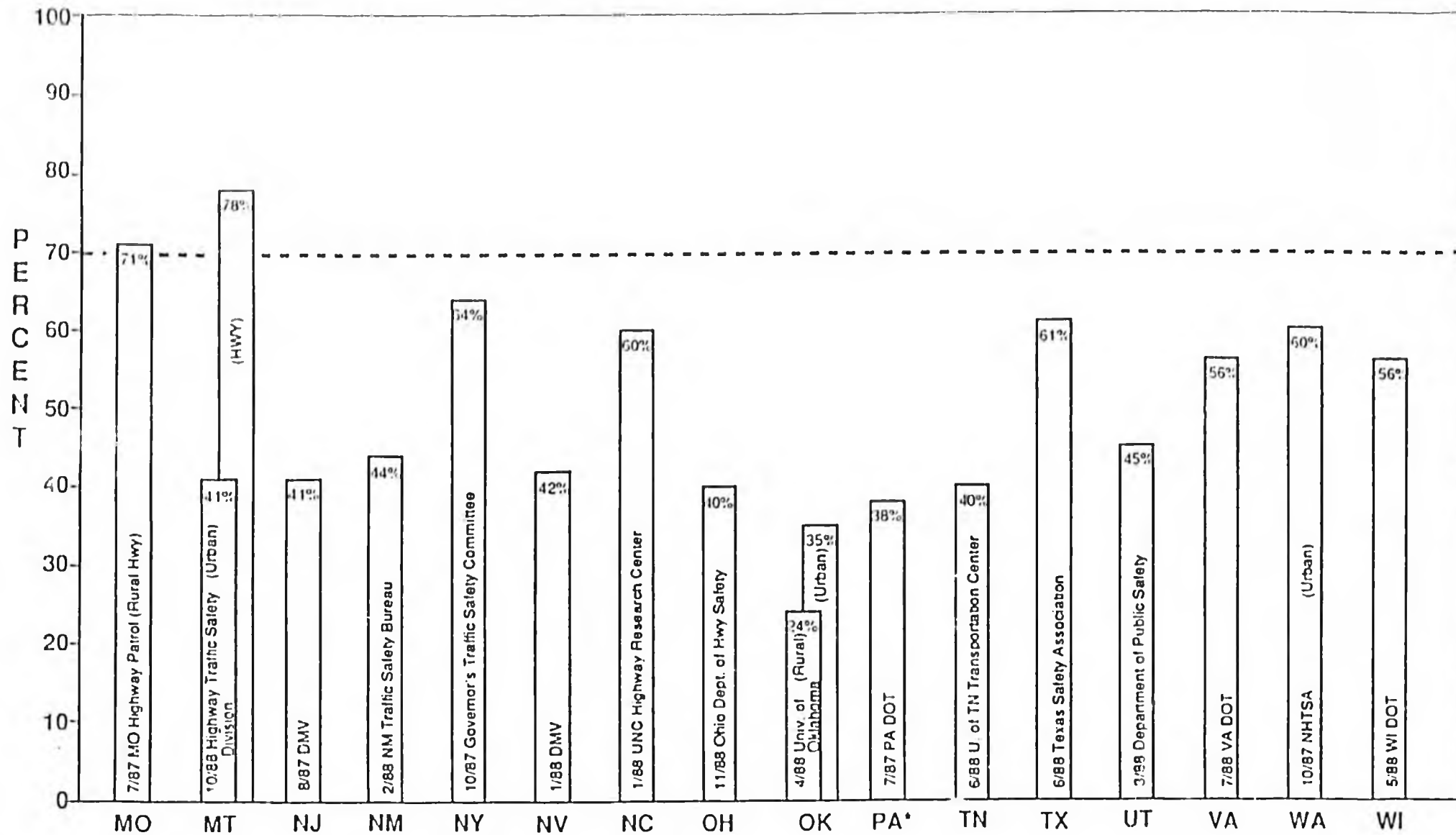
Seat belts save lives — but only if people wear them. A mandatory seat belt law is a reasonable way to get more people to buckle up.

COMPLIANCE RATES IN POST-LAW STATES



COMPLIANCE RATES IN POST-LAW STATES

Page 2



* Use rates prior to law taking effect

Facts and Attribution

- Safety-belt use has saved 10,938 lives since 1983. Of those, state safety-belt-use laws were credited with saving 6,906 lives. National Highway Traffic Safety Administration (NHTSA), 1988
- The probability of being involved in a motor-vehicle injury accident during a 75-year lifetime is better than 80 percent. NHTSA, 1987
- There were 41,435 fatal accidents resulting in 46,386 fatalities in 1987. (Includes drivers or passengers in all types of motor vehicles, pedestrians and bicyclists.) NHTSA, 1988
- There were 25,144 passenger-car fatalities and 8,042 light-truck fatalities in 1987. NHTSA, 1988
- Approximately 3,896,000 people were injured in traffic crashes in 1986. (2,835,000 in passenger car accidents alone.) NHTSA, 1988
- The severity of approximately 100,000 injuries is reduced each year as a result of states having passed safety-belt-use laws. University of North Carolina Highway Safety Research Center, 1987
- In 1986, an average of one person was killed in traffic accidents every 11 minutes. NHTSA, 1988
- Unrestrained passenger car occupants are twice as likely to receive moderate to critical injuries in the event of a crash as restrained occupants. NHTSA, 1987
- On a national basis, each 10 percent increase in safety-belt use results in 30,000 less serious and moderate injuries and a savings of approximately \$800 million in direct costs to society. David A. Sleet, San Diego St. University, 1986
- Traffic crashes rank as the No. 1 killer of Americans ages 1-40. NHTSA, 1988
- In terms of years of life lost to Americans (based on life expectancy data), injuries as a result of motor vehicle accidents exceed cancer by 1.1 million years and top heart disease and strokes by 900,000 years. Institute of Medicine, National Research Council and the National Academy of Sciences, 1985
- Of motor vehicle-related deaths, 82 percent occur during normal weather conditions. NHTSA, 1988
- Less than one half of 1 percent of all injury-producing, passenger-car collisions involve fire or submersion. NHTSA, 1988

- Safety belts reduce the likelihood of fatal or serious injuries by 40 to 55 percent. NHTSA, 1988
- Automobile accidents cost employers an average of \$120,000 per death and \$1.9 billion annually. National Highway Users Federation and the American Safety Federation (HUF), 1985
- The cost of all traffic deaths and injuries in the United States during 1986 was about \$74.2 billion, including:
 - \$27.4 billion in property damage
 - \$16.4 billion in lost productivity
 - \$ 4.1 billion in medical costs
 - \$26.3 billion in other costs (such as insurance administration, legal and court costs and emergency services.) NHTSA, 1988
- People thrown from their cars are 25 times more likely to be killed than if they stayed in their vehicle. About three out of four people involved in a fatal crash who were thrown from their vehicles in 1984 were killed. NHTSA, 1986
- Of the total passenger-car fatalities, 92 percent occur in the front seat. NHTSA, 1988
- Three out of every four traffic accidents happen within 25 miles of the home. National Safety Council, 1986
- The overall fatality risk of back-seat passengers is reduced by 24 to 40 percent through lap-belt use. NHTSA, June 1988
- Safety-belt-use legislation has been passed in 31 states and the District of Columbia, covering nearly 207,000,000 persons. Traffic Safety Now, Inc., 1988
- It is estimated if 70 percent of passenger car occupants regularly wore their safety belts in 1985, 7,400 lives would have been saved and 135,000 moderate to severe injuries would have been avoided. NHTSA, 1986
- NHTSA estimates lap belts in the rear seat could have saved an estimated 660 lives and prevented 10,200 serious injuries in 1987 if use were 100 percent. NHTSA, 1988
- Safety-belt use among drivers has risen from 14 percent in 1984 to more than 43 percent in 1988. Among states with safety-belt-use laws, 51 percent of motorists observed in 1987 wore their safety belts compared to only 27 percent in states without laws. NHTSA, 1988

SAFETY-BELT FACTS: JUDICIAL DECISIONS

TEXAS

- The Texas First Court of Appeals ruled that the legislature can regulate highways. The judgment was in response to a suit which claimed front-seat occupants should be exempt from safety-belt-use laws because the law excludes postal workers. (Richards v. Texas, 1987)
- The Texas Court of Criminal Appeals refused to review an appeal of the state's belt law by attorney R. D. Richards, who claimed the mandate infringed on his personal liberties.

ILLINOIS

- Elizabeth Kohrig of Illinois was convicted of failing to wear her safety belt. She appealed, claiming a safety-belt-use law violates a motorist's right to privacy. The case went through several courts in Illinois. Kohrig's claim lost at every level, including the United States Supreme Court which said safety-belt-use laws do not pose a "substantial federal question."

HAWAII

- The Hawaii Intermediate Court of Appeals rejected Diana Darnell's challenge to a citation for driving without a safety belt. The court said the "enormous social cost of unnecessary death and injury" justifies the safety-belt-use law. (Darnell v. Hawaii, 1987)

NEW JERSEY

- The New Jersey Supreme Court ruled defendants in accident litigation can resort to a "seat-belt defense" to reduce their financial responsibility. Juries are given a formula by which they can reduce a financial award if the plaintiff was not buckled up when involved in an accident. (Waterson v. General Motors, 1988)

• • •

FACT SHEET:

UNIVERSITY OF MICHIGAN

"Effects Of Mandatory Safety Belt Use On Hospital Admissions"

August 1988

This study assessed the effects of Michigan's safety-belt-use law on more than 8,000 motor-vehicle injuries which resulted in hospitalizations at 14 area hospitals.

It was conducted by the University of Michigan School of Public Health from data collected through the Michigan Inpatient Database from January 1980 through October 1986. Major findings of this study include:

- The Michigan safety-belt-use law passed in July 1985 has resulted in a 19-percent reduction in hospitalizations due to automobile accidents.
- There were 20 percent fewer injuries to body extremities following the passage of Michigan's belt-use law.
- Hospitalizations lasting more than one week decreased nearly 25 percent after the law went into effect.
- After the state safety-belt-use law went into effect, minorities experienced 22 percent fewer injuries.
- A 32-percent decline in injuries occurred among patients using public-health insurance after passage of the state law.
- With regard to the contention that safety belts may cause injuries, researchers concluded "the benefits of restraints far exceed the risks associated with them."

* * *

12/27/88

WHY ALASKA NEEDS A SAFETY BELT USE LAW

By Frank Bickford, Executive Director
Alaska Safety Belt Use Coalition, 360 W.
Benson #101, Anchorage, Ak 99503, 907-
561-7525.

One thing alone can save 35 lives a year, reduce the the hardship and costs of over 600 injuries, save \$5 million worth of lost labor, and decrease economic losses associated with highway death and injury alone by as much as \$13 million (Estimates from The Alaska Highway Users Study, 1987): Wearing The Safety Belts Already In Our Cars.

These facts are just four of the reasons Alaska needs a law requiring safety belt use. Although a major purpose of a Alaska Safety Belt Use Law would be to promote the safety of drivers and passengers using their safety belts, such a law would also:

- promote the safety of street and highway travelers other than safety belt users;
- promote the public welfare and safety by reducing highway deaths and injuries and public expenditures

In other words, if Alaska requires safety belts to be worn -- everyone can benefit!

Belt use laws that have been passed in 31 States and D.C. motivate people to buckle up. Those states found that voluntary use was low and through legislating the use of safety belts the incentives to use them have resulted in significant numbers of lives saved and costs reduced.

Educational campaigns promoting safety belt use have been launched here and across the country. Safety belt usage increases temporarily during the campaign and then returns to a low percentage. The amount of money spent is great and the residual impact slight. Safety belt use laws and an aggressive educational campaign must be combined to achieve maximum use. In the absence of a law even with an educational campaign, less than 32% of the population will buckle up. However, a Hellenthal statewide poll (Alaska) last year showed that 81% of Alaskans would wear safety belts if required by law.

A safety belt use law is the incentive to establish the safety habit in those who otherwise wouldn't buckle up.

If a person is killed or injured, it affects more people than the victim. Persons are not allowed a "freedom to choose" to pay the health care costs of those who "choose" not to wear their safety belts.

The cost of needless fatalities and serious injuries are paid by all persons - not simply the victim- in increased taxes, insurance premiums and health care costs.

Unbelted occupants cause injuries to other occupants by becoming "unguided missiles." Thus, the "freedom to choose" to wear the belt does affect others directly.

Other similar traffic - safety laws protect motorists and others, such as speed limits, drinking and driving and driver licensing. Safety belt use laws are consistent with these and other laws.

Traffic accidents do not happen on personal highways and streets ---- the costs to society in terms of medical, rehabilitation, unemployment and welfare services supercede the "right" of people to seriously or fatally injure themselves or others by not buckling up.

As a citizen and taxpayer, your rights are infringed upon by those who aren't responsible enough to buckle-up voluntarily; they leave you to pick up the tab for increased costs.

Ninety percent of those persons killed in motor vehicle accidents in Alaska during 1985, 1986, and 1987 were not wearing safety belts.

The proposed safety belt use law in Alaska is a secondary offense - requiring that a motorist be stopped for another offense before a \$15 ticket (which may be donated to Emergency medical services) can be issued for not using safety belts.

Secondary enforcement will not impose additional burdens on law enforcement officers responsible for citing motorist under this act. Safety belts reduce traffic fatalities, which are eight times as expensive to investigate as non-injury accidents. In fact, officers would have more time to concentrate on other traffic enforcement programs.

In the past three years Hellenthal & Associates (Polling Firm) have conducted extensive Statewide & Local polls that show over 65% of Alaskans supporting a safety belt use law.

In the past three years over 8,000 Alaskans have signed letters of support for the proposed safety belt use law and over 50 businesses have passed supportive resolutions.

The Alaska State House in 1987 passed the safety belt use law with bipartisan support. The Senate in 1988 failed to act on the legislation but 1989 looks a lot more favorable for passage - Reasons; The Speaker of the House for '89 is Sam Cotten who was the author of the safety belt use bill in 1987. The President of the Senate Tim Kelly has been a supporter of the proposed law and in December of '88 at the Eagle River Valley Community Council again stated his support. The Governor has also stated support for the proposed law and this year's sponsor of the safety belt use bill is State Senator Arliss Sturgelowski - Chairman of the Rules Committee.

The statistics, the public support, the editorial support (Anchorage Times, Anchorage Daily News, Frontiersman, Valley Sun, Juneau Empire), and legislative support shows that the proposed safety belt use law is one that Alaska can live with.



Life

FRIDAY, DECEMBER 23, 1988

The big benefits of buckling up

By Dan Sperling
USA TODAY

Wearing seat belts reduces car-crash victims' injuries by 60 percent and cuts their hospital costs by more than \$1,000, a new study suggests.

Dr. Elizabeth Mueller Orsay, assistant professor of emergency medicine at the University of Illinois School of Medicine in Chicago, and colleagues studied 1,364 emergency-room patients who had been in auto accidents.

Fifty-eight percent wore a safety belt when the accident occurred; 42 percent didn't.

Seat-belt wearers had a 60 percent reduction in injury severity, a 65 percent decrease in hospital admissions and a 66 percent reduction in hospital costs compared with those who wore no seat belt.

How seat-belt wearers fared compared with those who didn't:

► Seven percent of the seat-belt wearers had to remain in the hospital overnight, compared with 19 percent of the other patients.

► The average hospital charge for seat-belt wearers was \$534, compared with \$1,583 for those not wearing a seat belt.

"This study very strongly shows the benefits of buckling up, both for the individual and for society as a whole," says Orsay, whose study is reported in today's *Journal of the American Medical Association*.

Car accidents are the USA's leading cause of death among people age 5 to 34, and cost the country an estimated \$57 billion a year, says Orsay.

About 3.2 million people are injured each year in car accidents. Though the government estimates that if everyone used seat belts, traffic fatalities would be cut in half and injuries reduced by 65 percent, only 31 states and the District of Columbia have laws requiring their use.

Another report, in the same issue, estimates that North Carolina's mandatory seat-belt law, enacted last year, has resulted in 1,100 fewer severe and fatal highway injuries annually.

Robert B. Atwood
President and Publisher

Elaine Atwood
Assistant Publisher

William J. Tobin
Vice-President, Editor-in-Chief

Editorials

You buckle up in Canada

IN THE for-what-it's-worth department, all the provinces of Canada now have laws making mandatory the use of seat belts by motorists.

Prince Edward Island was the last to join the national movement, putting its mandatory seat belt law into effect this past January.

British Columbia was an early member of the buckle-up brigade, enacting its mandatory law in October 1977. Alberta, among the Western provinces, joined the flock last July.

The reason, of course, is that seat belts save lives — even though their use is a habit that many motorists find hard to adopt.

Arguments that it infringes on personal rights to make it illegal to drive without seat belts are no more valid than saying that requiring a motorist to have a driver's license is an attack on one's liberties.

A bill to make it illegal to

drive in Alaska without seat belts snapped into place was killed in the last legislative session. It died in committee, despite indications that it would have passed given the chance to reach the floor.

ONCE AGAIN, the argument was that it's none of the state's business whether a person buckles up — and that without the requirement, independent Alaskans will do what's right and they don't need the state telling them what to do.

The same Alaskans, however, apparently have no reluctance to fasten their seat belts when they board an airplane — something that also is mandated by the long arm of the law.

And the fact remains that there is more danger of a fatal accident on the highway than there is in the air.

So what's the problem, anyway?

Position Paper

HB 105

For an Act entitled: "An Act relating to mandatory use of safety devices in motor vehicles."

This act repeals and reenacts AS 28.05.095 to require that "a person 16 years of age or older may not occupy a motor vehicle while being driven unless restrained by a safety belt."

Children under four years old are required to be in a U.S. Department of Transportation (DOT) approved child safety device, and children between four and sixteen must be in an approved safety device or secured by a safety belt.

This bill would exempt emergency vehicles from the requirement, vehicle operators engaged in the delivery of mail and others as determined by regulation.

The bill would establish a penalty of up to \$15 in fines which could be waived in lieu of a contribution to the local Emergency Medical Service (EMS).

The Department of Health and Social Services supports the passage of this bill for the following reasons:

- 1) Motor vehicle crashes are a leading cause of death, injury and long-term disability;
- 2) Numerous studies have shown that safety belts and other vehicle safety restraints substantially reduce the likelihood of death or injury to motor vehicle occupants involved in crashes;
- 3) Efforts to educate the public about the benefits of safety belts have failed to convince the majority of vehicle occupants to use their safety belts.
- 4) Motor vehicle crashes are the single most frequently mentioned cause of injury responded to by EMS ambulances. The proposed donation in lieu of a fine would help to defray the cost of these services.

Background

Nationally, motor vehicle crashes are the leading cause of death to persons between one and 35 years of age. For teenagers, car crash fatalities out-number the next five causes of death combined. Over the past decade more than 450,000 persons have died on America's highways. Every year over 40,000 persons are killed in automobile accidents in the United States, and more than 300,000 people suffer moderate

to severe and critical injuries. Many of the victims are young people who will never work again for the rest of their lives.

In Alaska, from 1980 through 1985, unintentional injuries (accidents) have been the leading cause of death for all ages. Motor vehicle crashes and drowning have been the chief causes of these deaths. In 1986 there were 101 deaths and more than 5,000 Alaskans were injured as a result of motor vehicle crashes in this state.

According to the Highway Safety Planning Agency, property damage from motor vehicle crashes amounted to over \$40,000,000 in 1986. This does not include bodily injury claims payments for private passenger non-fleet automobile liability in Alaska which totaled over six million dollars in 1983 and was over eight million in 1984. These amounts do not include paid losses from other third party payers, such as Medicare, Medicaid, General Relief Medical, Indian Health Service or Workers Compensation. Clearly, in addition to the unacceptable losses from premature death and disabilities, motor vehicle crashes create a significant financial burden which is shared by all citizens.

Worldwide, almost 40 countries have mandated safety belt use. In Great Britain seat belt use rose from about 40% to 90-95% with the passage of a mandatory use law. At the same time the number of individuals treated in emergency rooms as the result of motor vehicle crashes has dropped 15%. There were also 15% to 20% fewer fatalities in the years since the passage of the law.

In Canada, all provinces have enacted mandatory safety belt use laws. The effectiveness of these laws in increasing belt use has been shown to be dependent on the degree to which they are enforced. In provinces where strict enforcement has been practiced belt use has been up to 80%. Deaths due to motor vehicle crashes have declined 11% and injuries 6%, in provinces with mandatory use laws.

In this country, 31 states and the District of Columbia now have mandatory belt use laws. New York was the first state to pass such a law. Safety belt use there is now about 64%. This use rate has resulted in about a 9% drop in motor vehicle crash fatalities.

It is clear that the use of safety belts can reduce the number of deaths and disabilities due to motor vehicle crashes. A mandatory safety belt use law would go far to achieve this goal and complement existing traffic safety

POSITION PAPER/Department of Health & Social Services

legislation regarding liability while not exceeding maximum speed limits, and licensing requirements.

Position

The Department of Health and Social Services strongly supports this bill because it can result in significant decreases in the number of deaths, disabilities and injuries caused by motor vehicle crashes.

Recommended by: Elizabeth Ward, M.N.
Elizabeth Ward, M.N.
Director
Division of Public Health

Date: _____

Approved by: Myra M. Munson
Myra M. Munson
Commissioner
Department of Health and
Social Services

Date: 1/29/89

FISCAL NOTE

REQUEST:

Revision Date: 01/20/90
 Title: "An Act relating to mandatory use of safety devices in motor vehicles."
 Sponsor: Cotton, Limer, Zawacki, et. al.
 Requestor: _____

Agency Affected: Department of Health & Social Services
 BRU: State Health Services
 Components: Emergency Medical Services

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-
CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-
REVENUE	-0-	-0-	-0-	-0-	-0-	-0-

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS : (Attach a separate page if necessary)

The enactment of HB 105 would have no direct fiscal impact on the Department of Health & Social Services.

Prepared by: Elizabeth Ward, Director
 Division: Public Health

Phone: 465-3090
 Date: _____

Approved by Commissioner: Myra M. Hunsberger
 Agency: Department of Health and Social Services

Date: 1/29/89

Distribution (by preparer):

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

HOUSE COMMITTEE REPORT

2/17

(7)

Date Referred: February 1, 1989

FURTHER REFERRALS:

Rules

Date of Committee Action: 2/16/89

The JUDICIARY Committee recommends that:

NB 105

HOUSE BILL NO. 105 [MANDATORY SEATBELTS]
"An Act relating to mandatory use of safety devices in motor vehicles."

be replaced with CS HB 105 - Judiciary the same title
 a new title

have attached amendment(s)

- do pass
- do not pass
- no recommendation
- individual recommendations
- additional referral to the _____ Committee

ADOPTS: _____ letter of intent

ATTACHES NEW FISCAL NOTE(S):

- fiscal impact
- zero fiscal note
- zero with analysis

APPROVES PREVIOUS:

- fiscal note(s) published: _____
- zero fiscal notes(s) published:
Pub Safety 2/1/89 w/analysis

SIGNING DO PASS:

[Signature] GRUENBERG
[Signature] M. DAVIS
[Signature] ELLIS
[Signature] MARTIN

SIGNING OTHER THAN DO PASS:

(Do Not Pass, No Recommendation, Amend)
[Signature] BOLL
[Signature] MILLER
[Signature] DAVIDSON

[Signature]
 CO-Chairman's signature

A M E N D M E N T

#3

OFFERED IN THE HOUSE

BY GRUENBERG

TO: HB 105

Page 1, line 13

Strike "provided and"

Comment: surplusage

A M E N D M E N T

#4

OFFERED IN THE HOUSE

BY GRUENBERG

TO: HB 105

Page 1, line 29

Strike "acting in the course of employment"

Comment: a person could be delivering newspapers or letters
voluntarily

A M E N D M E N T

OFFERED IN THE HOUSE

BY GRUENBERG

TO: HB 105

Page 1, line 28, after "in":

Insert "a school bus or"

Version offered

2/15/89

6-0602Ac
Ford

A M E N D M E N T #1B

OFFERED IN THE HOUSE

BY HOFFMAN

TO: HB 105

Page 2, lines 16 - 22:

Delete all material.

Insert new bill sections to read:

"* Sec. 2. AS 28.05.096 is amended to read:

Sec. 28.05.096." EXEMPTIONS AND ALTERNATIVE SAFETY DEVICES. (a)
The commissioner of public safety may adopt regulations to exempt a
person [CHILD] or a class of persons [CHILDREN] from the requirements
of AS 28.05.095 if the commissioner determines that the use of a
safety belt or child safety device is impractical because of physical
or medical conditions of the person or class of persons [CHILD].

(b) The commissioner of public safety shall specify alternative
means of protection for children exempted under (a) of this section.

* Sec. 3. AS 28.05.096 is amended by adding a new subsection to read:

(c) A municipality or established village that is not connected
by land highway to the state highway system established under AS 19.-
10.020 may exempt itself from the provisions of AS 28.05.095 or vote
to remove the exemption as provided under AS 28.05.102. An exemption
or removal of an exemption takes effect 30 days after certification of
the results of the election. In this subsection, "established vil-
lage" has the meaning given in AS 04.21.080(b)."

Renumber the following bill section accordingly.

Page 3, after line 21:

Insert a new bill section to read:

"* Sec. 5. AS 28.05 is amended by adding a new section to article 2 to read:

Sec. 28.05.102. SAFETY DEVICE ELECTION PROCEDURE. (a) Whenever a number of registered voters equal to at least 35 percent of the number of votes cast at the last regular municipal election petition the local governing body to do so, the local governing body of a municipality shall place upon a separate ballot at the next regular election or at a special election the text of AS 28.05.095 and the following question: "Shall the use of seat belts or child safety devices be required under AS 28.05.095?". The local governing body shall conduct the election under the election ordinance of the municipality.

(b) Whenever 35 percent of the registered voters residing within an established village petition the lieutenant governor to do so, the lieutenant governor shall place upon a separate ballot at a special election the text of AS 28.05.095 and the following question: "Shall the use of seat belts or child safety devices be required under AS 28.05.095?". The lieutenant governor shall conduct the election in the general manner prescribed by AS 15 (Alaska Election Code).

(c) An election under (a) or (b) of this section may not be conducted more than once every 12 months.

(d) In this section, "established village" has the meaning given

in AS 04.21.080(b)."

A M E N D M E N T

OFFERED IN THE HOUSE

BY GRUENBERG

TO: HB 105

Page 1, line 28, after "in":

Insert "a school bus or"

PB87-917002



NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C. 20594

SAFETY STUDY

CRASHWORTHINESS OF LARGE
POSTSTANDARD SCHOOLBUSES

EXCERPTS ONLY

NTSB/SS-87/01

UNITED STATES GOVERNMENT



CONCLUSIONS

1. Poststandard large schoolbuses are an extremely safe form of transportation compared to other modes of transportation.
2. The Federal schoolbus safety standards, providing for "compartmentalization," worked well in the Safety Board-investigated crashes to protect schoolbus passengers from injury in all types of accidents. Ninety percent of the unrestrained passengers in the accidents in the Safety Board's schoolbus study received only minor or no injuries.
3. If schoolbus passengers were injured, they were most likely to receive minor injuries. Moderate injuries were rare, and serious to critical injuries extremely rare. Intrusion was responsible for the most of the moderate or greater injuries.
4. Intrusion was responsible for all but 2 of the 13 schoolbus passenger fatalities in this study and for all of the schoolbus driver fatalities.
5. Schoolbus occupant deaths and the serious or worse injuries sustained by survivors in the study were, for the most part, attributable to the occupants' seating position being in direct line with the crash forces. It is unlikely that the availability of any type of restraint would have improved their injury outcome.
6. Schoolbus accidents involving collisions with a heavy truck were the most serious injury-producing crashes in the study in terms of schoolbus passenger outcome. Accidents involving passenger cars were the least harmful to schoolbus passengers.
7. Ejection was extremely rare among the unrestrained schoolbus passengers in the study. Approximately 15 of the 1,119 unrestrained passengers were either partially or totally ejected. Since the accidents in the study represent the more severe end of the schoolbus accident scale, and include a disproportionate number of rollovers, it is reasonable to believe that ejection is extremely rare in the overall population of all schoolbus crashes.
8. The post-1977 Federal schoolbus standards requiring increased side panel and roof strength appear to have been successful in eliminating the structural failures responsible for many of the ejections which occurred in prestandard schoolbuses.
9. Schoolbus maintenance access panels failed to withstand crash forces in five cases, which included moderate as well as severe accidents, and came free, becoming a source of injury for passengers.
10. Schoolbus seat cushions were unsecured following 16 crashes; in some cases, schoolbus passengers were injured by contact with the loose cushions or the exposed seat frame.

11. Rollover accidents in the Safety Board's study were associated with higher levels of schoolbus passenger injuries than nonrollovers but to a much smaller degree than anticipated; nearly 86 percent of all the schoolbus passengers involved in rollover crashes were either uninjured or received only minor injuries.
12. The slight increase in the schoolbus passenger injury severity associated with rollover accidents in the study was due primarily to one type of rollover accident: rollover preceded by collision. The initial impact, not the rollover, was responsible for the higher injury levels.
13. Analysis which aggregates rollover accidents, regardless of severity or prior collision, may inflate the importance of the rollover itself as the injury-producing event and mask the importance of other events during the accident, i.e., crush from the initial impact, initial impact crash forces, and lateral rotation.
14. Lap belt use probably would have made no change in the total number of schoolbus passengers who died in the crashes investigated for this study (possibly one more death would have resulted).
15. Lap belt use probably would have made no change in the number of surviving schoolbus passengers with severe or worse injuries.
16. At best, lap belt use probably would have reduced somewhat the injuries of less than a third (8) of the 24 surviving schoolbus passengers with serious injuries in the study and made no change for the majority (12). At worst, it might have increased the injury to almost as many passengers with serious injuries as it improved.
17. Lap belt use probably would have worsened the outcome for one-fifth of the 58 schoolbus passengers with moderate injuries. The Safety Board cannot determine the effect belt use would have made on the remainder of the passengers with moderate injuries.
18. The Safety Board cannot estimate the probable net effect of lap belt use on the unrestrained schoolbus passengers in the study who were uninjured or received only minor injuries; it is unlikely that it would have reduced the minor injuries.
19. Almost half of the schoolbus drivers in the study, although required to be restrained when the bus is in motion, were not wearing their lap belts.
20. The lap belted schoolbus drivers did not fare better, overall, than the unrestrained drivers, an outcome probably attributable to the nature and severity of the crashes involving lap belted drivers.

S4.1.1.3.2 Convertibles and open-body type vehicles shall at each designated seating position have a Type 1 or Type 2 seatbelt assembly that conforms to Standard No. 209 and to S7.1 and S7.2 of this standard, and at each front outboard designated seating position have a seatbelt warning system that conforms to S7.3.

S4.1.2 [Passenger cars manufactured on or after September 1, 1973, and before September 1, 1986. Each passenger car manufactured on or after September 1, 1973, and before September 1, 1986, shall meet the requirements of S4.1.2.1, S4.1.2.2, or S4.1.2.3. A protection system that meets the requirements of S4.1.2.1 or S4.1.2.2 may be installed at one or more designated seating positions of a vehicle that otherwise meets the requirements of S4.1.2.3. (49 F.R. 28962—July 17, 1984; effective 8/16/84)]

S4.1.2.1 First option—frontal/angular automatic protection system. The vehicle shall—

(a) At each front designated seating position meet the frontal crash protection requirements of S5.1 by means that require no action by vehicle occupants;

(b) At each [front center] designated seating position have a Type 1 or Type 2 seat belt assembly that conforms to Standard No. 209 and to S7.1 and S7.2; and

(c) Either—

(1) Meet the lateral crash protection requirements of S5.2 and the rollover crash protection requirements of S5.3 by means that require no action by vehicle occupants; or

(2) At each front [outboard] designated seating position have a Type 1 or Type 2 seat belt assembly that conforms to Standard No. 209 and to S7.1 through S7.3, and that meets the requirements of S5.1 with front test dummies as required by S5.1, restrained by the Type 1 or Type 2 seat belt assembly (or the pelvic portion of any Type 2 seat belt assembly which has a detachable upper torso belt) in addition to the means that require no action by the vehicle occupant.

S4.1.2.2 Second option—head-on [automatic] protection system. The vehicle shall—

(a) At each designated seating position have a Type 1 seat belt assembly or a Type 2 seat belt assembly with a detachable upper torso portion that conforms to S7.1 and S7.2 of this standard.

(b) At each front [outboard] designated seating position, meet the frontal crash protection re-

quirements of S5.1, in a perpendicular impact, by means that require no action by vehicle occupants;

(c) At each front [outboard] designated seating position, meet the frontal crash protection requirements of S5.1, in a perpendicular impact, with a test device restrained by a Type 1 seatbelt assembly; and

(d) At each front outboard designated seating position, have a seatbelt warning system that conforms to S7.3.

S4.1.2.3 Third option—lap and shoulder belt protection system with belt warning.

S4.1.2.3.1 Except for convertibles and open-body vehicles, the vehicle shall—

(a) At each front outboard designated seating position have a seat belt assembly that conforms to S7.1 and S7.2 of this standard, and a seat belt warning system that conforms to S7.3. The belt assembly shall be either a Type 2 seat belt assembly with a nondetachable shoulder belt that conforms to Standard No. 209 (§ 571.209), or a Type 1 seat belt assembly such that with a test device restrained by the assembly the vehicle meets the frontal crash protection requirements of S5.1 in a perpendicular impact.

(b) At any center front designated seating position, have a Type 1 or Type 2 seat belt assembly that conforms to Standard No. 209 (§ 571.209) and to S7.1 and S7.2 of this standard, and a seat belt warning system that conforms to S7.3; and

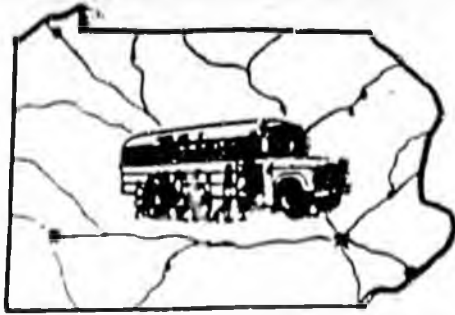
(c) At each other designated seating position, have a Type 1 or Type 2 seat belt assembly that conforms to Standard No. 209 (§ 571.209) and S7.1 and S7.2 of this standard.

S4.1.2.3.2 Convertibles and open-body type vehicles shall at each designated seating position have a Type 1 or Type 2 seat belt assembly that conforms to Standard No. 209 (§ 571.209) and to S7.1 and S7.2 of this standard, and at each front designated seating position have a seat belt warning system that conforms to S7.3.

S4.1.3 [Passenger cars manufactured on or after September 1, 1986, and before September 1, 1989.

S4.1.3.1 Passenger cars manufactured on or after September 1, 1986, and before September 1, 1987.

S4.1.3.1.1 Subject to S4.1.3.1.2 and S4.1.3.4, each passenger car manufactured on or after September 1, 1986, and before September 1, 1987, shall comply with the requirements of S4.1.2.1, S4.1.2.2 or S4.1.2.3.



THE YELLOW NUGGET

PUPIL TRANSPORTATION ASSOCIATION OF PENNSYLVANIA, INC.

VOLUME 10, NUMBER 1

NEWSLETTER

SUMMER 1984

President
William Mathers
Upper Moreland Twp.
School District
Terwood Road
Willow Grove, PA 19090

President-Elect
Leonard Gerhart
Northern Lebanon Schools
Box 182
Fredericksburg, PA 17028

Secretary
Linda P. Hedrick
Unionville-Chadds Ford
School District
Unionville, PA 19375

Immediate Past President
Carroll J. Miller
Rohrer Bus Service, Inc.
RD #3, Box 1062
Duncannon, PA 17020

Executive Director
Marshall L. Gemberling
P.O. Box 7009
State College, PA
16803-7009

Science Fair V/Inner

SIXTH GRADER STUDIES SEAT BELT ISSUE

The controversial subject of seat belts for school buses is touching all ages and segments of the population, not just professional school transportation personnel. Kim Dahlin, a sixth grade student at the Susquenita Elementary School, Susquenita School District, Dauphin county, took this issue as her subject for the Elementary Science Fair this spring and was declared first place winner.

Kim's results--that seat belts should not be used on school buses--represent a change of opinion in her sampling of 281 people ages 6 to 56 years and over and are based largely on facts obtained through cooperation with the Pennsylvania State Police and the Rohrer Bus Service, Duncannon.

The idea formed when Kim realized that she and her family, Mr. and Mrs. Steve Dahlin and brother Troy, always "buckle up" when they get in the family car, but no one on a school bus even has an opportunity to do so. She observed that it is now law to provide and use a safety device for children 4 and under, so she felt the lack of seat belts on school buses indicated a lack of concern for the safety of older children.

Kim thought there should be seat belts on school buses and so did 173 of the 281 people who responded to her questionnaire.

Kim began with the hypothesis: "to prove that seat belts should be put in school buses for the safety of us kids: 'Seat belts save lives' and injuries."

To gather information she prepared and distributed 500 questionnaires to people from 6 to 56 years and over, including school bus drivers; obtained printed information from the Pennsylvania State Police and the Pennsylvania Dept. of Highway Safety; met with Carroll Miller, manager, school bus operations, Rohrer Bus Service.

Of the 281 completed and returned questionnaires, 173 people thought seat belts should be put on school buses. Their reasons were:

- 144--to prevent flying around which causes injuries
- 35--to keep kids in their seats so they don't bother the bus driver
- 9--to limit number of kids to one seat or no reason given

But 108 people thought seat belts should not be on school buses, and their reasons were:

- 20--children wouldn't listen and wear seat belts
- 19--children could not get out of the bus fast enough in emergencies
- 12--with three children in a seat, seat belts wouldn't work (too crowded)
- 44--no reason listed

Ten school bus drivers also listed their reasons for opposing the installation of seat belts:

- Young children cannot work them; also too loose
- Used as a weapon
- Wouldn't keep them on
- With three high school students on a seat, seat belts would not work
- Everyone would have to unbuckle to let the person on the inside of the seat out
- Mandalism--torn, cut, slashed, jammed, muddy

Specific information swayed Kim away from her original theory. From State Police Corporal Ken Mettler she learned that in this state from 1974-84 the accidents that resulted in death of students have all happened outside the school bus. The number of school bus accidents has increased, but the number of students either injured or killed has dropped.

From the Rohrer Bus Service she learned:

- Because seats are too close together, a child wearing a seat belt will take the full impact of the collision on the head, face, and neck.
- Lap seat belts worn on young children can cause crushed kidneys, ruptured bladders, and other internal injuries when involved in an accident.
- Buses that have tried seat belts have had more injuries from seat belts being used as weapons.
- Young children are sometimes unable to open seat belts and could be trapped in an emergency. In cases of bus roll-overs, children could be hanging upside down and unable to unfasten belts to get out of the bus.
- Bus seats have had extra padding added so there are no metal parts to injure children.
- Bus seats have been moved closer to compartmentalize for protection.
- New window and door designs keep children from being thrown out of the bus.
- The heavy steel frame under the bus floor provides tremendous protection. Installing seat belts on the floor would weaken the floor structure.
- Bus bodies will absorb a lot of the shock during an accident.

Kim concluded her project by saying, "In my hypothesis I tried to prove that seat belts should be put on school buses to save lives and injuries. What I found out is that I was wrong and seat belts would cause more injuries than without them. Seat belts are not needed in school buses. What is needed is an adult on each bus to control the children so the bus driver can concentrate on the road and safe driving."

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36

Highway Patrol as reasons why the device should not be employed."

SUMMARY

The information provided can best be summed up in a listing of pros and cons regarding the use of seat belts in school buses. The listing includes information derived from the listed study, conversations with American Transportation officials, magazine articles, legislators and everyday citizens.

Pros

Cons

Riders are better off restrained than unrestrained if the bus rolls over, crashes into another object, or stops suddenly.

The danger of a small child being trapped by seat belts in a crashed ehicle is greater with seat belts.

Because law requires seat belts in cars, and it is a proven fact they decrease the chances of death in case of impact, children who ride in school buses should also be required to wear seat belts so they can get into the habit of buckling up and we should make every effort to decrease the death percentage.

Seat belts would be used as weapons, thus an increase in accidental injury rate.

Seat belts would require an assistant to the driver, a supervisor, thereby increasing cost.

Monitors of expensive equipment would be required to ensure that students wore belts and were properly belted.

Seat belts would be vandalized, thus a great replacement expense. There is significant cost to installing seat belts plus a 60% loss in the number of passengers each bus can carry.



STATE OF ARKANSAS
LEGISLATIVE COUNCIL
315 STATE CAPITOL
LITTLE ROCK
72201

V

FEASIBILITY OF REQUIRING
SCHOOL DISTRICTS TO INSTALL
SEAT BELTS ON SCHOOL BUSES

A REPORT PUBLISHED
BY
THE BUREAU OF LEGISLATIVE RESEARCH

Staff Report: 84-19

Date: September 20, 1984

JOINT INTERIM COMMITTEE ON
PUBLIC TRANSPORTATION
OF THE
ARKANSAS GENERAL ASSEMBLY

1983-84 Biennium

Senate Members

Jim Wood, Chairman
Bill Henley, Vice Chairman
Jack Gibson
Travis Miles
Kent Ingram
Bill Walters
Neely Cassady

House Members

B. G. Hendrix, Chairman
J. W. Ramsey, Vice Chairman
James Holland
Doug Wood
W. R. Rice
Johnny W. Rapert
Greg Wilson
Jerry Hinshaw
Bill D. Porter
Judy Petty
Peggy Long Hartness
Ted E. Mullenix
M. W. Dugger
Owen Miller
Lonnie P. Clark
Veo Easley
David Matthews
Bob Teague
John W. Parkerson
Rodger Langster

Prepared by

THE BUREAU OF LEGISLATIVE RESEARCH
315 State Capitol
Little Rock, Arkansas 72201

1
2
3 SCOPE OF STUDY

4 On March 25, 1983 a Jonesboro School District bus was involved in a
5 traffic accident near Newport, Arkansas. The teacher-driver, four (4) other
6 teachers and four (4) students were killed. This tragedy heightened the
7 existing concern for school bus safety held by parents, interested citizens,
8 school officials and the legislators. The installation of seat belts on
9 school buses has been debated as a major increased safety factor for the past
10 few years. This Staff Report will examine the feasibility and ramifications
11 of installing seat belts on school buses. A major source of data was
12 obtained from the Los Angeles (1983) seat belt study which compiled a large
13 number of reports and articles as well as comments from various associations/
14 organizations having an interest in the seat belt study. In addition, the
15 American Transportation Corporation of Conway, Arkansas - Milt Honea,
16 President and Jerry Williams, Vice President of Marketing - provided con-
siderable input.

17 Two study proposals have been referred to the Joint Interim Committee on
18 Public Transportation for study of the school bus safety issue - Interim
19 Study Proposal 83-4 by Representative George and Interim Study Proposal 83-27
20 (House Resolution 84) by Representative Foster. Interim Study Proposal 83-4
21 by Representative Lloyd George requires the joint interim committee to study
22 "the overall safety of school buses of the type used in Arkansas for the pur-
23 pose of determining practical structural changes that could be made in school
24 buses to make them safer for passengers and operators." Interim Study
25 Proposal 83-27 by Representative Foster requests that a study be made "of the
26 feasibility of legislation requiring school buses in the State to be equipped
27 with seat belts, to provide protection to school children from death or
28 injury in cases where school buses are involved in accidents."
29

30 BACKGROUND

31 Federal Requirements on Seat Belts in School Buses

32 The National Highway Traffic Administration (NHTSA) is the federal agency
33 responsible for establishing minimum federal standards for all motor vehicles.
34 Their responsibility includes the safety and crashworthiness of all motor
35 vehicles, including school buses.
36

1 The NHTSA does not require seat belts in school buses. They have been
2 petitioned to require seat belts in school buses and to require the installa-
3 tion of seat belt anchorages to simplify placement of seat belts by local
4 jurisdictions; however, they have denied the petitions stating that

5 "currently mandated occupant protections in school buses
6 provide an adequate level of safety protection and that
7 seat belts would not raise the level of protection for
8 the occupants unless states and local jurisdictions were
9 willing to take steps to ensure that the seat belts were
10 used."

11 NHTS Administration Federal Register, Vol. 48 #201, Oct., 1983.

12 The Agency noted that any jurisdiction wishing to buy and install seat belts
13 in school buses can do so.

14 Federal Standards

15 According to American Transportation (AmTran), a manufacturer of buses,
16 federal motor vehicle standards must be adhered to for all bus-type vehicles.
17 Effective April 1, 1977, however, four additional standards were added that
18 increased the safety of school buses significantly.

19 1. Standard #220 - School Bus Rollover Protection

20 This standard specifies performance requirements for the
21 structural integrity of the passenger compartment of school
22 buses when subjected to forces that can be encountered in
23 rollovers. The standard requires that upon the application
24 of vertical downward force to the bus roof equal to 1-1/2
25 times the vehicles unloaded weight, the vehicle roof shall
26 not crush more than 5-1/2 inches, and the emergency exits
27 shall be capable of being opened with the weight applied and
28 after its release. This, along with each standard is tested,
29 and if a bus chosen at random is not in compliance, all buses
30 manufactured with the model text can be recalled.

31 2. Standard No. 221 - School Bus Body Joint Strength

32 This standard addresses the problem of exposure of school bus
33 passengers to sharp metal edges when during an accident body panels
34 become separated from the structural components to which they have
35 been fastened. It seeks to reduce the likelihood of lacerations by
36

1 requiring that body joints on school buses have a tensile strength
2 equal to 60 percent of the tensile strength of the weakest joined
3 body panels.
4

5 3. Standard No. 222 - School Bus Passenger Seating and Crash Protection

6 This standard specifies seating, restraining barrier, and impact
7 zone requirements for school buses. This standard relies on
8 compartmentalization between well-padded and well-constructed seats
9 to provide occupant protection on school buses.

10 4. Standard No. 301 - Fuel System Integrity

11 The original standard specifies requirements for the integrity and
12 security of fuel tanks, fuel tank filler pipes and fuel tank connec-
13 tions to minimize fire hazard as a result of collision in all
14 passenger cars manufactured after January 1, 1968. This standard
15 was amended to substantially upgrade the performance requirements.
16 The effective date is September 1, 1975, with additional require-
17 ments. The effective date is September 1, 1976, and September 1,
18 1977. The standard now covers all vehicles under 10,000 pounds
19 (except motorcycles) and requires preservation of fuel system
20 integrity by limiting fuel spillage incidental to severe front, rear
21 and lateral crash tests.
22

23 The Compartmentalization Concept (Standard 222) is considered by the De-
24 partment of Transportation members of the National Association of Pupil
25 Transportation Services and officials of AmTran to be the best solution for
26 increased pupil safety on school buses. According to a publication by AmTran,
27 entitled "The 5 most asked questions about School Buses" in 1983, comparten-
28 talization is the best solution because of the following features:

- 29 1. Compartmentalization is more manageable. The protective
30 surfaces exist in place without depending on any
31 action by the children or any extra special supervision
32 by the drivers. Seat belts require discipline and
supervision to keep them clean, unraveled and in use.
- 33 2. Compartmentalization works equally well for 1, 2 or 3
34 students per seat.

35 Today's 39" wide standard seats may contain three small
36 children or two large ones or any combination in between.

1
2 Arranging seat belts to properly handle any combination
3 is difficult, if not impossible; the best known solution
4 with seat belts is to restrict each seat to two students
5 and two belts, which has the disadvantage of sharply
6 reducing the carrying capacity of bus fleets.

- 7
8
9
10
11
12 3. Compartmentalization works whether students have fully
13 developed abdominal areas or not.

14
15 Conventional seat belts, which are lap restraints only,
16 are not suitable for small children whose abdominal area
17 and bone structure are not adequately developed to take
18 the force of a lap belt alone. They need the help of
19 chest harnesses also, which adds to the complexity of a
20 proper seat belt solution.

- 21
22 4. Compartmentalization, once it has done its energy absorbing
23 job, leaves the student free to escape the bus. Seat belts
24 could leave students strapped in, upside down, perhaps
25 unconscious, in burning or flooding buses.

- 26 5. Compartmentalization is most affordable.

27 Although not a part of the DOT reasoning, this is a factor
28 to be considered. In evaluating the cost of seat belts
29 alone, one should include the cost of retractors and chest
30 restraints, also, since those appear needed. Even more
31 important is the probability that a seat belt solution
32 should lead to two students per seat and greater spacing
33 between seats, thereby requiring more buses for the same
34 student load.

35 Seat Belt Usage by School Districts

36 There are two districts in the United States which have installed seat
belts on school buses - the Greenburgh Central School District #7 in New York
and the Hartland Elementary School District in Vermont.

According to data provided by the Greenburgh Central School District #7
which made a district decision to use seat belts, "No problems have arisen due
to the installation of seat belts. Salvatore Corda, the Assistant Business
Superintendent stated ". . . they have never had an instance where a child
has been struck with a seat belt." Based on statistics provided, they are
used by 80 percent of the pupils and repair costs have not been a significant
factor. Seat belts are installed on the entire fleet of 60 buses and 20
buses. The Greenburgh District is located approximately 25 miles north of
New York City, in a middle class area and serves a mixed ethnic population.
The district serves kindergarten through 12th grade pupils and transports

1 3,200 students (2,500 public and 700 private school students) approximately
2 540,000 miles per school year. However, staff contacted another source to
3 seek an unbiased opinion. According to the staff of Michael Joyce, Director
4 of Transportation from Long Beach City school who has visited the New York
5 District, use is not that high and repair problems are significant.

6 The Hartland Elementary School District in Vermont has purchased one new
7 school bus with seat belts in the 1983-84 school year.

9 The Cost of Installing Seat Belts

10 According to American Transportation, there would be no problems manufac-
11 turing school buses with seat belts; however, there would be an increase in
12 the cost of the bus. Presently, a new bus (with chassis which is purchased
13 by buyer) is \$21,000. The installation of the seat belts would add an addi-
14 tional \$2,000 - \$4,000 for a total cost of \$23,000 - \$25,000 for a new school
15 bus. The seating capacity with the installation of seat belts would be reduced
16 by 60%.

18 Review of Research Studies on Seat Belts in School Buses

19 The majority of research studies on seat belts were found to be undertaken
20 in the 1960s and 1970s. No new studies were found other than the study report
21 done by California which referred to the older studies listed. A synopsis
22 is given of each study including the conclusion and/or recommendation.

23
24 1. The National Highway Traffic Safety Administration (NHTSA) in
25 1968-1974 conducted extensive research through crash sled tests. These crash
26 tests concluded that passengers secured to bench seats in a bus by lap belts
27 suffered the most severe injuries in the event of upset or collision. This
28 was because the height and construction of the bench seats produced hazards to
29 the head and upper portions of passengers seated behind.

30
31 2. The American Association for Automotive Medicine in 1975 advised
32 against securing young children solely by lap belts in either passenger autos
33 or buses because the abdominal section of young children is not sufficiently
34 developed to withstand the stress caused by lap belts in event of collision.

35
36 3. The Virginia Polytechnic Institute and State in 1974, conducted addi-
tional studies of seat belts in school buses. Their findings questioned the

1
2 compliance of children using seat belts and the ability of drivers to enforce
3 seat belt usage. In addition, the legal and educational barriers to seat belt
4 installation were considered factors that would make seat belts impractical for
5 school buses.

6 4. The National Motor Vehicle Research Foundation in 1972 conducted
7 200 crash tests with seat belts and concluded that at least 40 inches of
8 unobstructed area must exist in front of the belted passenger in order to pro-
9 tect the passenger from frontal impact. The greatest danger to a seat belted
10 passenger is impact injury to the head. Seats in buses are typically spaced
11 22 to 28 inches apart.

12 5. The National Association of Independent Insurers in 1974 questioned
13 the legal liabilities created by buses equipped with seat belts. Their concern
14 is the enforcement in seat belt usage, and anchorages for seat belts as
15 obstructions to children walking in the bus during boarding and disembarking.
16

17 6. The National School Transportation Association in 1976-77 computed the
18 cost of safety belt systems in school buses. Their conclusions were that the
19 economics of seat belts due to hazard, enforcement, vandalism and additional
20 factors were not cost effective. The net result would be loss of bus services
21 with additional children placed on the streets to find their own way to school.
22

23 7. The California Highway Patrol commissioned the Southwest Research
24 Institute in 1976 to study seat belts in school buses and concluded:

- 25 "a. The interior of an auto is not similar to that of a
26 bus in that appurtenances such as steering wheels,
27 dashboards, door handles, etc., are not present
in bus passenger compartments.
- 28 b. Should a major accident occur in an auto, it is
29 relatively easy to release seat belts and remove
30 passengers from outside the vehicle. Belted passen-
31 gers in a much larger bus could not be easily removed.
- 32 c. Bus drivers or aides would be tasked with insuring
33 that belts are fastened, as unsecured belts would
34 result in a tripping hazard for other students. Given
a bus load of 65 children, the amount of time required
to check belts at each stop would be prohibitive.
- 35 d. Factors such as vandalism to belts and the possible
36 use of belts as weapons were also cited by the

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36

Highway Patrol as reasons why the device should not be employed."

SUMMARY

The information provided can best be summed up in a listing of pros and cons regarding the use of seat belts in school buses. The listing includes information derived from the listed study, conversations with American Transportation officials, magazine articles, legislators and everyday citizens.

Pros

Cons

Riders are better off restrained than unrestrained if the bus rolls over, crashes into another object, or stops suddenly.

The danger of a small child being trapped by seat belts in a crashed vehicle is greater with seat belts.

Because law requires seat belts in cars, and it is a proven fact they decrease the chances of death in case of impact, children who ride in school buses should also be required to wear seat belts so they can get into the habit of buckling up and we should make every effort to decrease the death percentage.

Seat belts would be used as weapons, thus an increase in accidental injury rate.

Seat belts would require an assistant to the driver, a supervisor, thereby increasing cost.

Monitors of expensive equipment would be required to ensure that students wore belts and were properly belted.

Seat belts would be vandalized, thus a great replacement expense. There is significant cost to installing seat belts plus a 60% loss in the number of passengers each bus can carry.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36

Seat belts do not provide total protection as heads, faces, necks and upper torso are permitted to rotate, thus causing possible serious injuries.

Conventional seat belts are not suitable for small children whose abdominal area and bone structure are not adequately developed to take the force of a lap belt alone.

Liability insurance for the use of seat belts due to the possible hazards of the safety devices, in itself, could be excessive.

CONCLUSION

According to data provided by the Public Safety Administration, AmTran and other various articles, school transportation is the safest form of transportation in existence. Twenty-one million children are transported 3 billion miles in the U. S. each year on approximately 380,000 buses.

In 1982, the last year for which data is available, the rate of fatalities in school bus accidents per hundred million vehicle miles was 0.29 (8 deaths). American Transportation Company, Inc., Safety Legislation Concerning School Buses, prepared for the Joint Interim Committee on Public Transportation, May, 1984.

It appears that based on the costs, the lack of data indicating a great fatality decline with the installation of seat belts, the possible dangers which could arise to the installation of the seat belts themselves, the outstanding safety records of school buses in general, the issue of seat belts in school buses could be left as a decision to be made by individual school districts and should not be mandated by the legislature.

Legislators could consider stiffer penalties to enforce the existing law that prohibits motorists from passing school buses when they are stopped.

1 Most school bus fatalities have occurred at the loading and unloading point.
2 National School Bus Report, March, 1984. In addition, a large percentage
3 of these fatalities were caused by the driver running over the child passing
4 in front of the bus because he/she could not see that the child had stopped
5 in front of the bus. Arkansas could consider a structural requirement to
6 cut down the possibilities of incidents such as this occurring. However, it is
7 probable that future Federal requirements will eliminate this problem on a
8 national level. Without a doubt, improved driver training programs, stiffer
9 driver requirements, as well as increased maintenance inspections are needed.
10 The major factor contributing to the March 25, 1983 school bus accident near
11 Newport, Arkansas was attributed to "human error."
12

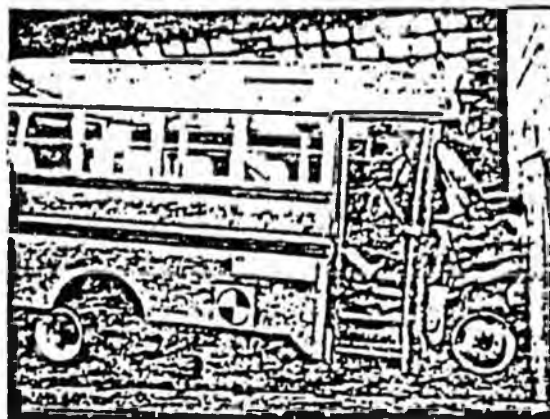
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36

SUMMARY OF CANADIAN RESEARCH STUDY ON
SCHOOL BUS SEATBELTS

COMPLETE TEXT ON FILE IN COMMITTEE MASTER FILE

MOTOR VEHICLE ACCIDENT RESEARCH: WHAT INCREASES SAFETY DURING FRONTAL COLLISIONS?

ATT:
MORRIS
ADAMS.



School bus during collision with barrier.



1. Belted dummy before test.
2. Belted dummy after test (note head contact with seat back).
3. Unbelted dummy before test.
4. Unbelted dummy after test.

(Photos courtesy Transport Canada)

MOTOR VEHICLE ACCIDENT RESEARCH: WHAT INCREASES SAFETY DURING FRONTAL COLLISIONS?

The next time someone asks you what makes Canadians different from Americans, you can reply that approximately 80 percent of us live in provinces that require us to wear seat belts in motor vehicles, while until very recently, nobody living in the United States has had to wear them (the State of New York has just passed legislation requiring their use). Furthermore, other measures, such as the time at which each country required padded seatbacks in their school buses, also vary.

These differences mean that Canadian safety regulations cannot automatically be based on American research into the causes and prevention of injuries sustained during motor vehicle accidents: injuries are often of a different nature in American accidents, during which unrestrained occupants are subject to very different movements and interactions than are occupants wearing seat belts in Canadian accidents. Consequently, before improvements to safety features in Canadian cars can be considered, Canadian researchers must document just how seat belts and other safety provisions in our vehicles affect the types of injuries that we are most likely to sustain.

At the federal level, it is Transport Canada that sponsors the majority of this type of research. Although some of this work is carried out by the department itself at its Motor Vehicle Test Centre in Blainville, Québec, a large portion is contracted through DSS' Scientific and Professional Services to research groups in the private sector.

The contracts tend to fall into two main types; those related to specific safety features and their effect on improving road safety, and those that survey usage patterns to see whether and how Canadians actually take advantage of the features that now exist, such as seat belts and children's car seats.

Seat belts in school buses — a good idea?

Seat belts have been in small buses (under 4500 kilograms or 10,000 pounds) in the United States since 1977. In 1978, the Canadian Government proposed requiring seat belts in small Canadian school buses as well. However, various interested groups felt further investigation was needed to measure the effect seat belts have on either increasing or decreasing injuries to school bus occupants. Consequently, in 1980, when the balance of the new safety requirements came into effect, the school bus seat belt regulations were excluded, with the proviso that the seat belt issue be re-examined.

In 1984, following the customary search by DSS to ensure that no Canadian firm could at that time supply in sufficient quantity the type of instrumentation necessary to carry out the required research, Transport Canada awarded the American firm, Arvin/Calspan, of Buffalo, New York, a \$78,660 (Canadian) contract to investigate the effects of seat belts on occupants in three sizes of school buses. The company brought its equipment to the Blainville test centre to carry out the tests.

Key components of this equipment were six fifth-percentile, female crash dummies that can be instrumented to measure acceleration forces on the head and chest. The six dummies, three with and three without seat belts, were placed in each of three buses: a large, conventional, 66-passenger bus; a medium, 22-passenger bus, and a 20-passenger converted van. Each bus was attached to a winch-driven cable that is imbedded in a runway leading to a crash barrier. To crash the bus into the barrier wall, the bus was released from the cable at the predetermined speed of 48 kilometres per hour (30 mph). The instruments implanted within the dummies then registered the forces exerted on their heads and chests. Twelve of Calspan's high-speed cameras, eight of which were inside the bus, recorded the entire crash in slow motion.

The results would have surprised most of us, although Transport Canada's safety engineers' hypothesis was verified: head injuries were greater for the dummies that were restrained with seat belts. The films revealed that, by securing the passengers to the seats, the belts caused their bodies to pivot about the hips, causing their heads to strike the backs of the seats in front of them. In the largest bus, both belted and unbelted dummies experienced forces on the head below the limit that is judged to cause serious injury or death. In both smaller buses, the heads of all the restrained dummies experienced forces that were judged to be life threatening or fatal. The heads of all unbelted dummies experienced forces below the limit that is judged to cause serious injury or death.

Transport Canada has reaffirmed that the safety features Canada has incorporated into its school buses — well-padded, high-backed, energy-absorbing seats, spaced at controlled intervals, provide a safe environment without seat belts. The Calspan tests have shown that the typical forces to which unrestrained bus occupants' heads are subjected during frontal collisions are less than would be experienced by a restrained occupant.

Same as U.S. Fed. Motor Vehicle
Safety Standards
DMA



U.S. Department
of Transportation
National Highway
Traffic Safety
Administration

Safety Belt Use and Automobile Insurance:

A Report To Congress 1988

Prepared in Response to the Committee Report
Accompanying the 1988 Department of Transportation
Appropriations Bill as Enacted in the
Continuing Resolution for FY 1988

COMM OFFC	MIRE	ENCL	CLAUDIA	EARL	(8)
CLB	RECEIVED				FWD
NEED BY	FEB 08 1989				DRAFT REPLY
	HIGHWAY SAFETY PLANNING AGENCY				RET
FYI	REF DISC	APPROVE	FILE	ACTION	COPY

EXECUTIVE SUMMARY

This report was prepared in response to the Committee Report accompanying the 1988 Department of Transportation Appropriations Bill as enacted in the continuing resolution for FY 1988. It describes the relationship between rates of safety belt use and automobile insurance prices. Because reliable data on insurance claims costs for 1986 will not be available until 1989, the report presents a reasonably reliable, but preliminary, estimate of the impact of belt use.

The theory supporting a linkage of safety belt use to auto insurance prices involves a chain of causation. Belt use reduces injury incidence and severity. These reductions should decrease insurance claims payments, leading to lower prices for the injury-related portions of auto insurance.

Safety belt use laws now cover more than 80 percent of the population. They have raised use from about 15 percent nationally to about 48 percent in states with belt laws and about 43 percent overall. Most laws apply to front seat occupants of cars and light trucks, motorists who experience roughly 60 percent of all traffic fatalities, 70 percent of severe injuries, and 80 percent of moderate injuries.

In 1987 alone, the 25 percentage point rise in national belt use over 1984 levels saved about 1300 lives and prevented about 16,000 moderate to serious injuries. The resultant reduction in automobile insurance claims was roughly \$1 to \$2.5 billion dollars. Other public and private insurers probably saved another \$0.5 to \$1.25 billion.

A study by the Highway Loss Data Institute, conducted using claims data gathered from numerous insurers, shows that each 10 percentage point increase in belt use cuts injury claims frequency for covered occupants in New York and New Jersey by 1.7 to 3.3 percent. This finding is consistent with several studies of injury incidence, which reveal decreases of 2.5 to 3.7 percent in fatalities among covered occupants and 1.8 to 3.0, or perhaps even 4.0, percent in moderate to serious injuries. The drop in overall fatality and injury rates is roughly 1.2 to 2.4 percent.

Laws in Hawaii, Iowa, and Massachusetts required reductions in the price of auto personal injury insurance coverages, including bodily injury liability, personal injury protection or own-medical payments, and sometimes uninsured motorist liability. The Texas State Board of Insurance also reduced auto injury insurance prices in response to the Texas belt law. The reductions, which generally are supported by claims experience, range from 5 to 12 percent -- a 1.5 to 2.8 percent decrease in the price of personal injury coverage for each 10 percent rise in belt use. The average auto insurance bill in these states dropped approximately 2 to 6 percent, \$9 to \$27 per vehicle insured.

The \$1 to \$2.5 billion insurance claims reductions produced by increased belt use, if spread across all injury coverages, also would cut typical auto insurance bills by 2 to 6 percent. No direct evidence describes the effects of such insurance price reductions on belt use. However, it seems unlikely that price reductions of this size will have much effect. Between 1983 and 1986, auto claims costs per injury rose 17.5 percent per year. The rate of cost increase slowed to 9.7 percent in 1987, perhaps due in part to increased belt use. Unless the rate of cost increase slows substantially, the impacts of rising belt use probably will slow insurance price growth, but not reverse it.

Insurance prices may be more effective as an incentive for safety belt use if the consequences of belt use are stated as actual savings rather than a reduced rate of price increase. By structuring business-related incentives that make the savings explicit, some auto insurers have used their influence and their advertising budgets to promote belt use and traffic safety. Often, they have applied some of the savings resulting from rising belt use to offer a large discount on a relatively low-cost coverage or to provide a not overly costly add-on coverage for free, rather than spreading them thinly across a broad range of coverages. For example, discounts of 10 to 30 percent on injury coverage for vehicle occupants, which most insurers now offer purchasers of cars with automatic crash protection, typically reduce insurance bills by \$5 to \$20.

Transportation Secretary Jim Burnley has challenged the insurance industry "to come up with incentives to encourage car buyers to opt for air bags and other safety devices." In response, USAA, the nation's ninth largest auto insurer, offered to pay a \$300 bonus to policyholders who buy or take long-term leases on cars equipped with optional air bags in 1988, negotiated creation of, and helped finance incentive programs to encourage manufacturers and dealers to market air bags aggressively, and added other incentive coverages. Programs responding to Secretary Burnley's challenge appear to be more promising incentives for increased occupant protection than small reductions in standard injury coverage prices.

TABLE OF CONTENTS
 LIST OF TABLES

EXECUTIVE SUMMARY	1
LIST OF TABLES	iv
LIST OF FIGURES	iv
I. INTRODUCTION	1
THIS REPORT IS DIVIDED INTO FIVE CHAPTERS	1
II. STRUCTURE AND OPERATION OF THE AUTO INSURANCE INDUSTRY	3
MANY AUTO INSURANCE COVERAGES ARE AVAILABLE	3
AUTO INSURANCE PAYS ABOUT TWO-THIRDS OF CRASH-RELATED INJURY COSTS	5
INJURY-RELATED COVERAGES ACCOUNT FOR 40-50 PERCENT OF AUTO INSURANCE PRICES	6
LIABILITY CLAIMS COSTS AND INSURANCE PRICES ARE RISING RAPIDLY	8
INSURANCE PRICE DETERMINATION IS A COMPLEX PROCESS	8
III. IMPACTS OF BELT USE ON INJURY RATES	11
BELT USE HAS A LONG HISTORY	11
RISING BELT USE HAS REDUCED INJURIES AND FATALITIES	14
RISING BELT USE HAS REDUCED INJURY COSTS AND SHOULD REDUCE INSURANCE PRICES	17
IV. STATE AND INSURANCE INDUSTRY ACTIONS	18
FOUR STATES HAVE ORDERED PRICE REDUCTIONS	18
INDUSTRY-FUNDED ANALYSES ALSO CONFIRM THE RANGE OF IMPACT	23
MANY INSURERS OFFER INCENTIVES FOR BELT USE	23
CASE STUDIES SHOW INCENTIVES OFTEN ARE NOT COSTLY	25
V. CONCLUSIONS	28
REFERENCES	30

LIST OF TABLES

Table 1. Effective Dates of Safety Belt Use Laws and Most Recent Estimates of Belt Usage Rates	13
Table 2. Decrease in Front-Seat Fatalities for a 10 Percentage Point Increase in Safety Belt Use	15
Table 3. Decrease in Injuries of Front-Seat Occupants for a 10 Percentage Point Increase in Safety Belt Use	16
Table 4. Decrease in Injury Claims of Covered Occupants for a 10 Percentage Point Increase in Safety Belt Use	20
Table 5. How States Regulate Auto Insurance Price Changes	22
Table 6. Insurer Market Shares and Discounts for Vehicles with Automatic Restraint Systems	24

LIST OF FIGURES

Figure 1: Price of Auto Insurance Coverages In High and Low Risk Situations	7
Figure 2. Time Trends in Injuries and Auto Claims Paid	9
Figure 3. Map Showing States with safety belt use Laws	12
Figure 4. Percentage of Population Covered by Belt Laws, by Month	12

I. INTRODUCTION

The National Highway Traffic Safety Administration (NHTSA) has prepared this report on the linkage between safety belt usage rates and automobile insurance price reductions¹ in response to a directive in the Committee Report accompanying the 1988 Department of Transportation Appropriations Bill as enacted in the continuing resolution for FY 1988. The Congress suggested that:

stronger linkage of automobile insurance rates and premiums to seat belt usage rates may provide an important seat belt usage incentive.

It directed NHTSA to:

analyze this linkage and identify ways of promoting the use of seat belt statistics for determining automobile insurance rates

Case studies were specifically requested "in states such as Texas" where insurance price reductions were mandated in the state's belt use law or were reduced in response to the belt use increases following the law's enactment.

THIS REPORT IS DIVIDED INTO FIVE CHAPTERS

The report was based primarily on preexisting research for two reasons. First, Congress indicated it should be submitted quickly and prepared under existing budget authority. Second, state data on insurance claims paid in 1986 generally will not be available until the end of 1989, so that the study results are necessarily very preliminary.

The report first considers how increased belt use can affect insurance claims and prices. This effect involves a chain of causation. Belt use reduces the probability of injury. A reduced injury probability means fewer injuries and fewer injury liability claims filed with and paid by insurers. Belt use also reduces the average severity of the injuries that do occur and, possibly to a lesser extent, the average cost per injury claim paid. Reduced claims, in turn, can lead to reduced insurance prices.

¹More formally, the charge paid for an insurance policy is called a premium. The premium amount is determined from a rate schedule that shows appropriate rates (in other words, prices) to charge classes of insurance purchasers.

Chapter II provides relevant facts about the automobile insurance industry, with emphasis on what insurance covers, the way prices are set, and the major factors other than belt use that are inducing price changes. While this background information is necessary only at the end of the chain, it is useful to keep in mind throughout.

Chapter III examines the chain's various links. It describes the trend in safety belt use and the laws promoting use. It examines how increasing belt use has reduced traffic fatalities and injuries. Finally, it discusses the aggregate and per-policy average cost savings produced by these belt use increases.

The report then discusses how these cost savings have been and could be used to encourage greater belt use. Chapter IV describes the insurance price reductions ordered in Hawaii, Iowa, Massachusetts, and Texas in response to rising belt use, as well as the analyses underlying these reductions. It summarizes relevant analyses by insurance rating bureaus and insurance claims data analysis organizations. It identifies bonus coverages that selected insurers give to belt users and price discounts for vehicles equipped with automatic restraint systems. Three case studies explore how discounts came to be offered and what makes them effective.

Chapter V concludes and summarizes the report. It also assesses effective ways to structure insurance price reductions as safety belt use incentives.

II. STRUCTURE AND OPERATION OF THE AUTO INSURANCE INDUSTRY

The insurance industry is split for regulatory purposes into three principal segments: property and casualty, life, and health. Some insurance holding companies have subsidiaries that sell policies in all three lines of business, but most restrict themselves to one or two. Auto insurance is the largest seller among property and casualty coverages, accounting for 42 percent of receipts in this segment -- over \$81 billion in 1987.

More than 40 percent of auto insurance premiums are written by mutual and reciprocal insurance companies (Wish, 1988). These companies are essentially cooperatives owned by their policyholders. The remaining premiums are written by traditional stock corporations.

As this chapter explains, a wide range of auto insurance coverages is available. About 40 to 50 percent of the typical auto insurance premium is charged for injury-related coverages, with the remainder for property damage protection. Furthermore, a third of the reimbursement for auto injuries comes from other sources, primarily health insurers. Consequently, only a portion of any reduction in injury costs would affect auto insurance prices. Since premiums per registered vehicle have risen an average of 9 percent per year since 1981, a very large reduction probably would be needed to bring about an actual price drop rather than just a slower rise.

MANY AUTO INSURANCE COVERAGES ARE AVAILABLE

Auto insurance is split into physical damage and liability coverages. Physical damage coverages pay for damage to the insured's vehicle. They include:

- o Collision, which pays for repair or replacement of the insured vehicle if it is involved in a crash and the driver of another vehicle is not at fault.
- o Comprehensive, which, among other things, pays for repair or replacement of a vehicle that is stolen or damaged without being involved in a crash.

If the vehicle was financed, the lender normally requires physical damage and liability coverage. Rising belt use should not affect the price of this coverage since it will have minimal impact on crash frequency (O'Neill et al., 1985).

Liability coverages (loosely defined to also include coverage of the insured's own medical costs) reimburse losses resulting from injuries and from at-fault damage to the property of other people. The nature of these coverages depends on state tort law. Liability coverages include:

- o Personal Injury Protection (PIP) coverage in states with no-fault laws. Under no-fault law, a crash-involved vehicle's PIP coverage reimburses the medical costs of vehicle occupants, up to a fixed limit, regardless of who is at fault in the crash. Some reimbursement, at least for serious injuries, also can be obtained by suing the person who was at fault in the crash. Lost income is compensated by auto insurers only under liability coverage of at-fault drivers.
- o Medical payments or own-medical coverage, originally called first-aid coverage, in states where tort liability laws provide that injured occupants will recover their injury-related losses by suing the person at fault in the crash. This coverage pays a modest amount of the medical costs for occupants of the insured vehicle, typically \$1,000, without reference to fault, in tort states. This coverage is designed to assure payment for emergency medical treatment. The insured's health insurance normally reimburses any further medical costs if the insured is at fault in the crash, although coverage against these costs can be purchased as part of the auto medical payments package. Lost income is not compensated by this coverage.
- o Bodily injury coverage, which reimburses other people's medical, income, and other losses when the insured is at fault in a crash. In no-fault states, this coverage applies only to costs that legally can be recovered through tort action.
- o Third-party property damage, which pays for property damage that is the insured's fault.
- o Uninsured (and underinsured) motorist protection, which reimburses the insured's costs if the insured's vehicle or the insured is hit by an uninsured, at-fault motorist. This coverage applies even while the insured is a pedestrian. Again, lost income is not compensated.

In 18 states, injury coverage is written on a no-fault basis. Eighteen additional states require drivers to purchase coverage to reimburse bodily injury and property damage they inflict on others. Even the remaining states have laws requiring those involved in crashes to furnish proof of their financial responsibility (Insurance Information Institute, 1987). These laws encourage but do not ensure purchase of liability insurance.

AUTO INSURANCE PAYS ABOUT TWO-THIRDS OF REIMBURSED CRASH-RELATED INJURY COSTS

Available data suggest that auto insurance pays about two-thirds of total reimbursed crash-related injury costs. The remainder is paid by other insurance programs, which also will benefit from the cost reductions produced by higher belt use.

Almost all automobile insurance limits the insurer's maximum liability. In most states, drivers are required to purchase only \$40,000 of liability coverage for all persons injured in a crash, subject to a limit of at least \$20,000 per individual (Insurance Information Institute, 1987). Automobile policies rarely cover more than \$300,000 to \$500,000. PIP medical coverage typically is limited to \$5,000 to \$25,000, but is unlimited in a few states.

An important implication of liability limits is that auto insurance will not cover the full costs of some injuries. Two national studies (All-Industry Research Advisory Council, 1979; U.S. Department of Transportation, 1971) confirm that severe and fatal injury costs often exceed policy limits, with the public sector and the people involved in the crash typically bearing two-thirds of these costs. Severe and fatal injuries contribute about 85% of the total economic costs -- medical costs and lost earnings -- of injuries resulting from auto crashes.

Other insurance programs also pay a portion of auto injury costs. A 1977 survey of people injured in crashes showed that almost one third of their average reimbursement came from health insurance, long-term disability insurance, life insurance, and such public insurance programs as Medicaid, Medicare, unemployment compensation, and Social Security (All-Industry Research Advisory Council, 1979; Coonley and Gurvitz, May 1983; Houchens, 1985). In states without no-fault systems, these are the only sources of more than \$1,000 in compensation that typically are available to at-fault drivers and their immediate families. When someone is injured while on work-related travel, most costs are paid by Workers' Compensation insurance, health insurance, sick leave, and corporate liability policies (Young, 1988).

INJURY-RELATED COVERAGES ACCOUNT FOR 40-50 PERCENT OF AUTO INSURANCE PRICES

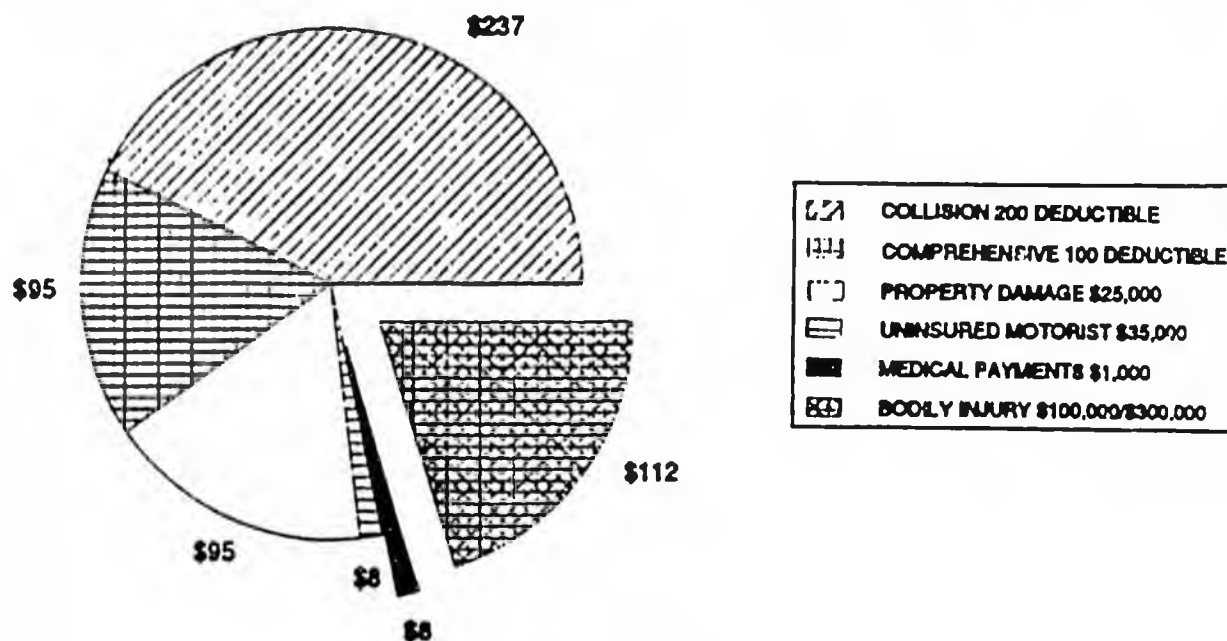
Figure 1 illustrates the price of each coverage for a young driver of a sporty car in central Philadelphia and the middle-aged drivers of a station wagon in suburban Omaha (Yezzi, 1988). The prices shown here are those presently recommended by the Insurance Services Office (ISO). ISO is a rating bureau. It pools data on insurance claims payments and provides advisory information about pricing to the insurers that supplied the data. Figure 1 suggests that drivers, whether paying modest or astronomical prices, are likely to pay less than half of their insurance premiums for bodily injury liability and medical coverage if they buy collision and comprehensive coverage, as about 70 percent do (Docket 74-14-32-6106 and 6126, 1984).

National data obtained for this report from insurers writing more than 30 percent of all auto premiums, when combined with data on total premiums from Wish (1988), indicate that the average driver pays roughly 40 to 50 percent of premiums for injury coverages. These data also show that 10 to 20 percent of the premiums cover the insured's own injury costs and the remaining 25 to 30 percent cover liability if the insured injures another person.

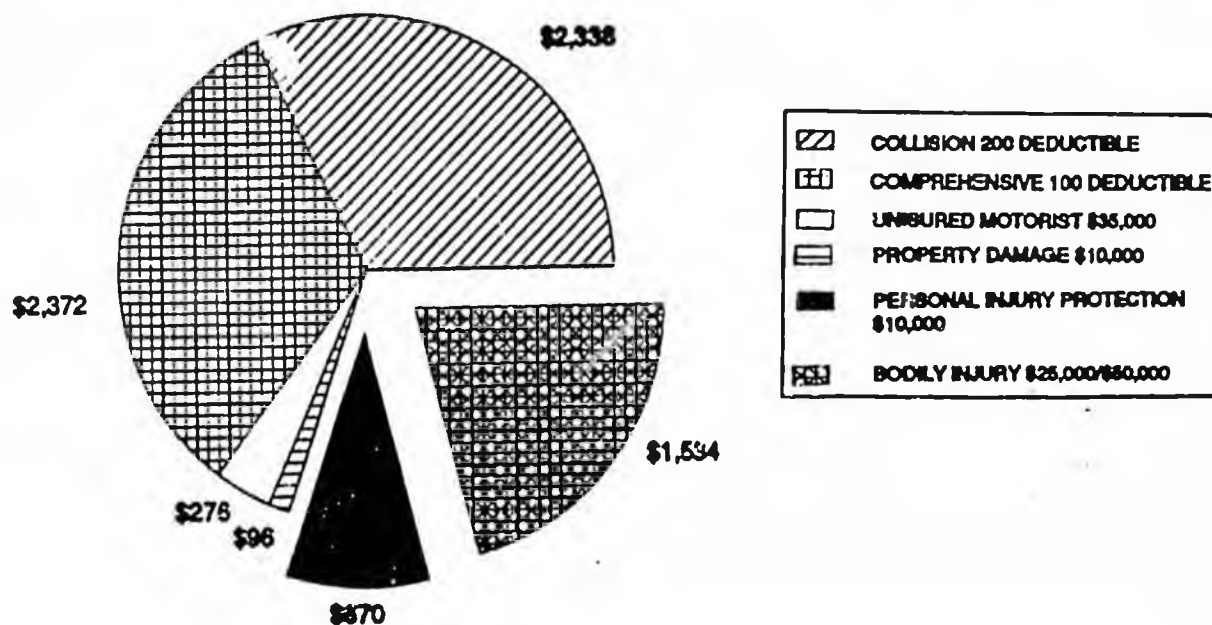
Rising belt use reduces injury, but not property damage, claims costs. Consequently, a 10 percent drop in injury claims costs reduces total claims costs, and presumably insurance prices, by 4 to 5 percent.

Automatic crash protection systems reduce the expected medical claims costs for occupants of the insured vehicle and the expected income loss costs for occupants unrelated to the insured. As Chapter IV describes, many insurers offer a 30 percent discount on PIP or own-medical coverage for vehicles equipped with these systems. Most injury and death claims payments, however, derive from third-party liability claims since lost wages are reimbursed only for these claims. Third-party claims are not reduced when the insured vehicle is equipped with automatic crash protection systems. These claims reductions will appear after enough vehicles have automatic crash protection systems to affect traffic injuries substantially. Until then, discounts for automatic crash protection systems typically will reduce insurance bills for most drivers by 3 to 6 percent (a 30 percent reduction times 10 to 20 percent own-injury).

Figure 1: Price of Auto Insurance Coverages
In Low and High Risk Situations



A. Coverage for a 45-year old married couple with clean driving records who drive a 2-year old station wagon less than 15 miles per day to work from their home in suburban Omaha, Nebraska.



B. Coverage for a single, 23-year old male who has one speeding ticket and drives a 2-year old Japanese sports car more than 15 miles per day to work from his home in central city Philadelphia.

Drivers in tort liability states would receive smaller discounts than drivers in no-fault states, because medical payment coverage in a tort state is a smaller share of a typical insurance bill than PIP coverage in a no-fault state. (For example, in Figure 2 the medical payment slice of the Nebraska driver's pie is smaller than the PIP slice of the Philadelphia pie.) Most of the 27 million drivers insured by State Farm Insurance, the nation's largest auto insurer, would receive discounts of \$9 to \$18 (Insurance Institute, April 1988). Discounts from the ninth largest auto insurer, USAA, typically have been \$15 to \$20 (Insurance Institute, April 1988).

LIABILITY CLAIMS COSTS AND INSURANCE PRICES ARE RISING RAPIDLY

Rapid rises in insurance prices mask somewhat the savings possible from increased belt use. As Figure 2 indicates, liability claims payments have risen dramatically since 1983. In contrast, the annual number of police-reported injuries and the annual payments for physical damage claims were essentially stable during this time period.² In inflation-free dollars, payments per injury rose 13.7 percent per year between 1983 and 1986. Possibly due in part to increased belt use, liability claims costs per injury rose at a slower rate, 5.7 percent in inflation-free dollars, between 1986 and 1987. Accompanying the rise in claims, auto liability insurance prices rose an average of 12 percent per year between 1983 and 1987.

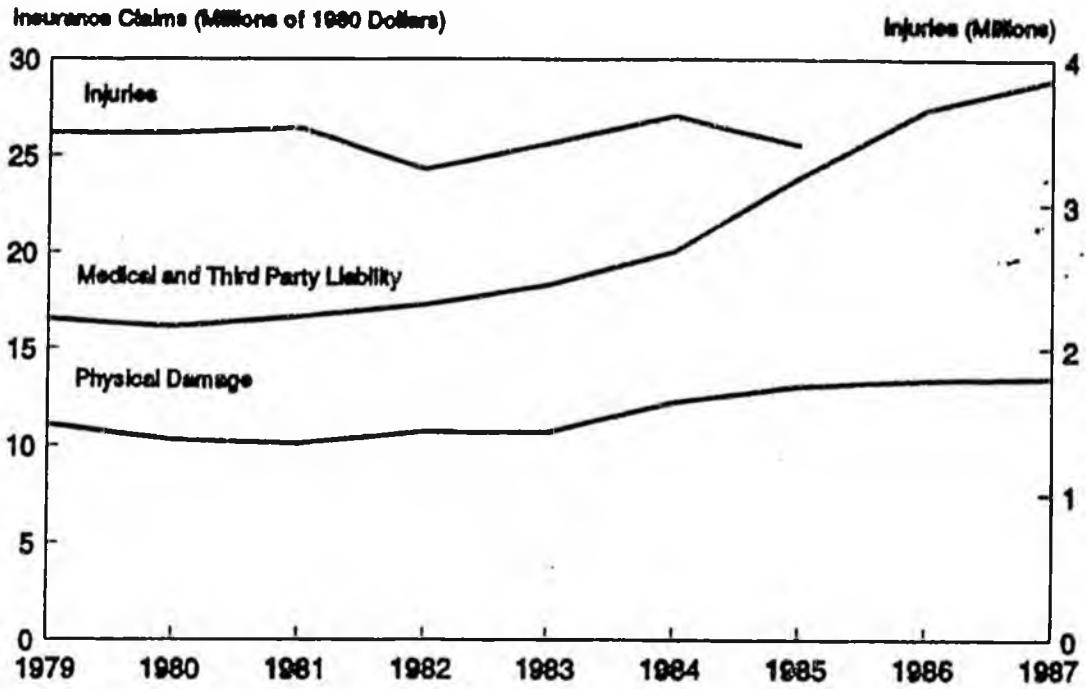
INSURANCE PRICE DETERMINATION IS A COMPLEX PROCESS

A very complex process is used to establish insurance prices. In particular, different states regulate insurers in different ways.

Insurers separate applicants into classes and territories, then use statistical data on losses, tempered by judgment, to determine the price they will offer to each territory-specific class. Auto insurance involves millions of price classes. Because many individual insurers were believed to lack enough data about claims costs to make sound statistical judgment about losses for so many price classes, insurers were permitted to share their claims data (National Commission for the Review of Anti-trust Laws and Procedures, 1979). Insurers in a state pool their loss experiences and are free to base their prices on the pooled experience data. Under the McCarran-Ferguson Act (P.L. 79-15), regulation of this process is delegated to the states (Shapiro et al., 1981).

²Figure 2 is based on the year claims were paid, not incurred. Many injury claims payments lag injury occurrence and physical damage claims payments by a year (Hammitt, 1985).

Figure 2. Time Trends in Injuries and Auto Claims Paid



Source: Injuries from NASS, various years; claims from Best's Aggregates and Averages, 1987-88.

Texas and Massachusetts have chosen to analyze the pooled data and set maximum prices. Elsewhere, many insurers subscribe to "rating bureaus" that pool their loss data. The insurers then add an expense factor to the loss data, and possibly adjust it based on their own loss experience, to determine prices. ISO, the largest rating bureau, pools loss data in 44 states and the District of Columbia.

Anyone who has shopped for auto insurance knows that insurers do not all offer the same prices. A few do quote the prices derived directly from analyses by ISO or another rating bureau, but most insurers only use them as a starting place. Based on the loss experience of their insureds, many offer prices that are a bit higher or lower than the rating bureau's across the board or for most classes of applicants. Some offer discounts from these prices for applicants who own cars with superior safety records or special features like automatic crash protection. Some also apply surcharges for those who present extra risk of loss, for example by buying optional large engines or sports cars. Some large companies base their auto insurance prices entirely on their own loss experience. Finally, some insurers specialize in coverage for high-risk drivers and charge correspondingly high prices (GAO, 1979).

State regulations vary in their details, but adhere to the basic principle that insurers have the option of deriving prices from bureau data or using prices they derive from their own loss and expense experience (Shapiro et al., 1981). Most states require insurers to demonstrate that experience justifies their pricing, either approving price changes before they go into use or within 60 days afterwards. A few states exercise minimal control over pricing (National Commission for the Review of Antitrust Laws and Procedures, 1979). Michigan requires public hearings on price increases. Chapter IV provides further information on the practices in different states.

III. IMPACTS OF BELT USE ON INJURY RATES

To control insurance costs requires slowing or reversing the rise in insurance claims payouts. This can be accomplished by reducing the incidence of injuries, and especially of severe injuries. Safety belt use is one of the most effective and least costly ways to reduce the number and severity of crash injuries.

BELT USE HAS A LONG HISTORY

Safety belts were developed in the 1880s to keep people from bouncing off horse-drawn buggies. In 1922, Barney Oldfield's racer became the first belt-equipped car. Effective January 1, 1968, all new cars were required to have lap and shoulder belts for the driver and right front seat passenger and lap belts for all other seating positions. Recent belt systems include improvements such as retracting belt pretensioners and continuous loop design (Johannessen, 1984).

The potential advantages of belts have gone largely unrealized because many people choose not to wear them. The Department of Transportation has attempted to increase use in many ways, most notably through Federal Motor Vehicle Safety Standard (FMVSS) 208. After years of debate and revision, the automatic crash protection amendment to FMVSS 208 now is taking effect and will apply to all Model Year 1990 cars.

In response to FMVSS 208, roughly 13 percent of Model Year 1987 vehicles included automatic belts or airbags, and at least 25 percent will in Model Year 1988. A few manufacturers include automatic belts or airbags on all of their vehicles.

Between December 1984 and April 1988, 34 states and the District of Columbia passed laws mandating belt use by front seat occupants. Figure 3 shows the states that had laws in April 1988. In addition to the current-law states, Massachusetts and Nebraska implemented laws that subsequently were repealed in public referendums, and the Oregon law must be approved by referendum before it becomes effective. Table 1 shows the effective dates of all the laws that have been passed.

Belt laws in force covered 82 percent of the American populace in April 1988. For the most part, the states that still lacked laws were sparsely populated. Figure 4 shows how coverage grew over time.

Table 1. Effective Dates of Safety Belt Use Laws and Most Recent Estimates of Belt Usage Rates as of April 1988

<u>State</u>	<u>Effective Date</u>	<u>Percentage Belt Use</u>
California	1/86	49%
Colorado	7/87	47%
Connecticut	1/86	56%
Florida	7/86 (1/87)	50%
Georgia	9/88	
Hawaii	12/85	66%
Idaho	7/86	27%
Illinois	7/85	37%
Indiana	7/87	46%
Iowa	7/86 (1/87)	56%
Kansas	7/86 (7/87)	44%
Louisiana	8/86	35%
Maryland	7/86	66%
Massachusetts	1/86-12/86	24%
Michigan	7/85	48%
Minnesota	8/86 (5/88)	32%
Missouri	9/85 (7/87)	41%
Montana	10/87 (1/88)	57%
Nebraska	9/85-11/86	29%
Nevada	7/87	47%
New Jersey	3/85	41%
New Mexico	1/86	46%
New York	12/84	64%
North Carolina	10/85 (1/87)	65%
Ohio	5/86 (7/86)	42%
Oklahoma	2/87	35%
Oregon	1/89	
Pennsylvania	11/87 (3/88)	
Tennessee	4/86 (1/87)	28%
Texas	9/85 (12/85)	54%
Utah	4/86 (10/86)	22%
Virginia	1/88	
Washington	6/86 (1/87)	52%
Wisconsin	12/87	
Dist. Columbia	12/85 (6/86)	55%

Source: Belt use from NHTSA, March 1988; effective dates from NHTSA, April 1988. Dates in parentheses are dates fines became effective if more than one month after the effective date of the law.

The belt laws and the publicity they stimulated raised belt use from about 15 percent nationally in 1984 to about 48 percent in states with belt laws and about 43 percent overall in 1988. Belt use varies considerably from state to state, and sometimes varies over time within a state. Belt use law states have reported use levels as high as 75 percent. Table 1 gives the most recent, often quite approximate, use levels reported by belt law states. Belt use is reported to be about 65 percent in Hawaii, Maryland, New York, and North Carolina. Most states with belt laws reported belt use between 35 and 55 percent. Even some states without laws now are reporting usage rates above 25 percent.

RISING BELT USE HAS REDUCED INJURIES AND FATALITIES

In 1987 alone, NHTSA estimates that the 25 percentage point rise in national belt use over 1984 levels saved about 1,300 lives and prevented about 16,000 moderate to serious injuries. From December 1984, when New York's first safety belt use law became effective, through the end of 1987, these belt use increases have saved about 2,800 lives and prevented about 33,000 moderate to serious injuries.

Since passage of the safety belt laws, several studies have examined the impacts of rising belt use on injuries. These studies address the percentage change in injuries to front seat occupants, since they are covered by all the laws. FARS and NASS data for the year before the first belt laws went into effect, 1984, show that front seat occupants of cars accounted for 48 percent of all traffic fatalities, 47 percent of serious injuries, and 71 percent of moderate and minor injuries. Front seat occupants of pickups and other light trucks, who also are covered by many belt laws, accounted for roughly another 12 percent of the fatalities and 10 percent of the injuries. These national percentages -- coverage of those experiencing roughly 60 percent of fatalities and 80 percent of moderate injuries -- are consistent with the state data.

Impact on Fatalities. Because the most timely and accurate data indicate the incidence of fatal injuries, most studies only have examined the impact on fatalities to front-seat occupants. The most comprehensive analysis of the impact of belt use on fatalities appears in Campbell et al. (1987). In this study, the number of front-seat fatalities that would have occurred without a belt use law was forecast for states grouped by the length of time since they implemented their laws. The projections considered both the previous fatality trend in the states and the current fatality experience of states without laws. Control groups included: (1) fatalities in the same state among pedestrians, rear-seat occupants, and others not covered by the belt law, and (2) front-seat occupants in states without belt laws.

Overall, belt laws were estimated to have reduced front-seat fatalities by 6.6 percent in states where they were implemented before the end of 1986, about a 2.5 percentage point drop for every 10 percentage point rise in belt use. This estimate masks substantial variation in the reductions achieved in individual states. It also underestimates the ultimate impact of some laws since it includes the partial impact in states that issued only warning tickets during a phase-in period. Furthermore, it is conservative because belt use in non-law states rose, thus reducing fatalities in the control group, possibly by as much as 1 percent.

A second comprehensive study (Skinner and Hoxie, 1988) includes a time-series analysis of fatality trends across states and more detailed analyses in nine large states that implemented belt laws by January 1986. This work is based on fatality data through September 1987. It suggests an average fatality reduction of 11.9 percent in the first three months after a belt law is implemented and 6.3 percent thereafter. This equates to about a 2.1 percentage point drop in fatalities for every 10 percentage point rise in belt use on a continuing basis and an overall 2.5 percent drop for the period studied.

Other noteworthy studies of fatality impacts in 1985 include Partyka (1987), Lund et al. (1986), Wagenaar et al. (1987), and Skinner and Hoxie (1986). As Table 2 indicates, these studies suggest a consistent 2.5 to 3.7 percentage point decrease in front-seat fatalities for each 10 percentage point increase in belt use.

Table 2. Decrease in Front-Seat Fatalities
For a 10 Percentage Point Increase in safety belt Use

<u>Study</u>	<u>Reduction</u>
Campbell (1987)	2.5%
Skinner (1987)	2.1-2.5%
Wagenaar (May 1987)	3.2%
Campbell (1986)	3.7%
Lund (1986)	3.7%
Partyka (1987)	2.6%
Skinner (1986)	2.5%

The consensus on a 2.1 to 3.7 percentage point drop in front-seat fatalities for each 10 percentage point increase in belt use derives from the experience of states that generally were experiencing rises in belt use from a prior level of 15 to 20 percent to new levels from 35 to 65 percent. The rate of change in fatalities with respect to belt usage rate may not be linear. In particular, the rate may rise for very high use levels (for example, 80 percent and above). According to one study, when belt use was about 67 percent in Hawaii during 1986 the remaining unbelted drivers had a fatality rate 3.1 times the rate for the belted drivers (State of Hawaii, 1987).

Impact on Injuries. Estimates of the impact of belt use on injuries generally have been based on the injuries indicated in police reports on crashes. Because injury severity necessarily is coded on a rather crude scale at the scene by officers with minimal medical training, it can be relatively inaccurate, especially with respect to head injuries and internal injuries (Partyka, 1982). Nevertheless, police-reported injuries to front-seat occupants have dropped in states that have implemented belt laws.

The Campbell (1987) study provides time series analyses of the impacts on moderate and severe injuries in New York, North Carolina, and Texas, and on severe injuries in Illinois. The other detailed studies available (Wagenaar, March 1987; Hawaii, 1987) arrive at higher estimates.

Table 3. Decrease in Injuries of Front-Seat Occupants
For a 10 Percentage Point Increase in Safety Belt Use

<u>Study</u>	<u>State</u>	<u>Police-Reported Severity</u>	<u>Decrease</u>
Campbell(1987)	New York	K+A+B	1.8%
	North Carolina	K+A+B	2.0%
	Texas	K+A+B	2.0%
	Illinois	K+A	3.0%
Wagenaar (March 1987)	Michigan	K+A+B+C	4.0%
Limm (1987)	Oahu	Hospitalized	4.9%

K = fatality
A = serious injury
B = moderate injury
C = minor injury

As Table 3 shows, at a minimum, a 10 percentage point rise in safety belt use seems to result in a 1.8 to 3 percentage point drop in serious and moderate injuries to front-seat occupants. At the extreme, on Oahu, hospitalizations dropped 4.9 percentage points for each 10 percentage point increase. A complete inventory of crash-related hospitalizations on Oahu showed that those not using belts were 1.8 times more likely to be hospitalized than those who were (Limm, 1987). This impressive statistic was compiled in the first half of 1986, when 74 percent of Oahu drivers were belted.

The studies suggest that a 10 percentage point rise in belt use drops fatalities of front-seat occupants by 2.1 to 3.7 percentage points and moderate and serious injuries by at least 1.8 to 3.0 percentage points. This equates to a drop in overall fatalities by 1.2 to 2.4 percentage points (55 to 65 percent of 2.1 to 3.7 percent) and in moderate and serious injuries by 1.3 to 2.5 percentage points (70 to 85 percent of 1.8 to 3.0 percent).

RISING BELT USE HAS REDUCED INJURY COSTS AND SHOULD REDUCE INSURANCE PRICES

The fatality and injury reductions produced by belt use laws have reduced auto insurance claims by roughly \$1 to 2.5 billion dollars. Other public and private insurers probably saved another \$0.5 to 1.25 billion.

The states with the largest belt usage gains -- about 50 percentage points -- probably have experienced a 6 to 12 percent decrease in fatalities and injuries. The probable result is a 2.4 to 6 percent drop in insurance costs (6 to 12 percent times the 40 to 50 percent of insurance costs that are injury-related). If the cost per auto insurance policy is assumed roughly equal to total premiums (from Wish, 1988) divided by the number of registered vehicles, the average cost reduction per insured vehicle in 1987 was \$11 to \$27 dollars in these states.

Claims costs per injury annually rose 17.5 percent between 1983 and 1986, and 9.7 percent in 1987, according to the data in Chapter II. Annual inflation of 2 to 4 percent in all costs and 6 to 7.5 percent in medical costs (Economic Report, 1988) contributed to the rise in claims costs. Unless the rate of increase in claims costs per injury drops substantially, the reduction in claims costs attributable to rising safety belt use appears likely to slow, but not reverse, the rate of increase in auto insurance prices.

IV. STATE AND INSURANCE INDUSTRY ACTIONS

The insurance industry has examined the linkage between belt use and the price of injury liability coverage. Insurance regulatory agencies in Hawaii, Iowa, Massachusetts, and Texas have analyzed the impacts of rising safety belt use on insurance claims and incorporated this information into their decisions on pricing. The Highway Loss Data Institute, a claims data analysis organization funded by the insurance industry, has examined the impact on injury claims in New York and New Jersey. ISO, the largest rating bureau, has recommended discount factors for vehicles with automatic occupant protection systems. Finally, many auto insurers have offered incentives to encourage belt use.

FOUR STATES HAVE ORDERED PRICE REDUCTIONS

Hawaii's safety belt law mandated a 10 percent reduction in the price of PIP and medical payments coverages for the first three years after passage, followed by conversion to fully actuarial prices that incorporated the impacts of increased belt usage. The 10 percent figure was based on existing research, with particular weight on the Massachusetts Insurance Division's estimates (Santos, 1988).

Hawaii's Department of Commerce and Consumer Affairs is compiling extensive data on the impacts of rising belt use on injury incidence and claims. Preliminary indications are that the 40 percentage point rise in belt use in the state had even more impact than anticipated, with a 20 percent drop in overall fatalities, a 55 percent drop in fatalities to front-seat passengers, and on the order of a 12.5 percent drop in personal injury protection losses (State of Hawaii, 1988).

Iowa's legislature mandated a reduction in the price of bodily injury liability and medical payment coverage to reflect the expected savings in claims costs (Knapp, 1988). The Insurance Department found that in the first six months of the law, roughly a 30 percentage point rise in belt use was associated with a 4.4 percent drop in bodily injury loss payments made to injured persons by insurers of motorists at fault (1.5 percentage points for each 10 percentage point increase) and a 9 percent drop in medical payments paid to motorists by their own insurers (3 percent for each 10). Some insurers, however, experienced virtually no decrease, and the Department noted the difficulty of separating the impacts of the law from variations in medical costs, crash frequency, and other factors. Based on the available data, the Department ordered a 5 percent price reduction.

The Massachusetts safety belt use law required a reduction in auto insurance prices. The Massachusetts Division of Insurance estimated insurer savings on 1986 claims payouts resulting from the state's belt law. Anticipating a 43 percentage point rise in belt use, it ordered an 11.2 percent reduction in 1987 prices for bodily injury liability, PIP, and uninsured motorist coverages. This is a 2.6 percentage point drop in the price of this coverage for each 10 percentage point increase in belt use; it equates to an average drop of 0.8 percent across all types of coverage (Hosford, 1988). Despite the publicity surrounding this reduction and other belt promotion efforts, belt usage rose only 17 percentage points, less than half the amount anticipated. This low belt law acceptance, together with inadequate education and other factors, resulted in the law's repeal in a late 1986 referendum. Based on the more complete claims experience in 1986, prices for injury coverages were increased by 2.8 percent in 1988 to reflect an expected 10 percentage point decrease in belt use due to repeal of the law (Massachusetts, 1987).

The Division's work was actuarially based. Early New York data, and subsequently Massachusetts data, on the percentage reduction in injuries by severity that resulted from rising belt use were multiplied by the percentage of Massachusetts insurance claims costs attributable to each injury severity. Claims costs for injuries to non-occupants then were incorporated into the analysis (Hosford, 1988).

Though not required by the Texas belt use law, the Texas State Board of Insurance factored the law's impacts into its prices in each of 1986, 1987, and 1988 (Daniel, 1988). The 1986 analysis was based on a formula developed by the Highway Users Federation to predict the effects of safety belt use on injury rates by severity. It led to a 21 percent decrease in price for bodily injury liability, PIP, medical payments, and uninsured motorist coverages. The reduction was decreased to 15 percent in 1987, based on methodology refinements that limited the saving per fatality averted to the mean policy liability limit and applied the expected percentage decrease in injuries to front-seat occupant injuries in covered vehicles rather than all injuries.

When police-reported injury and crash rates became available for the first seven months after the law went into effect, they showed that a 45 percentage point increase in belt use in urban areas and an unknown but probably smaller increase elsewhere had caused an 11.5 percent drop in fatality rates and, the actuarial staff assumed, in injury severity. The Board adjusted prices accordingly, to a level 5 percent below the level suggested by claims incurred in the policy year ending June 30, 1986, when the law was in effect for only seven months (Daniel, 1988). The impact essentially is a 2.6 percent reduction in the price of injury coverage for each 10 percentage point rise in belt use.

Table 4 indicates the percentage decreases in injury rates observed or estimated by the insurance regulatory agencies in states where price changes have been ordered because of rising belt use. The agencies estimate that each 10 percentage point rise in belt use has resulted in a 1.7 to 2.8 percentage point drop in injury claims costs. This range is reasonably consistent with the 1.2 to 2.5 percentage point range suggested by the studies reviewed in Chapter III. It also is consistent with earlier NHTSA projections. In its July 1984 regulatory impact analysis on FMVSS 208, the agency estimated that each 10 percentage point rise in automatic belts would produce a 1.8 percentage point drop in injury claims. Adjusting for the difference in effectiveness between automatic and manual belts, this becomes a 1.9 percentage point drop. An insurance cost saving of \$14 per vehicle insured was projected.

Table 4. Decrease in Injury Claims of Covered Occupants For a 10 Percentage Point Increase in Safety Belt Use

<u>State</u>	<u>SEVERITY OF INJURY</u>		
	<u>Fatal</u>	<u>Fatal or Serious</u>	<u>Any*</u>
Hawaii	5.0%	3.1%	2.5%
Iowa		1.5-3.0%	1.7%
Massachusetts	2.2%	4.0%	2.8%
Texas	2.6%		2.6%
<u>NHTSA Regulatory Analysis</u>			1.9%
<u>Insurance Data Analysis Organizations</u>			
Insurance Services Office (automatic restraint)			3.0%
Highway Loss Data Institute			1.7-3.3%

* Percentage of all injury costs.

In other states, the insurance regulatory agencies generally have not compiled systematic information on the impacts of belt laws on prices. To the extent that insurance is a competitive business, the impact may be reflected in the prices filed by insurers as rising belt use helps to control claims costs.³ The impacts most probably will be comparable to those in Hawaii, Iowa, Massachusetts, and Texas: a 1.7 to 2.8 percent drop in the price of bodily injury liability and medical payments or PIP coverage for each 10 percentage point rise in belt use. The 5 to 12 percent reductions in prices for injury coverage that were achieved in these states reduced overall auto insurance prices by an estimated 2 to 6 percent (5 to 12 percent times 40 to 50 percent injury-related), about \$9 to \$27 per vehicle insured.

A notable relationship exists between the clarity of price reductions related to belt use and the insurance regulatory system in a state. Texas and Massachusetts were able to make central policy because they almost unilaterally set insurance prices. Twenty-seven states, including Hawaii and Iowa, review the actuarial basis for and approve price changes before they are put into use. In their belt use laws, the legislatures in Hawaii and Iowa authorized state regulators to mandate one-time insurance price reductions. Normally, they would not have the authority to impose reductions. The remaining states, which are identified in Table 5, largely allow insurers to decide what prices are appropriate (National Commission for the Review of Antitrust Laws and Procedures, 1979). These states have the strongest tradition of moderate intervention in insurance pricing. None ordered price reductions in response to rising belt use.

³See GAO (1979) or Joskow (1973) for a discussion of the industry's structure.

Table 5. How States Regulate Auto Insurance Price Changes

<u>State</u>	<u>Type of Filing</u>	<u>State</u>	<u>Type of Filing</u>
Alabama	PA	Montana	FU
Alaska	PA	Nebraska	PA
Arizona	UF	Nevada	PA (FU)
Arkansas	FU	New Hampshire	PA
California	NF	New Jersey	PA
Colorado	FU	New Mexico	PA
Connecticut	PA (FU)	New York	PA
Delaware	PA (FU)	North Carolina	PA
Florida	PA (UF)	North Dakota	PA
Georgia	PA (FU)	Ohio	FU
Hawaii	PA (FU)	Oklahoma	PA
Idaho	NF	Oregon	FU
Illinois	UF	Pennsylvania	PA
Indiana	FU	Rhode Island	PA
Iowa	UF	South Carolina	PA
Kansas	PA	South Dakota	PA
Kentucky	FU (UF)	Tennessee	PA
Louisiana	PA	Texas	PA
Maine	FU	Utah	FU (UF)
Maryland	FU	Vermont	FU
Massachusetts	PA	Virginia	FU
Michigan	PAH	Washington	PA
Minnesota	FU	West Virginia	PA
Mississippi	PA	Wisconsin	UF
Missouri	UF	Wyoming	NF
Dist of Columb	PA		

Prior Approval (PA) means that new prices cannot be used until approved by the State Insurance regulatory agency. A 30 day review period generally is allowed.

Prior Approval with Public Hearing (PAH) means that the Commission holds a public hearing before approving the price change request.

File and Use (FU) means that new prices can be used as soon as they are filed with the Commission, although they have to be discontinued if the Commission disapproves of them.

Use and File (UF) means that new prices can be used for a fixed time period, generally 30 days, before they are filed with the Commission, although they have to be discontinued if the Commission disapproves of them.

No File (NF) means that price changes are not filed with or reviewed by the Commission.

Letters in parentheses denote how the system operates as a practical matter when it differs from the nominal legal system.

Source: Systems in use from Parsons (1988); definitions from Shapiro et al. (1981).

INDUSTRY-FUNDED ANALYSES ALSO CONFIRM THE RANGE OF IMPACT

Two analyses by industry-funded organizations that analyze claims data further confirm that the impact on prices of injury-related coverage is likely to lie roughly in the 1.7 to 2.8 percent range for each 10 percentage point increase in belt use. First, the Highway Loss Data Institute, an industry-funded claims data analysis organization, studied 1985 injury claims rates for Model Year 1983-85 cars in New York, New Jersey, and Connecticut prior to and after implementation of the New York and New Jersey safety belt laws (Highway Loss Data Institute, 1986). They found that, relative to the control state, a 35 percentage point increase in belt use in New York was associated with a 6 percent drop in injury claims and an 8 percent drop in injury claims in cases with collision damage also claimed. For New Jersey, the corresponding drops were 8 percent and 6 percent for a 24 percentage point rise in belt use. This equates to a 1.7 to 2.3 percent reduction in claims frequency for each 10 percentage point increase in belt use in New York and a 2.5 to 3.3 percent reduction in New Jersey.

Second, since November 1986, ISO has recommended a 30 percent discount on PIP or own-medical coverage for vehicles equipped with automatic safety belts -- essentially for belt use 100 percent of the time -- or with air bags.

MANY INSURERS OFFER INCENTIVES FOR BELT USE

Insurers that in aggregate write at least 35 percent of all premium volume offer a 30 percent discount on PIP or own-medical coverage for cars with automatic belts. Insurers that write another 20 percent of the market, most notably State Farm and Nationwide, offer or are in the process of filing a 10 percent discount. All of these companies and Allstate, which has almost 9 percent of the market, also match or exceed ISO's recommended 30 percent discount for full front air bags. These discounts are not offered in Texas where the Board of Insurance would not approve them (but moved to do so in mid-1988), or in Massachusetts and North Carolina where insurers chose not to offer them. Table 6 lists the discounts offered by selected major insurers. These discounts generally save drivers about \$5 to \$20.

Rising belt use will lead to a reduction of \$1 to \$2.5 billion in insurance payments. Spreading this saving uniformly across all coverages would reduce injury coverage prices about 5 to 10 percent.

As an alternative approach, incentives for increased belt use may be created by using some of the savings to offer a major reduction in the price of one coverage component or a free add-on coverage. Some insurers now offer such incentives. State Farm and the Farmers Insurance Group, for example, both double their accidental death benefit if a fatally injured person was wearing a belt. USAA adds \$10,000 to the benefits under its own medical payment and PIP coverages for any occupant who is injured or killed while wearing a safety belt, protected by an air bag, or secured in a child seat. Between 1984 and April 1988, USAA paid more than \$1 million in claims under this provision (Insurance Institute, April 1988).

Table 6. Insurer Market Shares and Discounts for Vehicles with Automatic Restraint Systems (Selected Insurers, as of April 1988)

Front Insurer	% of Auto Premiums	<u>PIP or Own-Medical Discount for:</u>		
		Automatic Belts	Driver Air bag	Full Air bag
Aetna Casualty	2.9%	30%	20%	30%
Allstate	8.7%	None	20%	30%
American Family	1.0%	30%	30%	30%
Continental	1.3%	30%	30%	30%
Erie Exchange	0.7%	30%	30%	30%
Farmers Group	4.7%	None	None	None
GEICO	1.6%	30%	30%	30%
Hartford	2.1%	30%	20%	30%
Liberty Mutual	2.5%	30%	20%	30%
Maryland Casualty	0.7%	30%	20%	30%
Nationwide	4.1%	10%	25%	40%
Prudential	0.8%	20%	30%	30%
State Farm	15.1%	10%	20%	30%
Travelers	2.5%	30%	15%	30%
USAA	1.9%	30%	60%	60%
U.S.F. & G.	1.6%	30%	30%	30%
ISO Recommendation		30%	20%	30%

Note: Only insurers with large market shares and a few with medium market shares were surveyed. Some insurers that are not mentioned also offer discounts.

Source: Discounts, Insurance Institute for Highway Safety, October 17, 1987 and April 16, 1988. 1986 Market Share, Wasilewski, 1987.

CASE STUDIES SHOW INCENTIVES OFTEN ARE NOT COSTLY

General Motors and its Motors Insurance Corporation mounted one of the best-known insurance incentive campaigns to encourage belt use. From April 16, 1984 until the end of the 1986 model year, buyers of General Motors cars received a free life insurance policy that paid a \$10,000 death benefit if someone was killed in a crash in the car while belted. The coverage lasted for one year from date of purchase. More than 17 million policies were written in the U.S. and Canada, but less than \$7.5 million dollars in claims costs were incurred -- less than 50 cents per vehicle sold (O'Toole, 1988). By structuring a business-related incentive that could be used as the focus of a major vehicle sales campaign and an insurance sales campaign directed at car buyers, General Motors was able to provide tremendous positive publicity for belts with minimal increase in its normal advertising costs.

USAA, the nation's ninth largest writer of auto insurance and primarily a writer of coverage for military officers, announced the strongest air bag incentive program to date on March 30, 1988 (Insurance Institute, April 1988). Again, the package reflected a business-related commitment to auto safety. USAA offered to pay \$300 to any of its insureds as a bonus for buying or taking a long-term lease on a car equipped with an optional air bag in 1988. This offer actually applies to very few vehicles. As of March 1988, optional airbags were available only on the Ford Tempo, Mercury Topaz, Oldsmobile Delta 88, Volvo 740 GLE, and Porsche 944. They were expected to be available later in the year on the Saab 9000T.

USAA is encouraging manufacturers and dealers to market optional air bags aggressively through a companion dealer incentive program in which USAA pays for the dealer prizes awarded for optional air bag sales. It also added a free \$25,000 death benefit to its life insurance policies, which is paid when an insured is killed in an auto crash while belted in an air bag protected position in a car. And it increased its PIP or own-medical discount for an air bag to 60 percent in all but a few states.⁴

⁴USAA also announced a 5 percent discount on property damage and bodily injury coverages for cars equipped with another new safety device -- anti-lock brakes.

USAA's explanation of its decision to offer a strong program of business-related incentives for buying safety devices is consistent with Congress' concept of an insurance-based belt use incentive scheme and suggests how to encourage this type of action. USAA Chief Executive Robert McDermott announced the policy in a joint press conference with NHTSA Administrator Diane Steed. He stated that it was a direct result of a challenge issued by Transportation Secretary Jim Burnley at a meeting of the Insurance Institute for Highway Safety's Board in December 1987. Burnley told insurance executives that he was "100 percent committed to automatic restraints," but that the insurers were far better positioned "to come up with incentives to encourage car buyers to opt for air bags and other safety devices" (Insurance Institute, April 1988).

Burnley continued his campaign at the press conference. In a written statement, he said:

The insurance industry has long had a lead role in advocating these safety devices and now must take a lead role in making them affordable and desirable in the eyes of the American public. Significant insurance discounts and incentives will make air bags more appealing and underscore your belief in the lifesaving effectiveness of this new safety technology.

The largest auto insurer, State Farm, also began using discounts to encourage greater automatic crash protection purchases in 1988. In announcing its new discount structure for automatic restraint systems, State Farm offered a 40 percent discount for cars equipped with both bags and automatic belts, even though none currently are manufactured. Said a State Farm spokesman, "We hope to drive the market a little and get some out there shortly" (Insurance Institute, April 1988). State Farm also noted that its action was "a gesture of support" for automatic crash protection systems rather than a reflection of loss experience (Yates, 1988).

These case studies and the discount structures listed in Table 6 suggest insurers, and even their largest rating bureau, are using insurance price breaks as incentives rather than just reflections of loss experience. This is especially clear for insurers who offer the same percentage discount for air bags that protect only the driver and ones that protect the full front seat since losses will be somewhat higher if only the driver receives air bag protection. More generally, the incremental advantages of adding automatic crash protection depend on how often belts would have been used if automatic crash protection were not available. Since manual belt use currently varies widely between states, the uniform national discounts for cars with automatic crash protection must not accurately reflect expected loss reductions by most states.

V. CONCLUSIONS

Increasing belt use is reducing traffic injuries and auto insurance claims and should slow the growth in insurance prices. It already has done so in a few states and should in more as enough data become available for actuaries to determine the reductions occurring in claims payments. The reductions in both injury rates and auto insurance prices should accelerate as automatic crash protection equipment becomes mandatory. Reductions will be even greater if manual belt use continues to increase.

The insurance claim savings are substantial in the aggregate, but rather small when spread uniformly over all policies.

- o In 1987, the rise in belt use above 1984 levels probably saved private and public insurers \$1.5 to \$3.75 billion dollars. A third of this saving went to health, life, and workers' compensation insurers, however, rather than auto insurers.
- o Injury claims account for 40 to 50 percent of auto insurance claims. Rising belt use probably will reduce injury claims costs by roughly 5 to 12 percent. The \$1 to \$2.5 billion savings to auto insurers, if spread across all injury coverages, would cut typical auto insurance bills by 2 to 6 percent -- about \$9 to \$27 annually per vehicle insured.

The savings produced by rising belt use should be used to promote safety as they are passed on to those insured. One way is to reduce insurance prices directly, either voluntarily or through regulation.

- o Four states reduced insurance prices for injury coverages because belt use laws were implemented. The reductions range from 5 to 12 percent -- a 1.5 to 2.8 percent decrease in cost for each 10 percentage point rise in belt use. The average auto insurance bill in these states also dropped approximately 2 to 6 percent, \$9 to \$27 per vehicle insured.
- o Except in Texas, an act of the state legislature, like the ones passed in Hawaii, Iowa, and Massachusetts, probably would be needed to allow the insurance commission to dictate when and how insurers should incorporate the impacts of rising belt use into their prices.

- o Auto insurance prices have been rising very rapidly because claims payments per injury have risen at least 7 percent per year since 1979. If this trend continues, a price reduction related to belt use probably would slow, but not reverse, the rise in overall prices. Publicity that rising belt use has reduced insurance prices may not convince consumers who are paying more for insurance.

Case studies suggest that carefully structured marketing tools that emphasize the savings from belt use may be effective incentives for improved occupant protection.

- o USAA, the nation's ninth largest auto insurer, offered to pay a \$300 bonus to policyholders who buy or take long-term leases on cars equipped with optional air bags in 1988, negotiated creation of and helped finance incentive programs to encourage dealers to market air bags aggressively, and added other incentive coverages.
- o From April 16, 1984 until the end of the 1986 model year, General Motors gave buyers of their cars a free life insurance policy that paid a \$10,000 death benefit if someone was killed in a crash in the car while belted.
- o Health, disability, life, and other insurers also will benefit from the injury cost reductions produced by increased belt and air bag system use. They also should consider how they can promote increased use.

Transportation Secretary Jim Burnley has challenged the insurance industry "to come up with incentives to encourage car buyers to opt for air bags and other safety devices." Insurers should respond to the Secretary's challenge with creative, highly visible programs to promote increased occupant protection through advertising and incentives. Such programs are more likely to be effective than small reductions in standard injury coverage prices.

MOTOR VEHICLE SAFETY STANDARD NO. 222

School Bus Seating and Crash Protection

S1. Scope. This standard establishes occupant protection requirements for school bus passenger seating and restraining barriers.

S2. Purpose. The purpose of this standard is to reduce the number of deaths and the severity of injuries that result from the impact of school bus occupants against structures within the vehicle during crashes and sudden driving maneuvers.

S3. Application. This standard applies to school buses.

S4. Definitions. "Contactable surface" means any surface within the zone specified in S5.3.1.1 that is contactable from any direction by the test device described in S6.6, except any surface on the front of a seat back or restraining barrier 3 inches or more below the top of the seat back or restraining barrier.

"School bus passenger seat" means a seat in a school bus, other than the driver's seat or a seat installed to accommodate handicapped or convalescent passengers as evidenced by orientation of the seat in a direction that is more than 45 degrees to the left or right of the longitudinal centerline of the vehicle.

S4.1 The number of seating positions considered to be in a bench seat is expressed by the symbol *W*, and calculated as the bench width in inches divided by 15 and rounded to the nearest whole number.

S5. Requirements. (a) Each vehicle with a gross vehicle weight rating of more than 10,000 pounds shall be capable of meeting any of the requirements set forth under this heading when tested under the conditions of S6. However, a particular school bus passenger seat (i.e., test

specimen) in that weight class need not meet further requirements after having met S5.1.2 and S5.1.5, or having been subjected to either S5.1.3, S5.1.4, or S5.3.

(b) Each vehicle with a gross vehicle weight rating of 10,000 pounds or less shall be capable of meeting the following requirements at all seating positions other than the driver's seat: (1) The requirements of §§ 571.208, 571.209, and 571.210 (Standard Nos. 208, 209, and 210) as they apply to multipurpose passenger vehicles; and (2) the requirements of S5.1.2, S5.1.3, S5.1.4, S5.1.5, and S5.3 of this standard. However, the requirements of Standard Nos. 208 and 210 shall be met at *W* seating positions in a bench seat using a body block as specified in Figure 2 of this standard, and a particular school bus passenger seat (i.e., a test specimen) in that weight class need not meet further requirements after having met S5.1.2 and S5.1.5, or having been subjected to either S5.1.3, S5.1.4, S5.3, or § 571.210 (Standard No. 210).

S5.1 Seating requirements. School bus passenger seats shall be forward facing.

S5.1.1 [Reserved]

S5.1.2 Seat back height and surface area. Each school bus passenger seat shall be equipped with a seat back that, in the front projected view, has a front surface area above the horizontal plane that passes through the seating reference point, and below the horizontal plane 20 inches above the seating reference point, of not less than 90 percent of the seat bench width in inches multiplied by 20.

S5.1.3 Seat performance forward. When a school bus passenger seat that has another seat behind it is subjected to the application of force as specified in S5.1.3.1 and S5.1.3.2, and subse-

1972, to December 31, 1975, inclusive, shall meet the requirements of S4.2.1.1 or S4.2.1.2, or at the option of the manufacturer, the requirements of S4.2.2. A protection system that meets the requirement of S4.2.1.1 may be installed at one or more designated seating positions of a vehicle that otherwise meets the requirements of S4.2.1.2.

S4.2.1.1 First option—complete passive protection system. The vehicle shall meet the crash protection requirements of S5 by means that require no action by vehicle occupants.

S4.2.1.2 Second option—belt system. The vehicle shall have seat belt assemblies that conform to Standard 209 installed as follows:

(a) A Type 1 or Type 2 seat belt assembly shall be installed for each designated seating position in convertibles, open-body type vehicles, and walk-in van-type trucks.

(b) In all vehicles except those for which requirements are specified in S4.2.1.2(a), a Type 2 seat belt assembly shall be installed for each outboard designated seating position that includes the windshield header within the head impact area, and a Type 1 or Type 2 seat belt assembly shall be installed for each other designated seating position.

S4.2.2 Trucks and multipurpose passenger vehicles, with GVWR of 10,000 pounds or less, manufactured on or after January 1, 1976. Each truck and multipurpose passenger vehicle, with a gross vehicle weight rating of 10,000 pounds or less, manufactured on or after January 1, 1976, shall meet the requirements of S4.1.2.1, or at the option of the manufacturer, S4.1.2.2 or S4.1.2.3 (as specified for passenger cars), except that forward control vehicles manufactured prior to September 1, 1981, convertibles, open-body type vehicles, walk-in van-type trucks, motor homes, vehicles designed to be exclusively sold to the U.S. Postal Service, and vehicles carrying chassis-mount campers may instead meet the requirements of S4.2.1.2.

S4.2.3 (Reserved)

S4.3 Trucks and multipurpose passenger vehicles, with GVWR of more than 10,000 pounds. Each truck and multipurpose passenger vehicle, with a gross vehicle weight rating of more than 10,000 pounds, manufactured on or after January 1, 1972, shall meet the requirements of S4.3.1 or S4.3.2. A protection system that meets the requirements of S4.3.1 may be installed at one or more designated seating positions of a vehicle that otherwise meets the requirements of S4.3.2.

S4.3.1 First option—complete passive protection system. The vehicle shall meet the crash protection requirements of S5 by means that require no action by vehicle occupants.

S4.3.2 Second option—belt system. The vehicle shall, at each designated seating position, have either a Type 1 or a Type 2 seat belt assembly that conforms to Standard No. 209.

S4.4 Buses. Each bus manufactured on or after January 1, 1972, shall meet the requirements of S4.4.1 or S4.4.2.

S4.4.1 First option—complete passive protection system—driver only. The vehicle shall meet the crash protection requirements of S5, with respect to an anthropomorphic test device in the driver's designated seating position, by means that require no action by vehicle occupants.

S4.4.2 Second option—belt system—driver only. The vehicle shall, at the driver's designated seating position, have either a Type 1 or a Type 2 seat belt assembly that conforms to Standard No. 209.

S4.5 Other general requirements.

S4.5.1 Labeling and driver's manual information. Each vehicle shall have a label setting forth the manufacturer's recommended schedule for the maintenance or replacement, necessary to retain the performance required by this standard, of any crash-deployed occupant protection system. The schedule shall be specified by month and year, or in terms of vehicle mileage, or by intervals measured from the date appearing on the vehicle certification label provided pursuant to 49 CFR Part 563. The label shall be permanently affixed to the vehicle within the passenger compartment and lettered in English in block capitals and numerals not less than three thirty-seconds of an inch high. Instructions concerning maintenance or replacement of a system and a description of the functional operation of the system shall be provided with each vehicle, with an appropriate reference on the label. If a vehicle owner's manual is provided, this information shall be included in the manual.

S4.5.2 Readiness indicator. An occupant protection system that deploys in the event of a crash shall have a monitoring system with a readiness indicator. The indicator shall monitor its own readiness and shall be clearly visible from the driver's designated seating position. A list of the elements of the system being monitored by the indicator shall be included with the information furnished in accordance with S4.5.1 but need not be included on the label.