

Approved Tuesday, January 26, 1988
Date

MINUTES OF THE SENATE COMMITTEE ON EDUCATION

The meeting was called to order by SENATOR JOSEPH C. HARDER at
Chairperson

1:30 ~~am~~/p.m. on Wednesday, January 20, 1988 in room 123-S of the Capitol.

All members were present except:

Committee staff present:

Mr. Ben Barrett, Legislative Research Department
Ms. Avis Swartzman, Legislative Revisor's Office
Mrs. Millie Randell, Secretary

Conferees appearing before the committee:

Ref: 1987 SB 179 - School districts, transportation vehicles, passenger safety restraining. (Mulich et al.)

Proponents:

Senator Edward F. Reilly, Jr., member, National Highway Safety Board
Senator William Mulich, co-author of SB 179
Ms. Nancy Bauder, Leavenworth, President, Kansans for Highway Safety
Mrs. Susie Corbett, Nortonville, concerned parent
Mr. John Dunn, Winchester, concerned parent
Mrs. Dorothy Dunn, Winchester, concerned parent
Mrs. Jim Jones, Winchester, concerned parent
Mr. Cliff Heckathorn, Kansas Head Injury Association
Mr. Burdel N. Welsh, Director of Emergency Preparedness, Leavenworth Co.
Kansas Department of Health and Environment (written testimony only)
Dr. Chas. Roberts, Children's Mercy Hospital, K.C. (written test. only)

Opponents:

Mr. Richard Funk, Asst. Executive Director, Kansas Association of School Boards
Mr. Ken Rogg, Legislative Representative, Schools for Quality Education
Ms. Carolyn Kehr, Director of Curriculum and Special Projects, Kansas Federation of Teachers
Mr. Gerald Henderson, Executive Director, United School Administrators of Kansas
Mr. Ed Lindsay, Administrative Assistant, USD 340, Meriden; President, Kansas State Pupil Transportation Association

Following a call to order by the Chairman, Senator Allen moved that minutes of the Committee meeting of January 19 be approved. Senator Arasmith seconded the motion, and the motion carried.

The Chairman recognized Senator Edward Reilly, who told the Committee that there were many people throughout the state who were looking to the Legislature to address the issue of seat belts on school buses. He said that he, too, strongly felt that the Kansas Legislature needs to give some direction in dealing with the issue, whether it be on a local or statewide basis, and whether or not it is mandated. He informed the Committee, however, that as a member of the National Highway Safety Board, appointed by President Reagan, he could not take a stance on the issue, because there were just as many valid arguments against seat belts as for them. In response to a Committee question, he replied that members of the National Highway Safety Board were divided on the matter and that the National Board had never taken a position on the issue.

Senator Reilly submitted for viewing by the Chairman or the Committee two video tapes which, he said, he had recently viewed and which relate to the subject of seat belts on school buses.

CONTINUATION SHEET

MINUTES OF THE SENATE COMMITTEE ON EDUCATION

room 123-S, Statehouse, at 1:30 ~~xxx~~/p.m. on Monday, January 20, 1988

The Chairman then recognized Senator William Mulich, co-sponsor of 1987 SB 179, who commented that he had received many letters on this issue during the interim. One concern, he noted, is the fact that a school bus driver may not be able to adequately oversee that the children are sitting down and buckled up. He also noted that although there is a great concern regarding the cost of installing seat belts, there is a lack of concern regarding the life of a child. In responding to a question, Senator Mulich replied that he was receptive to amending his bill as necessary for passage by the Committee.

Ms. Nancy Bauder, speaking on behalf of the Kansans for Highway Safety, stated the reasons for her support of seat belts on school buses in her testimony found in Attachment 1.

Mrs. Susie Corbett, a parent from Nortonville, stated that she has come to the Kansas Legislature for help regarding school bus seat belt installation, because her local school board is waiting for a decision on the issue by the 1988 legislative session. (Attachment 2)

Mr. Jonn M. Dunn, a parent from Winchester, stated his support for seat belts on school buses in his testimony found in Attachment 3.

Mrs. Dorothy D. Dunn, a parent from Winchester, described how her child was facially mutilated in a school bus accident in her testimony supporting seat belts on school buses. (Attachment 4)

Mr. Cliff Heckathorn, representing Kansas Head Injury Association, described his association as being an advocate for the prevention of head injuries, and he asked the Committee to mandate seat belts on school buses.

Mrs. Nancy Jones, a parent from Winchester, described a school bus accident in which her daughter sustained injury when she testified in support of seat belts on school buses. (Attachment 5)

The Director of Leavenworth County Emergency Preparedness, Mr. Burdel N. Welsh, said that he considers seat belts as the most effective way of preventing potential injuries when he testified in favor of seat belts on school buses. (Attachment 6)

Written testimony only in support of 1987 SB 179 was submitted by the Kansas Department of Health and Environment and is found in Attachment 7.

Written testimony only was received from Dr. Charles C. Roberts, pediatrician, Children's Mercy Hospital, Kansas City, in support of SB 179. (Attachment 8)

Dr. Richard Funk, Assistant Executive Director, Kansas Association of School Boards, explained why the Delegate Assembly of his organization is on record as opposing the mandatory installation and use of seat belts on school buses. (Attachment 9)

Schools for Quality Education legislative representative Mr. Ken Rogg said his organization feels that a decision to mandate school bus seat belts should be left up to the individual school districts. (Attachment 10)

When the Kansas Federation of Teachers conferee testified in opposition to mandating seat belts on school buses, Ms. Carolyn Kehr explained that research has demonstrated that the installation of lap belts may be a detriment to the safety of our children and create problems that actually jeopardize the lives of our young people. (Attachment 11)

CONTINUATION SHEET

MINUTES OF THE SENATE COMMITTEE ON EDUCATION,
room 123-S Statehouse, at 1:30 ~~am~~/p.m. on Wednesday, January 20, 1988

Mr. Gerald Henderson, Executive Director of United School Administrators of Kansas, cited a lack of evidence that buses were safer with seat belts than without them when he testified against mandating seat belts on school buses. (Attachment 12)

The President of the Kansas State Pupil Transportation Association, Mr. Ed Lindsay, cited better training for school bus drivers, increased public awareness, and better instructions of vehicle safety to students as some solutions for improving school bus safety in his testimony against mandating seat belts on school buses. (Attachment 13) Mr. Lindsay also noted that school districts already have the option of whether or not to install seat belts on school buses.

The Chairman thanked all the conferees who had testified at today's meeting and said the matter would be taken under advisement. He then adjourned the meeting.

SENATE EDUCATION COMMITTEE

TIME: 1:30 P.M. PLACE: 123-S DATE: Wednesday, Jan. 20, 1988

GUEST LIST

<u>NAME</u>	<u>ADDRESS</u>	<u>ORGANIZATION</u>
Carl Hill	2900 S Topoka, Topoka	Ks Motor Bureau
Bella Highfill Scott	Topoka	USA
Buch Wilkin	Topoka	AAUP
Connie Beck	Topoka	
Jane Yanally	Shannon Mission	USD #572
Joann Flower	RR2, Box 2 Ocala, KS 66006	
Carol Kehr	4033 SW 34 th St Topoka	Ks Fed of Teachers
Chris Graves	Topoka	ASK
Ruth Meserve	Prairie Village Ks	Ks Coalition For Drug Free Driving
Don Meserve	" "	Guest
Cliff Heckathorn	Topoka	Ks. Head Injury Assoc.
Jim Whittaker	Subetha	Guest
Sally Steff	Topoka	AP
Ken Rogge	Paola	S Q Ed
Connie Hubert	Topoka	St. Bl of Ed
Helen Stephens	USD #500 Topoka	USD #500 - KCK
Craig Grant	Topoka	K-NEA
Jan Collins	Topoka	K-NEA
John M. Dunn	Winchester	Self St. Bl - Sc. Bs
Judy Dunn	Winchester	Self USD #339
Jusie Corbett	Nortonville	Self
Nancy Jones	Winchester	self
R.J. Wilbourn	Topoka Topoka	KDOT
Margie Eklund	Topoka	KDOT

NAME

ADDRESS

ORG

Gerald W. Henderson
Ed Embury
Richard S. Lunt

Topelva
Meriden
Topelva

USA
KSPTA
KHSB

SENATE EDUCATION COMMITTEE

TIME: 1:30 P.M. PLACE: 123-S DATE: Wednesday, Jan. 20, 1988

GUEST LIST

NAME

ADDRESS

ORGANIZATION

ROD HAME

TERESA

KASB

Testimony to be Delivered to
THE KANSAS SENATE EDUCATION COMMITTEE
January 20, 1987

by Nancy Bauder, President
Kansans for Highway Safety

SEAT BELTS ON SCHOOL BUSES

On behalf of Kansans for Highway Safety, I ask that you support legislation requiring safety belt installation on all newly-manufactured school buses. We are in favor of legislation because as well as providing school bus passengers with added restraint protection, educational value can be provided which may save lives in automobile collisions, the number one killer of children.

With several states' passage of mandatory seat belt laws, more and more parents are demanding that the safety belt be provided to children on school buses, where they ride from one to two and one-half hours per day, to school and on field trips, both for their personal safety and the carryover benefit of that habit to automobile usage. This habit can be encouraged, rather than hindered by the school system.

Even though many states have mandatory usage laws, we ourselves decide whether to buckle up for safety. Our children do not have that choice in a school bus. We parents, educators, physicians, and responsible citizens are only asking that that opportunity be provided.

Why does this safety education need to be provided?

- Automobile rear seat fatalities increased by 12% last year (1986).
- Five times the fatalities occurred when passengers were unbelted rather than lap-belted.
- One-half of all passengers who died in the rear seats of vehicles were under 19 years of age (768 children).
- One-fourth of all passengers killed were under the age of 19 years (5500). Of those fatalities, 4200 were unrestrained.
- According to a University of Michigan study, as reported to the Insurance Institute for Highway Safety: Safety belt usage rates are the lowest among children ages 4 to 15 years. According to the US Department of Transportation, in 1986, child restraint in automobile usage is at 52% for ages 0 to 5, but drops to 20% for 5 years and older.

THE SCHOOL BUS AS THE SAFEST VEHICLE?

The school bus has been called the 'safest' form of transportation by the school bus industry. How safe is it?

School bus injuries when compared to all vehicle injuries, compare favorably when one looks at information supplied by the National Safety Council. However, the figures stated of approximately 7000 injuries and 10 fatalities per year do not usually include collisions which occur on field trips. The only way to accurately assess school bus statistics fairly would be to compare bus collisions to automobile collisions which occur during the hours of 7 to 9am and 2 to 4pm which is the time school buses usually run.

Bus collisions should also be compared to automobile collisions which occur to and from school. To compare bus collisions to and from school with other vehicle collisions that occur on the highway and at night (as most vehicle injuries and fatalities occur) is unrealistic.

WHAT ABOUT COMPARTMENTALIZATION?

In 1967, a major study on school bus construction and safety features was conducted at UCLA. The term 'compartmentalization' was first used in that study, and referred to a recommended 28 inch high seat back and a padded side arm, and seat belts to reduce the injuries sustained by passengers hurled against one another. Kansas meets the federal requirement of 24 inches now required. Even with a higher seat back it is a myth that compartmentalization provides sufficient protection. There is still no protection from injury in a side or rollover collision. We need to provide passengers a way to remain in the 'compartment' and in their seats during a collision.

In 1977, Federal standards of higher backed, padded seats and improved bus structure were a step toward safer buses, and have indeed greatly reduced fatalities, but thousands of injuries to children in bus crashes continue to occur every year. Injuries reported include minor: contusions, concussions, abrasions, fractures, and lacerations to the head and extremities; and major: abdominal injuries, head, neck, and back injuries, and amputations. These injuries occur as students strike the roof, windows, seatbacks, and other students. In addition to collisions and rollovers, passengers are injured during sudden stops and turns and while hanging out of windows. There is clear evidence that seat belts will hold passengers in seats during stops, turns, and evasive maneuvers, thus protecting them. Children belted in place will also have difficulty sticking their heads and arms out of windows.

Compartmentalization is the most effective in the head-on collision. However, a case in Reno, Nevada, last year showed that compartmentalization does not always work: 82 children were injured when a 90 passenger bus ran into another bus when the brakes failed. The children noticed the

driver was having problems getting the bus stopped, so they all stood up to see what was wrong. They were out of the 'compartment' and bounced all over the bus when the collision occurred. This one collision utilized all the medical and emergency resources in the entire community and tied up traffic for hours. According to medical personnel, it is probable that the majority of these injuries would not have occurred, had the passengers been restrained.

LIABILITY AND COST?

The liability question is one that is always raised by school districts considering requiring belts on school buses. Is the driver or district liable if a passenger's belt is not fastened and he is injured? The New York School Bus Safety Belt Law contains a clause which absolves liability in this instance. Nationwide, there have been many lawsuits regarding bus-related injuries. Many of these suits have been filed because of lack of occupant restraints, and have netted the victims and their families hundreds of thousands of dollars.

The average cost of a school bus is around \$40,000. The average cost of belt installation is approximately \$1200 per bus. The cost of medical care resulting from one collision is often greater than the cost of belts for the entire fleet.

HOW HAS THIS ISSUE BEEN STUDIED?

1. UCLA 1967 Crash Test recommended: "all buses be equipped with restraint systems...Restraint within the seat area is essential for injury minimization."

2. Transport Canada School Bus Crash Test (Released, 1985): Head Injury Criteria levels in belted crash test dummies in large school buses were lower than those deemed by the Department of Transportation to cause serious injury. The only dummy who "died" on the large school bus was unbelted.

3. The National Highway Traffic Safety Administration, 1985: SAFETY BELTS IN SCHOOL BUSES - "In side impact and rollover, the use of seat belts are likely to provide additional safety."

4. Dr. John States, University of Rochester School of Medicine, Chairman, Dept. of Orthopaedics, Rochester, NY (3/3/87): "My statements are based on a lifetime experience as a practicing orthopaedic surgeon, a researcher in motor vehicle accidents and a designer of safety belt systems. My own research and my knowledge of the traffic safety and biomechanics literature reveals that safety belts in school buses will provide additional crash protection particularly in side impact and rollover accidents...School bus safety belts will reinforce the habit of safety belt use."

NATIONAL ORGANIZATIONS SUPPORTING BELTS ON SCHOOL BUSES:

The American Medical Association
The American Society for Adolescent Medicine
The American Assn. for Oral & Maxillofacial Surgeons
The American Academy of Pediatrics
The American College of Preventive Medicine
The Center for Automotive Safety
The National Parent Teachers Association
Physicians for Automotive Safety
The National Coalition for Seatbelts on School Buses

STATE ORGANIZATIONS SUPPORTING BELTS ON SCHOOL BUSES:

Kansans for Highway Safety
The Kansas Department of Health & Environment
The Kansas Coalition for Drug-Free Driving
The Kansas Head Injury Association

Seat Belts on School Buses
By Susie Corbett
a voting parent

Isn't it ironic:

The issue of seat belts has been stamped "emotional" by some people. Since September, 1987 parents in the Nortonville-Winchester School district #339 have been working towards getting seat belts on school buses. The only emotional response I have witnessed has been from a few Bus Company representatives and some school bus drivers that are opposed to seat belts.

Isn't it ironic:

When we wrote to our legislators for help, Senator Nancy Kassebaum wrote us back and told us to go to our local school board. We went to our school board and they want to wait for the decision of the '88 Session. Our children are in a political vacuum.

Isn't it ironic:

The Department of Transportations Testimony in the 1987 Legislation Session said "Since seat belts could not be installed with shoulder harnesses they couldn't approve" (my own paraphrasing). The school board members we talked to said that shoulder harnesses could not be installed. In the Sun Newspaper, Dec. 9, 1987, Pg. 12A, Don Kincaid, President of School Services and Leasing of Merriam, Kansas was quoted as saying "Adding seat belts with shoulder harnesses to existing buses could cost about \$5,700.00 per bus because it would require new seats." Shoulder harnesses can be installed, call Don and talk to him.

Isn't it ironic:

When we approached our local school board for the second time imploring them to put seat belts on school buses; they wanted to know by what standard and what requirements were needed to do so. New York has a mandatory seat belt law for Type I school buses. Vermont has more than 25 school districts that have voluntarily put seat belts on their school buses. Chicago has seat belts on Type I school buses. It appears some school board members know how to put seat belts on with some sort of standard. Our school board doesn't. That's why we need you. Help these Kansas school boards to know what the necessary requirements are.

Isn't it ironic:

By law, mini vans (school buses that are 10,000 lbs. gross weight or less) are required to have seat belts. Type I school buses absorb more impact than a mini van, yet occupants are "probably not safe with a lap belt," according to the National Traffic Safety Board Crash Test Study. The size and structure of these two types of buses are different, but the seat size and distance between the seats are the same. The crash test studies don't apply to mini vans, only Type I school buses.

Isn't it ironic?

The NTSB studied 43 serious school bus accidents for 29 months. Approximately 14 states did not even report and other states do not include injuries from field trips or sport activity. Minor and moderate accidents were eliminated from this study also. Hundreds of children are maimed and scarred permanently from minor and moderate injuries from minor and moderate accidents. This study uses the word "probably" in it's concluding sentence on this issue.

Isn't it ironic:

The Canadian Crash Test Study did not have every dummy seat belted. They attached HIC instruments to only "some" of the dummies. The National Highway Traffic Safety Association has even advised people not to take this study seriously.

Isn't it ironic?

The UCLA Bus Crash Test Study back in 1967 recommended structural changes, extra padding, and individual restraints. This study stated implicitly that this should be done despite the cost. Structural changes and extra padding have been implemented. The seat belt suggested has been outright ignored.

Isn't it ironic!

We parents have had school boards evade our requests and offer lame excuses instead. We have had legislators wave crash test studies in our faces and expect us to accept them. Crash test studies that are inconclusive, seriously lacking in methodology, and negligent in their fact finding. We have been expected to accept these illogical results. We may not be senators or representatives, but that doesn't mean we do not have intelligence. We have read the crash test studies and are as capable of drawing a conclusion from them as you are. We find these studies seriously flawed.

It's a shame when a political issue is no longer right or wrong. It's who has the highest paid lobbyist--that is going to win. It's how much money is this issue going to cost--that loses. That doesn't correct the FACT that every day children are riding on Type I school buses all over the country. There is absolutely no protection overhead or on the side. They are at the mercy of being catapulted into the impact area. We are here pleading for this protection because our school boards won't do what we parents want.

Isn't it ironic!

Very Sincerely,

5. National Highway Traffic Safety Administration, Feb. 1986, SCHOOL BUS SAFETY BELTS: THEIR USE, CARRYOVER EFFECTS, AND ADMINISTRATIVE ISSUES: "Administrators, transportation directors, and drivers reported improved behavior on buses equipped with belts... and experienced fewer distractions in belt-equipped buses than in non-equipped vehicles."

6. K. Weber, MA, and J. Melvin, PhD, University of Michigan College of Engineering (1/23/86): "We firmly believe that newly purchased large school buses should be equipped with lap belts."

7. Dr. Arnold Siegel, Forensic Consultant, Trauma Research Group, Encino, CA (10/2/86): "For school buses, the seat belt angles related to the pelvic area of a child are close to ideal due to the seat design, the seat height from the floor, and the location of the belts to the seat horizontal frame bar."

8. M. Spital, BA, A. Spital, MD, and R. Spital, PhD, from Community Services, University of Rochester School of Medicine, Rochester, NY, and Columbia, MD; PEDIATRICS (American Academy of Pediatrics Journal), 11/86: 'The Compelling Case for Seat Belts on School Buses': "There is strong evidence that seat belts would increase the safety of school buses."

9. The National Transportation Safety Board School Bus Crash Study, March 1987. After at least 13 prior recommendations for seat belts on school buses, the NTSB now alleges that the post standard bus seats are adequately protecting school bus passengers without seat belts. However, there has not been any substantial reduction in injuries or changes in injury patterns from pre-standard buses. The study of 43 hand-picked collisions showed no comparison between belted and unbelted passengers. Only the 39 accidents involving unbelted buses were evaluated.

EXPERIENCE OF DISTRICTS

Discipline generally improves when seat belts are on the bus. A study by the National Highway Traffic Safety Administration, February, 1986, showed improved behavior in buses equipped with belts. All of the transportation directors in the study, even those initially opposed to the trial belt programs, supported decisions to equip their entire fleets with belts. The calmer climate produced by seat belt usage allows drivers to concentrate better on their driving and observe more carefully the students in the danger zones outside the bus. The TYPE of belts used have been a problem in certain districts. Long black belts with removable buckles are not recommended because vandalism, and tripping hazards. A shorter belt, color-coded, with a safer, push-button buckle is recommended, and more readily used.

Statement by John M. Dunn

I am here to ask for your support for a law mandating the placement of seat belts on all Kansas school buses. I find totally unfair that we in our private vehicles are instructed by law to wear seat belts, and thousands of children are each day left unprotected while riding school buses weighing over ten thousand pounds.

From our small survey in Jefferson County, we find that ninety percent of the people want seat belts for our children, but just try to get that many people to come to Topeka and say that, let alone simply write a letter to that effect. Just because our party today is small in numbers, there's a great many people in this state we feel, who do want seat belts on school buses.

The schools provide face masks, knee pads, and shoulder pads for a number of children involved in sports so I believe we can easily provide quality safety restraints for transporting our children in to receive academic training. Our child was on a 22-passenger bus which was replaced by a 19-passenger bus that is required by Federal Law to have seat belts. Her rights were denied because her bus weighed

approximately 2,500 pounds more. The children riding the 19-passenger have the protection there for them. There's not an adequate reason why she doesn't deserve the same protection as others in a bus with three less seats. The fact is that belted children in smaller buses have done better in accidents than unbelted children in the same kind of vehicles. It stands to reason that belted children in larger buses would also be protected at a higher rate. We do not need to wait longer and have more children needlessly injured.

So many studies have been done over the past several years, some for, some against. To me, a common sense approach is needed after spending millions of dollars on studies leading to no firm decision. WE have been mandated to wear belts in what seemed like an over night decision so why can't our children also now have the same protection?

Thank you,

Statement by Dorothy D. Dunn

I would like seat belts on school buses because my child had none available this past year during a school bus accident causing her to require 150-200 stitches for facial mutilation. Our daughter as a passenger was sitting on the left side directly behind the bus driver away from the impact which was on the right side of the bus. If she had been in a seat belt as the bus driver was she would have remained in her seat on the left side of the bus.

I am not talking because of emotions but because omission of seat belts for our children is unfair. If you want to see emotions, go to the hospital and wait while they X-ray your child for skull fractures and broken jaw simply because a seat belt was not provided for them in a moving vehicle. Our laws should not be written for just one person or adult on a school bus but for the protection of all; including our children.

Our child was not the only one to be thrown in the school bus accident February 25, 1987. There is absolutely nothing to hold them in their seats and I believe it is time to change the double standard; one for the public school transportation and one for citizens in their own vehicles. If cars, trucks, airplanes, semi's and bus drivers need belts and are required by law to have them then certainly school buses with small children whose feet do not even touch the floor also need to have the same privilege.

Why should I as a citizen pay for an adult's seat belt on a school bus through taxes and leave my own child open to severe mutilation. I will not do it again.

The bus accident in our district left two girls with facial scars and in the adjacent county a small girl was left without an arm. These injuries would not have had to happen if the children had been provided a seat belt. 'If Lori would have stayed in her seat she would not have been injured as she was,' her doctor told us.

We have ask our school board for seat belts but their answer was, "We will wait for the 1988 Legislators to answer". This issue needs to be resolved for the safety of our children.

Let's get this great State started now to include protection for all the children as well as the adult on each school bus. Please protect our children when they are taken from our homes by a public entity and provide adequate safety restraints for them.

Thank you,

Attachment 4, 1/20/88

I am here because of my children. I have two who ride the school bus twice a day, 5 days a week. They also ride out of town every other week for games. They ride the bus out of town on planned school field trips an average of 2 or 3 times a year.

My daughter was riding a school bus which slid into the ditch because of icy weather conditions. She was thrown causing a raised bump on her shoulder. I know a seat belt would hold them in their seats as it does in our own vehicles of which I have also had an experience.

I would like to see the children have the same right and protection I have. The seat belt law in Kansas protects school children's parents. The law protects our bus drivers, so much more it should protect my children and yours.

Sincerely,

Mrs. Jim Jones

Attachment 5, 1/20/88

DATE: January 19, 1988
TO: Senate Education Committee
FROM: Burdel N. Welsh, Director
Leavenworth County Emergency Preparedness
RE: Safety Belts on School Buses

Dear Chairperson and Committee Members:

Last year, I had the honor of addressing your committee as a Deputy Sheriff with 12 years in law enforcement. This year, I come to you as the Director of Emergency Preparedness for Leavenworth County.

Although my job titles have changed, I am still concerned, as you are, with the health and safety of children as they travel on school buses to and from school and other activities.

As a Deputy Sheriff, I worked in accident investigation, safety and coordinated an extrication unit for seven years. What I saw convinced me that safety belts do save lives and reduce injuries, both in automobiles and school buses.

In 1986 (last year available), 45 injuries were reported in Kansas for accidents related to school buses. Time and time again, I hear that the problem is not large enough to warrant action. However, our flawed reporting system allows many cases to go unreported. In 1986, I responded to one accident where 29 children were injured and transported by ambulance. However, this was not included in the yearly total because these children were on a field trip, not en route to or from school.

I recognize that safety belts will not prevent all injuries or fatalities, as not all accidents are survivable. Opponents also argue that safety belts will in some cases only help half of the occupants, such as in a side-impact rollover. While I question the validity of that limitation, I would gladly see the potential injuries reduced by half through the use of safety belts.

As 90 passenger buses are put into use, the danger and potential for multi-casualty situations grows. While school buses are the safest mode of transportation, when one is involved in an accident, the potential for a large number of injuries or deaths is there.

As an Emergency Preparedness Director, I must plan to reduce injuries and deaths and to prepare plans that will help to handle these situations. In the case of transportation and school bus accidents, I consider seat belts the most effective way of preventing these potential injuries.

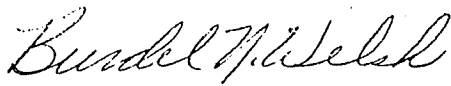
Page 2
Burdel N. Welsh

Safety belts must, however, be combined with other programs to be most effective. Things like driver and student education on safety belts, the stop arm law and other safety programs must be continued and expanded to provide a complete safety program.

Safety belts, like other programs, have failed in some areas because of improper installation and lack of educational programs. In schools where education is the prime directive, why should seat belt education be overlooked?

Your consideration and support for safety belts on school buses and the appropriate educational programs is greatly appreciated.

Sincerely,



Burdel N. Welsh
Director
Leavenworth County Emergency Preparedness

Testimony Presented to
Senate Education Committee

by

The Kansas Department of Health and Environment

SENATE BILL 179

School buses are the safest form of surface transportation, transporting some 21 million children to and from school each weekday. Nationally in 1983, there were 69 school bus related fatalities: 50 deaths were outside the bus as pedestrians; 2 were school bus drivers; and 17 were on-board school bus passengers. In Kansas, according to Kansas Department on Transportation, in 1985 there were 22 passenger injuries reported, with one incapacitating injury. These figures drastically increased in 1986 with 53 school bus passenger injuries and 13 incapacitating injuries.

Because of the greatly increased public discussion on the need for occupant protection in automobiles (i.e., safety belts and automatic protection devices), as a result of many states considering and passing mandatory safety belt use laws, and because all 50 states and the District of Columbia now have mandatory child passenger safety laws, the issue of safety belts on large school buses has become a topic of much discussion. Preventable injuries are the primary issue.

Since 1984 over 200 school districts in the United States have installed seat belts in some or all school buses. In Kansas, Hays USD 489 ordered a large (66 passenger) bus with seat belts and Shawnee Mission USD 512 is conducting a pilot project using belts in large buses.

Currently van-type school buses (under 10,000 pounds gross vehicle weight) are required, the same as passenger cars, to have safety belts. These small school buses respond in a crash in a similar manner as cars because of their weight and design. The majority of Kansas school districts have at least 1 bus weighing more than 10,000 lbs that is equipped with safety belts.

Fifty percent of the occupant fatalities in school buses occur in rollover accidents and 14.7 percent of the occupant fatalities occur in side impact accidents. It is in these types of accidents that safety belts might be most likely to provide additional safety benefits to school bus occupants. One reason for this is ejections, which could be prevented by belts.

National Highway Traffic Safety Administration reports that the majority of school bus accidents can be attributed to driver inattention. Conduct improves on buses with safety belts according to the school bus seat belt coalition, cutting down on distractions and increasing concentration on the part of the driver.

It costs an additional \$1,500.00 per bus to include seat belt installation on new buses. It is estimated that in Kansas 450-500 persons are permanently and severely disabled from motor vehicle accidents with head/spinal injuries each year at an estimated cost of \$2,500,000 per lifetime per case. The cost to Kansas for all accidental deaths for one year is \$650,000,000 or an average of \$516,666 per accident. While child restraint and mandatory seat belt laws have been enacted in Kansas, the state does not require seat belts in school district vehicles.

The AMA and American Academy of Pediatrics support the concept of seat belts in school buses.

New information refutes the 1984 Canadian Crash tests which asserts use of seat belts would increase risk of injury. According to John States, M.D., Chairman, New York Coalition for Safety Belt Use, Inc. "Buses will not increase the risk of injury for school children using the lap belts, but will actually reduce the risk. The educational benefits to the school children are the principal reason for the installation of seat belts in school buses. It is essential that children learn this habit, which in the future will almost certainly protect them from a disabling injury and, possibly save their lives. Children are now entering school having worn child restraints while traveling in their parents' cars. It is essential that they can continue this habit while riding in our school buses." (December, 1985)

We recommend passage of S.B. 179 on the basis that all vehicle occupants should be properly restrained, whether with a seat belt or an infant/child restraint system.



TWENTY-FOURTH AT GILLHAM ROAD
KANSAS CITY, MISSOURI 64108

In Affiliation with The University of
Missouri-Kansas City School of Medicine

Section of Pediatric Gastroenterology
Charles C. Roberts, M.D., Chief
Charles Hodge, M.D.
(816) 234-3016

January 18, 1988

To Whom It May Concern:

I have been asked to write this letter concerning the use of seat belts on school buses. I am very happy to do so. It is not possible in a brief letter to state all of the reasons for the use of seat belts in school buses, or to adequately debate the issues; but it does present an opportunity to ask a question. Why is there so much resistance to seat belts in school buses? I don't pretend to know the answer to that question, but I do think it's one that should be asked by everyone involved in the issue.

Today's large school buses are designed with a compartmentalization concept. It is important to remember that this concept is based on a study done in UCLA in the 1970's, a time when seat belt usage in this country was very low and the value of seat belts was not generally appreciated. Nonetheless, the UCLA study recommended the use of seat belts; but this was not adopted when standards were set.

Compartmentalization is supposed to protect children by keeping them confined in a compartment that is padded for their protection. Assuming that the children are sitting and not standing outside of their compartment, this simply allows them a small space to be thrown about. It should be pointed out that neither the sides of the bus, nor the children themselves are padded. In the past few years, there has been a suggestion that seat belts will actually increase the risk of injury to students. The studies cited are flawed, and the conclusions insult our common sense. Clearly, a properly restrained child is at less risk of injury than one who is loose in a small compartment with padding only in the front and rear.

Although unsupported, I suggest that there are two additional benefits besides the obvious restraint offered by the belt. Many accidents associated with school buses are related to driver problems. There are good studies to indicate that children restrained in car seats or seat belts in the family automobile are better behaved than those that aren't; could this also be true in school buses? Driver mistakes might be minimized by the use of seat belts, and this might then prevent some of the tragic accidents that occur outside of the school bus.

Attachment 8, 1/20/88

Page 2

Re: Seat Belts on School Buses

Although there are too many children killed and injured on school buses each year, the number is small compared to the number of children killed in automobile accidents. The use of seat belts is not an instinctive phenomenon. People need to be taught to use their seat belts. They need to understand the reason that they are used. Is it possible that the mandatory use of seat belts in school buses would save the lives of teenagers who now drive their own cars without the use of seat belts?

Getting back to my original question, it is argued that seat belts on school buses are dangerous. I totally reject this argument, however, if I am wrong, does that mean that the concept of compartmentalization is a sound one? It doesn't. It means that school-buses need to be completely redesigned so the children riding in the school buses can be properly restrained with either the use of higher backed, more widely spaced seats, and lap belts, or designing the bus with lap and shoulder harnesses.

Cost effectiveness is the only argument that I can understand. Yet, I don't think people are that concerned about the cost of installing lap belts. I think they are concerned about the cost of completely redesigning the inside of the school bus. This would indeed be a significant cost to the school bus manufacturers and also to school districts. In considering the cost, two additional questions need to be asked. Why shouldn't parents be afforded the opportunity to have their children ride belted in school buses? What is the cost of a child's life given away?

Sincerely,



Charles C. Roberts, M.D.
9722 Briar
Overland Park, KS 66207

CR/dt

cc: Senator Joseph Harter

KANSAS
ASSOCIATION



OF
SCHOOL
BOARDS



5401 S. W. 7th Avenue Topeka, Kansas 66606
913-273-3600

SENATE EDUCATION COMMITTEE

S.B. 179

by

Richard Funk, Assistant Executive Director
Kansas Association of School Boards

January 20, 1988

Mr. Chairman and members of the committee, we appreciate the opportunity to testify today on behalf of the 302 members of the Kansas Association of School Boards. KASB is opposed to the provisions found in S.B. 179. The Delegate Assembly of the Kansas Association of School Boards is on record as opposing the mandatory installation and use of seat belts in school buses.

Aside from the many arguments concerning the inconclusive studies regarding the safety aspects of seat belts, there are also some very practical considerations. School districts must decide whether or not to make seat belt use mandatory for riders. If it is mandatory, compliance monitoring becomes a problem. Seat belts can be cut or partially cut and then must be replaced. Nationally, many school districts that have seat belts in their buses also may charge a fee for bus transportation to help defray costs. Some school districts are removing student seat belts previously installed.

Remember that school bus safety doesn't just happen because we mandate seat belts. It is a shared responsibility of many people including school officials, bus drivers, community members, parents and the students. It also involves all other drivers of motor vehicles. We are dealing with inconclusive evidence. Hard, factual data is not available. Let's not deal with this issue on emotion. School bus transportation is among the safest forms of transportation available today. Everyone works very hard to keep it that way. Seat belts have had very little to do with it.

Attachment 9, 1/20/88



Schools for Quality Education

PURPOSE . . .

To Pursue the quality of excellence in education.

To Give identity, voice and exposure to the peculiar quality of Rural Schools.

To Enhance the quality of life unique in the rural community.

Presented to
Senate Committee on Education
Regarding
Seat Belts on School Buses

by

Ken Rogg, Legislative Representative
Schools for Quality Education

Attachment 10, 1/20/88

“Rural is Quality”

Today, some 21,500,000 youngsters will board 390,000 school buses logging some 3,000,000 miles to and from school, athletic events, field trips, etc. Since 1977, an average of 12 fatalities a year were suffered by school bus passengers while an average of 66 occurred outside the bus. It is safer to ride a school bus than any other mode of transportation. Nevertheless, there is a growing grassroots movement to require mandatory installation of seat belts on school buses. Failing to gain that objective at the National level, the debate has now moved to the State arena.

According to studies by the National Highway Traffic Safety Administration, Canadian Ministry of Transport, and the National Safety Board, there is not sufficient justification to recommend or require seat belts on large school buses. On the contrary, sled tests indicate the probability of a greater incidence of head injuries when seat belts are worn.

While it cannot be argued that seat belts save lives in automobiles and trucks, these vehicles do not contain the built-in safety factors (compartmentalization).

As to the educational or carry-over benefits claimed by supporters of seat belts on buses, we believe this topic too subjective to draw any firm conclusion. While some districts report few problems in rider compliance and discipline, others report the opposite. (See letter, last page.)

A study by a school district who wishes to remain anonymous until their investigation is complete, has found:

1. Retro-fitting of existing buses would cost \$30 per belt.
2. There is insufficient roof reinforcement in buses of current production to support shoulder restraints.
3. Only one bus company is currently studying roof reinforcement to support shoulder straps.
4. The company providing buses to this district by contract question liability responsibility if seat belts are added. The district may be required to carry their own insurance, adding to the cost.

Following release of the Canadian study, S.Q.E adopted a policy opposing mandatory seat belts on large buses until such time as further tests support the feasibility of adding seat belts, or are recommended at the National level.

We believe that decision should be made at the local level, taking into consideration such local conditions as traffic density, roads, and terrain.

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Status Report

Vol. 20, No. 5

May 11, 1985

A Special Issue

SCHOOL BUSES AND SEAT BELTS

Every school day throughout the U.S., 390,000 school buses log some three million miles transporting 21,500,000 youngsters to and from classes, athletic events, and field trips. Almost always the trip is routine, and the children arrive without mishap. But is school bus travel safe enough? A growing number of parents, aware of the safety advantages of wearing seat belts in passenger cars and trucks, are questioning why most school buses are not equipped with seat lap belts for their children's protection. Now a grassroots movement wants to require school districts across the country to add lap belts to their shopping lists when purchasing new buses. Others contend such an action is unwarranted and may create more injuries in bus crashes.

This special issue of Status Report examines this subject and other matters relating to school bus safety: where the injuries occur, what the research reflects, and the measures that will help reduce deaths and injuries.



The Insurance Institute for Highway Safety is an independent, nonprofit, scientific and educational organization. It is dedicated to reducing the losses—deaths, injuries and property damage—resulting from crashes on the nation's highways. The Institute is supported by the American Insurance Highway Safety Association, the American Insurance Highway Safety Alliance, the National Association of Independent Insurers' Safety Association and several individual insurance companies.

School Buses and Lap Belts

About 18 school districts throughout the country now require new school buses to be equipped with lap belts, and many more are considering such a rule in response to parent groups that are lobbying state capitols and school boards.

Carol Fast, founder and president of the National Coalition for Seat Belts in School Buses, says the movement is growing rapidly. "The issue is timely," notes Fast, crediting new child restraint laws for the interest. She says her group has 40 regional coordinators with coalitions set up in nearly every state.

Some children entering first grade have always traveled restrained in child safety seats or safety belts, Fast says. When they get on buses that are not equipped with belts, they become "apprehensive," and their parents become apprehensive as well. "They know that it's a good thing to wear belts in cars," reminds Fast. "And they don't understand why there are no belts in buses."

In 1973, when the National Highway Traffic Safety Administration (NHTSA) began formally considering improving school bus safety standards, the agency proposed raising the backs of seats to a height of 28 inches, about the same height as an extended head restraint in a passenger car. NHTSA also said it would consider requiring lap belts. (See *Status Report*, Vol. 8, No. 5, Feb. 26, 1983.) A requirement for combination lap and shoulder belts was, and still is, considered not feasible.

In 1974, NHTSA abandoned the lap belt option. Citing "practical objections" raised by the majority of groups commenting on the standard. NHTSA said it "determined that a passive system of occupant containment by the seating system or a restraining barrier offers the most reliable crash protection in a school bus situation."

By raising the backs of seats, making them more yielding, and requiring padding to protect a child's knees, torso, head, and face, NHTSA engineers believed that the crash load would be spread more evenly over a child's body.

The use of a lap belt, however, could cause the child to double over the belt in a frontal crash, pivoting forward and striking his or her head on the back of the seat in front. Such an action would concentrate the force of the crash load on the child's face and head, which would increase the risk of head injury. Nevertheless, the agency said it would require the installation of belt anchorages in case school districts wished to install them.

By 1976, when the final school bus occupant protection rule, Federal Motor Vehicle Safety Standard

(FMVSS) 222, was issued, the height requirements for the backs of seats were reduced eight inches to 20 inches, and all provisions for belt anchorages were gone. In a *Federal Register* notice, NHTSA said tests by AMF Corporation indicated that the lower seat back height would provide "sufficient compartmentalization" for occupants. The seat back height was lowered because bus operators said they would not be able to watch the pupils with the higher seats.

As for lap belt anchorages, NHTSA said that in view of comments from bus manufacturers and operators questioning their utility, that the agency would not require their installation. The notice indicated NHTSA intended to study the matter further and that in the meantime, lap belts could safely be attached to the seat frame by the users. But for smaller buses under 10,000 pounds, NHTSA required that they be equipped with lap belts. The reason for that, said NHTSA, was their smaller size could result in much more severe crashes.

In 1978 NHTSA conducted sled tests of belted and unbelted dummies and observed that belted dummies experienced a violent whipping effect that warranted further study. Subsequent petitions for reconsideration of FMVSS 222 filed by Physicians for Automotive Safety (PAS) and Action for Child Transportation Safety were rejected by NHTSA in 1981 and 1983, without additional tests.

The physicians' and parents' groups question the efficacy of those tests and subsequent tests performed recently by the Canadian Ministry of Transport. However, the chief value of seat belts in school buses, they argue, is educational.

'It's a Very Emotional Issue'

Some pupil transportation supervisors have questioned whether riders will use lap belt buckles as weapons, and others have been skeptical about getting children to use the lap belts without having a monitor aboard the bus. In reality, districts that have installed lap belts do not report them being used as weapons. A spokesman for the Greenburgh Central School District in New York, where lap belts have been required since 1978, says that drivers report students who refuse to follow the belt use rule to school officials, making monitors unnecessary.

"It's a very emotional issue," Fast admits. It has pitted parents and physicians against NHTSA, bus owners, bus drivers, and school fleet administrators.

Fast says her group is willing to trade off less protection in frontal impacts to gain more protection in side impacts and rollovers. Data showing that belted dum-

mies fare worse than unbelted dummies in frontal impacts are presented out of context, she said.

"It's a very awkward situation," a NHTSA official told *Status Report*. "It gives us butterflies. We can't really argue with the concept of establishing better belt habits in children," but, he adds, the possibility of exacerbating head injuries in frontal impacts makes the agency reluctant to endorse seat belts for school buses. "We'd like to leave it open to the local jurisdictions," he concludes.

School bus safety has been a matter of concern to the National Transportation Safety Board, which has over the years examined bus crashes in depth. In 1983, following its study of a prestandard bus crash in Arkansas, the safety board said it believed that most school buses will be of poststandard vintage by 1987. The board is conducting an evaluation of post - 1977 school buses of all sizes to ascertain the effectiveness of bus safety standards.

The board concluded: "because preliminary analysis indicates that these standards appear to be effective in eliminating or substantially reducing the majority of school bus passenger injuries, the safety board does not believe there is sufficient justification at this time to recommend" the mandatory installation of lap belts in large school buses.

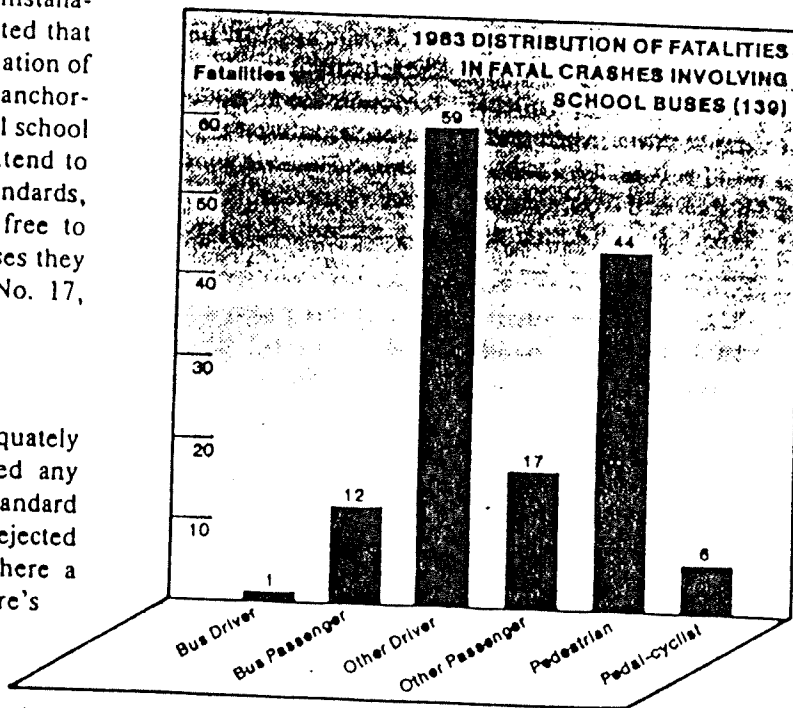
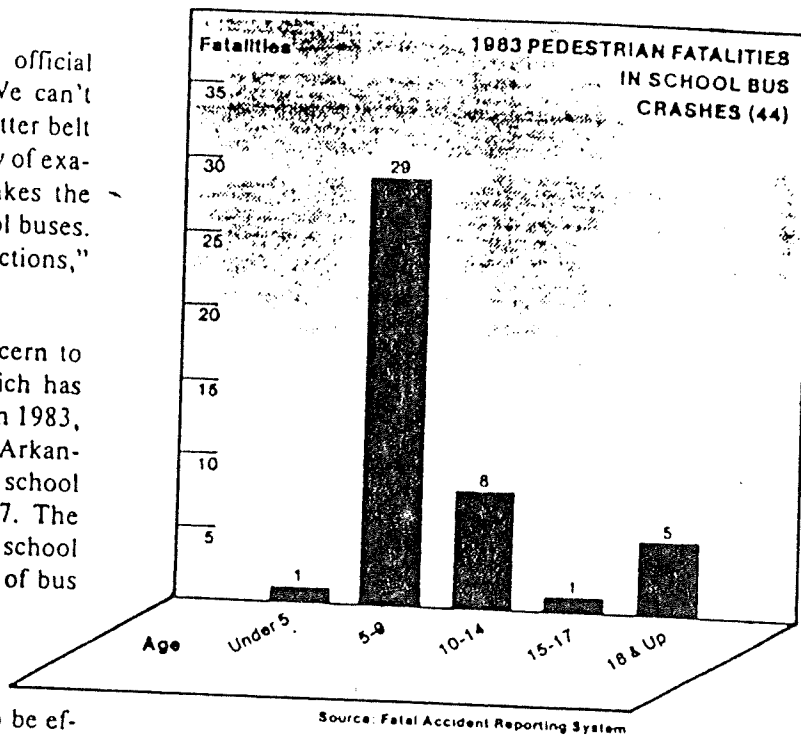
When in 1983, NHTSA chief Diane Steed rejected the latest PAS petition seeking the mandatory installation of belt anchorages in large buses, she noted that the safety board did not recommend the installation of belts and added that if the agency mandated anchorages, it would "impose a financial burden on all school bus purchasers, regardless of whether they intend to install belts in the buses. Under the present standards, districts...that want belts in their buses are free to order buses with belts or to install them in buses they already own." (See *Status Report*, Vol. 18, No. 17, Nov. 22, 1983.)

'They Don't Want Any Injuries'

Fast and other critics say NHTSA hasn't adequately studied the issue. NHTSA has not conducted any rollover or side impact crash tests of poststandard buses, Fast notes. Children are being partially ejected through windows, says Fast, citing a case where a child's arm was nearly cut off in an impact. "There's no 'compartmentalization' in a side or rollover crash," observes Fast.

Parents are reluctant to accept assurances that belts are not necessary, Fast continues. "They don't want 'minor' injuries. They don't want *any* injuries."

(Cont'd on page 4)



'The Confusion Continues' School Buses and Lap Belts

(Continued from Page 3)

John States, M.D., an orthopedist and professor at the University of Rochester, says that large school buses are already very safe vehicles. The primary purpose for getting belts into school buses, says States, who has worked in New York to promote them, is: "We're out to save lives in the car."

States says belts are a good idea because of the educational carryover. It's confusing, he says — along with others — to tell children that belts are a good thing in cars but not necessary in school buses. However, both States and Fast acknowledge there are no studies indicating a correlation between belt use on school buses and belt use in automobiles.

States discounts tests showing that lap belts may increase the crash force on children's heads in frontal impacts. Dummies that have been used are "too stiff," he said, to give a true measurement of what happens in a crash. (See "Canadian Crash Tests," Page 5.)

So far, only the Wayne Corporation, a bus manufacturing company, has agreed to provide predrilled holes in their seats so that school districts can retrofit their buses with lap belts.

Wayne's vice president for product assurance, Robert Kurre says that when the company installs belts in large buses, it uses the seats that it installs on small school buses, which are required to be equipped with lap belts. They come with an additional leg support and braces in order to withstand the added force that a seat belt would concentrate in a crash. This was despite a NHTSA ruling that the present seats are adequate in a crash.

Kurre says the company goes to the additional expense because of potential liability problems. The cost of installing seat belts is \$1,200 to \$1,500 per bus, he said.

In October 1984, Wayne petitioned NHTSA to amend FMVSS 222 to set a standard covering the installation of safety belts in school buses. In its petition, Wayne said, "pro seat belt organizations have taken up NHTSA's suggestion and are lobbying local authorities to specify seat belts in their new bus purchases. In some instances, pressure has been so great that local authorities are attempting to retrofit older buses with seat belts."

Wayne reported that over 35 bills have been filed in 13 state legislatures seeking to require seat belts, and U.S. Rep. Peter Kostmayer, Pennsylvania Democrat,

has filed a bill to provide federal incentive grants to states requiring them.

"The controversy surrounding the seat belt debate has created confusion rather than enlightenment," Wayne said. "Questions have been raised and conflicting information bandied about concerning the number

(Cont'd on page 11)

School Bus Statistics: It's Safer Inside

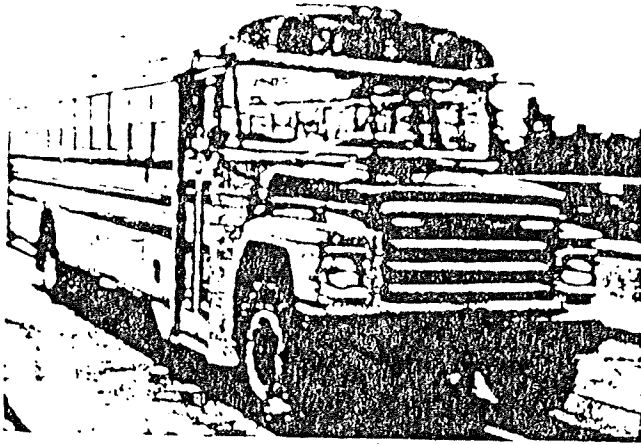
School buses provide one of the safest modes of transportation available, according to the National Highway Traffic Safety Administration. Since 1977 NHTSA reports an average of 12 school bus occupants have died each year in crashes.

The most dangerous place for a child is not the interior of a school bus, but its exterior. An average of 66 children are killed each year as they enter or exit school buses, NHTSA says. In 1983, the last year for which data are available for such pedestrian fatalities, NHTSA reported 44 pedestrian deaths. Two-thirds of them were children under nine years of age.

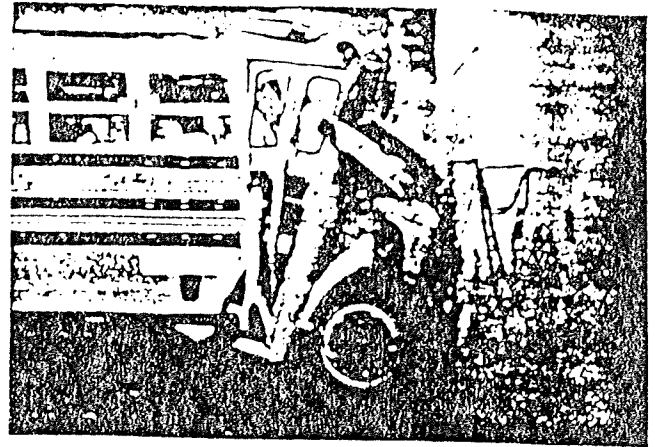
Of the 139 people killed in fatal school bus crashes in 1983, only 18 were riding in buses. The remainder were pedestrians, bicyclists, other drivers, and their passengers.

State data on school bus crash injuries are incomplete. Where numbers have been collected, all injuries are lumped together making it impossible to distinguish between scratches and more serious injuries. Although the Department of Transportation and National Transportation Safety Board have attempted to study bus crashes that do not involve fatalities, investigation teams have been stymied because so few crashes occur that offer sufficient data.

The only figures available come from the National Safety Council and those are derived from state data and amount to no more than rough estimates. However, for the 1982-83 school year, the safety council estimates that 3,300 pupils were injured in 2,000 school bus crashes.



Large buses are safer for riders.



Large bus absorbs crash forces, lessens injuries.

Canadian Crash Tests

Will Lap Belts Do More Harm Than Good?

Recent tests conducted by the Canadian government indicate that in severe frontal impacts, lap belts in school buses could do children more harm than good.

The 1985 study of lap belt performance in frontal impacts was conducted by Transport Canada, the equivalent of the U.S. Department of Transportation. The Canadians conducted three full-scale 30 mph barrier impacts using various sizes of dummies, some equipped with instruments to record injury levels. The vehicles tested were a 66-passenger Blue Bird school bus, which meets U.S. standards designed to protect unbelted occupants, and two smaller buses seating 20 and 22 passengers.

The lap belted dummies on the large bus recorded head impacts two to three times more severe than the unbelted dummies. But by far the worst scores were recorded by the lap belted dummies on the small buses.

The results were not surprising, says Dr. Kennerly Digges, deputy associate administrator for research at the National Highway Traffic Safety Administration (NHTSA). In 1978, sled tests by the safety agency showed that lap belts "caused an increase in peak accelerations," resulting in harder head impacts with seat backs.

Digges noted, as have other NHTSA officials, that in side and rollover crashes, belts would provide safety benefits to school bus occupants. However, he contends that lap belts for large buses are a poor investment from a cost-benefit point of view. "You'd be better off spending the money on better brakes and better drivers," he says.

In Canada, large school buses meet safety standards that are similar to U.S. requirements. However, small Canadian school buses weighing less than 10,000 pounds are not equipped with lap belts and the head protection zone and seat spacing measurements differ from U.S. requirements.

Transport Canada concluded that in the tests "the belted dummies experienced higher head accelerations, lower chest accelerations, and more severe neck extension than did the unbelted [dummies]. This indicates that if lap belts are installed on current designs of school bus seats, a greater potential for head injury exists."

The report said that the "passive occupant restraint system (compartmentalization) required [by Canadian safety standard 222] since 1980 functions as intended during frontal impacts and provides excellent protection for occupants."

The "School Bus Safety Study" was written by G.N. Farr, an automotive safety engineer with the crashworthiness section of Transport Canada. The tests were conducted under contract with Calspan, a private research company.

William T. Gardner, head of crashworthiness engineering for Transport Canada, says the tests were conducted because it might be more damaging to add lap belts and previous studies indicated that head and neck injuries might be aggravated by them. The tests were done to answer those questions. About 55 percent of all school bus crashes in Canada during 1981 were frontal, the report noted.

The engineers tested a 66-passenger 1984 Blue Bird bus, a 1984 Campwagon van conversion type, 20-passenger bus, and a 1984 Thomas Minotour 1, 22-

(Cont'd on page 6)



Full-size bus: seat cushions impact.



...But belted dummy's head bears brunt of load.

(Continued from Page 5)

passenger bus built on a Ford school bus chassis. All three are commonly used throughout Canada, the study said.

For the test series, 4-foot, 10-inch, 5th percentile adult female anthropomorphic dummies were used in each bus. Three were belted and three were unrestrained in each bus. Each was instrumented to determine head and chest acceleration during the crash. Some of the dummies were instrumented to measure knee and upper leg injury data. Other, smaller dummies were placed on the large bus to provide a photographic comparison with the larger dummies.

None of the test dummies were certified for compliance testing under U.S. Federal Motor Vehicle Safety Standard (FMVSS) 208. Therefore, a calculated head injury criterion (HIC) level of 1,000 for the dummies used in these tests cannot be correlated with the HIC level of 1,000 set as the upper limit under the U.S. occupant safety rule. However, the measurements obtained in the Canadian crash tests can be used to compare lap belted and unbelted performance of the dummies used in each of the school bus tests.

The barrier crashes of the two smaller buses showed that in all cases, the dummies secured by lap belts measured HIC values exceeding 1,000—and in some cases, scores in the 2,000 plus range were calculated. All unrestrained dummies had HIC values of less than 1,000.

"From these results," the Farr report said, "it must be concluded, that for frontal impacts, the restrained occupant would receive more severe head injuries than the unrestrained one. One can further conclude that injuries could very likely be life threatening."

The test films showed that many of the belted dummies' heads struck the seats in front of them so violently that the force bent the heads back on the necks at almost a 90 degree angle. The action was severe enough to be judged to cause serious injury, Farr said.

In the large school bus, the HIC values for the lap belted dummies were about three times greater than for the unrestrained dummies. However, none measured HIC values in excess of 1,000.

The reason they didn't, says Transport Canada's Bill Gardner, is that a 30 mph barrier crash of the small *(Cont'd on page 8)*



Busette: "Soft" landing for the unbelted.



Belted copassengers could have fatal injuries.

SUMMARY OF CRASH TEST RESULTS					
Dummy Number	Belted	Unbelted	HIC*	Chest* Acceleration (g)	
1		X	NA	60.4	Large Bus Bluebird, 66 Passenger Weight 8147 kg Velocity 48.8 km/h Deceleration 15 g Dynamic Crush 1371 mm Body Slide 775 mm
2	X		649	40.8	
3	X		629	28.1	
4		X	220	34.2	
5		X	205	48.2	
6	X		731	25.0	
1	X		2,505	40.1	Busette Thomas Minotour, 22 Passenger Weight 4033 kg Velocity 47.0 km/h Deceleration 19.5 g Dynamic Crush 729 mm Body Slide 381 mm
2		X	893	47.9	
3	X		1,144	38.8	
4		X	741	59.8	
5	X		1,173	42.4	
6		X	494	44.9	
1	X		2,016	32.5	Small Bus Van Conversion Type Campwagon, 20 Passenger Weight 3056 kg Velocity 47.1 km/h Deceleration 49 g Dynamic Crush 495 mm Body Slide 0
2		X	389	21.1	
3	X		2,195	32.2	
4		X	948	42.0	
5	X		1,711	37.5	
6		X	607	24.4	
*HIC (Head Injury Criterion) data not comparable to scores obtained by dummies used for testing under FMVSS 208. Generally, the higher the HIC, the greater the likelihood of injury.					

(Continued from Page 6)

bus is much more severe than that of a 66-passenger bus. The smaller buses are much stiffer than the large bus and, in addition, the smaller buses stop much more quickly. Because the large bus body slides on the frame and its front end crushes, much of the crash force is absorbed before it is transferred to the occupants.

The high head injury loads measured by the dummies were, in part, a result of the stiffness of the dummies used in the test, the report noted. Gardner pointed out that the severity of the rearward flexure experienced by the dummy heads after they hit the seats in front of them is particularly noteworthy because the stiffness of the dummies should have acted to decrease the amount of flexion.

During the crash of the large school bus, two unres-trained dummies the size of six-year-olds struck the seat backs below the seat back frame spreading the forces of the crash over the dummies' bodies. "It is expected that this size of child would be better protected by the 'compartmentalization' concept than a larger child," Farr said.

An adult-sized lap belted dummy in the driver's seat of the large school bus was struck in the head by the steering column in the crash. The driver probably would have suffered serious or fatal injuries in the crash, Farr concluded.

There were other problems noted. On the Blue Bird bus, the fuel tank cap was punctured. "If a rollover had occurred," Farr said, "a significant leakage of fuel would probably have occurred."

On the Thomas Minotour bus, a gasoline tank hose broke loose. "If even a partial rollover had occurred," Farr reported, "a major fuel spill would have happened."

During the crash of the school van, two of the three left side windows shattered, hurling "a tremendous number of small shards of tempered glass" throughout the bus interior. Had the bus been filled with children, the glass could have caused severe eye and body injuries, Farr said. He suggested that window glazing and fuel systems receive further attention from ministry scientists.

Because of the Canadian test results, the U.S. National Transportation Safety Board, which is conducting an evaluation of large FMVSS 222 buses, has decided to expand its study to examine how well small, van-type school buses are protecting their occupants in crashes. (See "Safety Board Studies," Page 11.)

Railroad Crossings

School districts should establish and enforce procedures for checking on whether bus drivers are stopping at railroad crossings, the National Transportation Safety Board recommends.

The recommendation was issued following the board's examination of a train collision with a school bus near Carrsville, Virginia, in 1984. A 108-car train collided with the bus as the driver was trying to back off the tracks. Board investigators found that the driver failed to stop before she started to cross the tracks. The train hit the front of the bus, which was knocked off its chassis. The body then rolled over. Two of the 26 students were seriously injured and the driver died. Board investigators learned that it was not unusual for bus drivers in that school district to fail to stop at rail crossings.

Retrofitting School Buses With Lap Belts? Handle With Care

School districts that retrofit their school buses with lap belts should be very careful about their installation, say officials of the National Highway Traffic Safety Administration (NHTSA) and the Wayne Corporation, a bus manufacturing company.

Under no circumstances should belts be added to buses that were manufactured before 1977. The old bus seats have an exposed rail. Because of the dynamics of a crash, lap belts would actually increase the force with which an occupant's head would strike the rail.

NHTSA has said that it is safe to attach the lap belts to the current seats in poststandard (1977) buses. That statement is still true, says Ralph Hitchcock, director of NHTSA's office of vehicle safety standards.

Hitchcock says that if school districts want to retrofit school buses that were manufactured after 1977, they should first make sure that they purchase lap belts that meet Federal Motor Vehicle Safety Standard (FMVSS) 209. Also, if the manufacturer sells buses that have a lap belt option, school districts should check to see how they are installed and, if possible, follow the manufacturer's installation method.

In general, belts should be attached to the seat frame: if the belts are attached to the floor, children's

feet will get tangled in them and they will probably get dirty, thus discouraging their use, Hitchcock noted. Some frames are manufactured with predrilled holes for installation of the lap belts. Others have a round bar about which the belt can be wrapped and fastened. Still others require that belt brackets be welded to the seat frame.

In the case of buses that require welding, Hitchcock says some school districts have contracted the work out to local garages. Such a practice often results in faulty workmanship, he says, because garage personnel are usually not familiar with the strength requirements necessary to ensure safe restraint. If the belt brackets must be welded to the seat frames, Hitchcock said, professional engineers should check the installation.

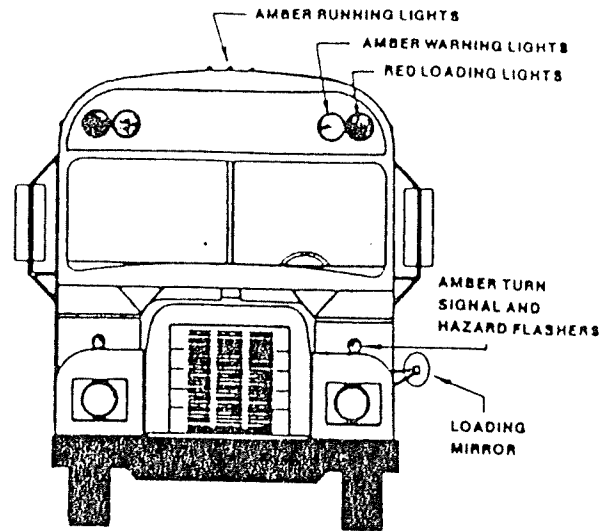
When Wayne installs belts, it provides seats equipped with an extra leg mounted at the midpoint of the seat. Braces are added to both legs. The additional reinforcement helps spread crash forces evenly to the seat frame and body wall. A Wayne representative said the seats are identical to those they install in small school buses.

Such a practice is probably not necessary, Hitchcock says, given the infrequency of very severe crashes. However, school districts that choose to retrofit their buses should at least be aware of some of the drawbacks of not reinforcing the seats in their large buses. In the rare case of a violent crash, it is possible that unbelted occupants would be hurled into the back of a seat in which belted occupants are sitting. It is not clear that the seat holding the belted occupants would be able to sustain the load.

In the small buses meeting FMVSS 222, the bus occupant seating and protection rule, the seats are required to withstand 5,000 pounds of crash force, a considerably stronger requirement than that required for the seats on large buses. NHTSA set the higher requirement for small buses because small van-type bus crashes are likely to be much more violent than large bus crashes.

If money wasn't limited, says Hitchcock, and installation were readily available, the ideal belts to install in school buses would be combination lap and shoulder belts. Those systems would solve the problem of jackknifing in frontal crashes, and would do a better job of keeping heads, arms, and shoulders where they belong in a rollover crash.

School districts considering whether they want to install belts should consider the routes and speeds of their buses, Hitchcock noted. For example, school districts with buses traveling over mountainous terrain at high speeds might find belts more useful than urban and suburban districts with more flat terrain where buses travel relatively slowly.



Two Texas Studies Probe Illegal Passing Of School Buses

An evaluation of stop arms on school buses reveals the stop sign on a swing arm can cut down illegal passing by 30 percent or more, a Texas study shows.

The research into their effectiveness followed a pilot study by the Insurance Institute for Highway Safety documenting that illegal passing of school buses stopped to load or discharge passengers is a dangerous problem. In recent years, bus drivers have reported increasing numbers of motorists breaking the law.

Since 1980, the Texas Department of Public Safety has reported a total of six school-bus-related pedestrian fatalities and 150 injuries — 35 of them incapacitating. In each case, the victim was under the age of 16 and was not struck by the school bus.

Researchers for the Insurance Institute for Highway Safety say that although some of the illegal passing is the result of deliberate decision-making by the motorist, some of it may be the result of confusion.

In the 1984 pilot study conducted for the IHS by the Texas Transportation Institute, observers in two large urban school districts reported that on an average day, each school bus was passed illegally by about seven cars.

A total of six bus routes were observed, three of them in Houston and three in San Antonio, for a total of three days each. There were 8.33 illegal passes per day per bus in Houston, and 4.65 per day per bus in San Antonio. Over 77 percent of all the illegal passes occurred on multiple lane highways.

(Cont'd on page 10)

SUMMARY OF DATA FOR SCHOOL BUS ROUTES			
	Percent With At Least One Illegal Pass	Number of Vehicles Passing at Stops With Illegal Passes	Number of Illegal Passes Per Bus Per Day
TREATMENT ROUTES (19)	Before Tests	18	6
	Treatment Period	9	2
CONTROL ROUTES (6)	Before Tests	13	2
	Treatment Period	14	2

Source: Texas Transportation Institute

Safety Board Studies Crashes to Evaluate Large Bus Protection

The National Transportation Safety Board is studying crashes of post-1977 large school buses to ascertain whether safety standards are adequately protecting occupants.

The safety board had expected to complete the study by the end of 1985, but following publication of Transport Canada's crash tests of large and small school buses, the board is now considering expanding the study to include crash investigation of vans equipped as school buses, and other small school buses. As part of the study, board investigators are seeking to evaluate whether buses should be equipped with lap belts.

"In the accidents we have seen so far, there is no clear pattern emerging that indicates lap belt installation would have made that much of a difference in serious or fatal injuries on large buses," a board official says.

One of the major problems with evaluation of lap belts, is the lack of school bus injury data, the official says. There is no uniform reporting of school bus related injuries. When they are reported, the injuries are lumped together so that there is no way to differentiate between minor scratches and severe injuries. The board is especially interested in investigating crashes of conventional large buses equipped with lap belts, and needs to be notified when and where they occur, the official said.

In 1983, the safety board said it did not believe there was sufficient data to justify a mandatory requirement for lap belts in large buses.

School Buses and Lap Belts

(Continued from Page 4)

of belts, their length, floor vs. seat anchorage, the type of buckle, adequacy of supporting structures, retrofitting, belt access, release, injuries, etc., and the confusion continues."

NHTSA should promulgate a rule specifying exactly how seat belts should be installed, said the manufacturer, so that school districts wishing to voluntarily adopt them and the manufacturers that produce them will have some guidance, and theoretically, some immunity from potential liability.

In Fairfax County, Virginia, the Board of Supervisors voted to appropriate \$100,000 to provide seat belts for new school buses. Assistant Superintendent William Shadle says he can't spend the money yet because he is required to follow state specifications. And so far, the state has not decided whether it will issue interim specifications covering the installation of seat belts without NHTSA's guidance.

Shadle says that in the past school year, the county recorded 71 mishaps involving school buses. There were no deaths and the most serious injury was a dislocated shoulder. He adds that without putting an aide in every bus, a safety belt rule would be hard to enforce. "We have 800 buses with 5,400 daily runs in 180 schools," said Shadle. "I just can't get too enthusiastic. Of course, if we have to do it, we'll do it."

Some NHTSA officials believe the Wayne petition will be answered affirmatively soon. However, the proposal for rulemaking must be cleared by the White House's Office of Management and Budget, a detour that could delay the decision.

— Special Issue —

This special issue of *Status Report* focuses on school bus safety. Other special issues have focused on the following subjects:

- Seat Belt Use Laws — Vol. 19, No. 14 (1984)
- Restrictions on Teenagers' Driving — Vol. 19, No. 10 (1984)
- The Injury Fact Book* — Vol. 19, No. 7 (1984)
- Automatic Restraints — Vol. 18, No. 18 (1983)
- Truck Crashes — Vol. 18, No. 4 (1983)
- Small Car Hazards — Vol. 17, No. 20 (1982)
- International Symposium on Drunk Driving — Vol. 17, No. 18 (1982)
- Small Car Size and Deaths — Vol. 17, No. 1 (1982)
- Teens and Autos — Vol. 16, No. 14 (1981)
- Drinking and Driving — Vol. 16, No. 5 (1981)
- Utility Vehicle Rollovers — Vol. 15, No. 19 (1980)
- Air Bags — Vol. 14, No. 14 (1979)
- Air Bags — Vol. 14, No. 13 (1979)

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the highway loss reduction

Status Report

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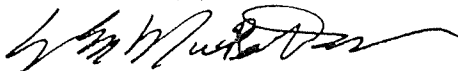
Re: Seat belts and buses

We operate three small (19,21,21 passenger) buses on either regular or kindergarten routes. All three buses are equipped with seat belts. After hearing three years of complaints from the drivers about the problem of the presence of the seat belts -- kids hitting each other, connecting them across the aisle to trip kids, etc., we decided to make it mandatory for students to use the seat belts this year.

That was a mistake: a) With the high backs, the driver can not see if the small students are even in the seats let alone if they have the seat belts fastened; b) When the belts were fastened, many were so loose that the belt itself created a danger to the student; c) Again due to the high backs on the seats, it did not decrease the ingenious use of the belts for a variety of unintended purposes.

I am to a point where I am about ready to have the seat belts removed. In my opinion, adding seat belts to the buses would only be adding one more thing to divert the driver's attention from his/her real task of "safely transporting" the students to and from school and would actually be decreasing the safety for the students. I am very much opposed to adding seat belts.

Sincerely,



Wm. Muckenthaler
Superintendent of Schools
Argonia U.S.D. #359



National Transportation Safety Board

Washington, D.C. 20594 20-50-160
Safety Recommendation

Date: May 1, 1987

In reply refer to: H-87-13 through -16

Mr. Tim O. Edwards
Safety Specialist
Kansas Department of Transportation
State Office Building, 10th Floor
Topeka, Kansas 66612

In 1977, a series of special Federal motor vehicle safety standards went into effect, mandating a higher level of safety for schoolbuses compared to other buses, but data on the crash performance of large schoolbuses built to Federal schoolbus standards have been lacking. Therefore, the Safety Board conducted a series of in-depth accident investigations from 1984 to 1986 on the crash performance of schoolbuses built to Federal schoolbus standards to determine how well the standards are working to protect passengers from injury and whether changes in the standards are needed. 1/

The crash investigation phase of this study, comprising 43 accidents, was conducted by headquarters staff and seven of the Safety Board's field offices located around the country. State and local school transportation officials, law enforcement officers, hospitals, and safety advocates were asked to notify Safety Board investigators when schoolbus accidents meeting the following criteria occurred.

The large schoolbus (weighing more than 10,000 pounds) was manufactured after April 1, 1977, was occupied by school age children, and

- o the schoolbus was involved in a moderate speed collision that disabled the bus (occupant injuries need not have resulted); or
- o the schoolbus overturned; or
- o one or more of the schoolbus occupants was seriously injured or killed in the accident (the accident could be any type).

Obviously, given the Safety Board's limited workforce, it could not investigate every schoolbus accident which met these criteria. In addition, notification was sometimes not received or received too late for follow-through on accidents potentially of interest. Priority was given to the investigation of schoolbus accidents involving rollover or side impact, since injury data are particularly lacking in these types of accidents, and these types of accidents have generated the most occupant protection discussion.

1/ For more detailed information read Safety Study--"Crashworthiness of Large Poststandard Schoolbuses" (NTSB/SS-87/01).

During the 29 months this study was conducted, the Safety Board probably investigated every accident involving a large poststandard schoolbus which resulted in a schoolbus passenger fatality, most, if not all of the crashes which resulted in a serious or greater injury, and many of the crashes which produced moderate injuries. The Safety Board's study definitely was slanted towards the more serious rather than the minor schoolbus accidents, but this was precisely what the Safety Board intended. These are the crashes in which shortcomings in occupant protection will be more apt to be revealed. The Safety Board was not attempting to conduct a census of all schoolbus accidents in the United States, nor was it attempting to conduct a statistical sample of all injury-producing schoolbus accidents.

In each case, any damage to the exterior or interior of the schoolbus was carefully documented and medical information about each injured driver and passenger was obtained by interviewing the surviving occupants, parents, school officials, and medical personnel, and reviewing hospital records when available. The injury information was used to classify each injury according to the Abbreviated Injury Scale, a well recognized system for classifying the severity of physical injuries.

The Safety Board highway investigators also reconstructed the sequence of accident events for each schoolbus in the study, and attempted to determine when in the accident sequence schoolbus occupants were injured and the probable contact point(s) that produced their injuries. Using this information, the Safety Board also analyzed each schoolbus passenger's experience to determine the difference, if any, lap belt use would have made.

Because this study was undertaken solely to provide real-world data on how well modern schoolbuses protect occupants during a crash, it was not necessary to determine what caused the accident (the "probable cause"). Therefore, precrash factors (roadway condition, driver error or training and selection, discipline problems on the bus, improper passing by drivers of other vehicles, etc.) were not analyzed. Postcrash factors (evacuation and emergency medical care) also were not addressed except to distinguish between injuries sustained during the crash and those sustained during the evacuation. (Most injuries were sustained during the crash.) The study focused solely on events during the crash: how well did the bus perform; how did occupants sustain their injuries, if any; and how serious were the injuries.

Schoolbus passengers fared very well in the crashes investigated for the study, despite the fact that the accidents selected for investigation were slanted toward more serious schoolbus accidents. Ninety percent of the 1,119 unrestrained schoolbus passengers in the study sustained no injuries or only minor injuries as their most severe injury; 5.1 percent received moderate injuries as their most severe; and only 3.6 percent sustained more than moderate injuries. (Outcome for 1.3 percent of the occupants was unknown.) As a subset of the entire accident sample, those accidents involving a rollover had relatively similar passenger injury outcomes.

The Safety Board concluded that, overall, the schoolbus passengers in its cases would have received no net benefit from lap belt use. This finding of no overall benefit does not include the possibility of lap belted-induced injuries; if this possibility is counted, the introduction of lap belts would have had a negative effect on these passenger's safety.

Driver lap belt installation and use is an entirely different matter. The driver of a schoolbus is seated in a considerably more vulnerable position than a schoolbus passenger.

The driver is surrounded by large, potentially dangerous areas of metal and glass, with the steering wheel, gearshift, and stairwell, in the immediate vicinity, while a passenger is in a more protected environment with padded seats in front and behind. In the past the Safety Board has issued safety recommendations that schoolbus drivers should be provided safety belts at their seating positions (such restraints were not always required for bus drivers) and has recommended that the schoolbus driver wear his or her safety belt whenever the vehicle is in motion.

Today lap belts now are routinely available for drivers of large schoolbuses, and Federal safety standards recommend that all schoolbus drivers be required to wear their seat belts whenever the bus is in motion. ^{2/}

The recommendation that a schoolbus driver be restrained is based on more than the need to provide some form of occupant protection for the driver; proper lap belt use by the driver helps protect the schoolbus passengers as well. A driver must remain in his or her seat at all times and in control of the vehicle to be able to take evasive maneuvers if needed, and to minimize the consequences of the crash for all schoolbus occupants. A driver who has fallen from his or her seat due to a sudden swerve, impact, or rollover has relinquished control of the vehicle and is unable to influence the outcome of subsequent crash events.

Nevertheless, only slightly more than half of the schoolbus drivers in the study were wearing their available lap belts at the moment of the crash. Drivers were even unrestrained in buses which had restrained passengers.

Even more disturbing, many drivers who reported they were restrained probably were not wearing their lap belts properly, and thus were not afforded the full benefits of the restraint. In some cases in this study it is apparent that, although the schoolbus drivers were wearing their lap belts, the belts were improperly worn and thus allowed the drivers to slip off their seats, resulting in the loss of control of the bus.

The type of driver lap belt currently installed in most schoolbuses may favor such improper use. Most lap belts installed for schoolbus drivers are equipped with nonlocking retractors on each side of the belt to store belt webbing when the lap belt is not in use. When the belt is fastened around the driver, these storage retractors provide some tension or feeling of tightness to the belt. Unfortunately, drivers may assume these storage retractors are automatic or emergency locking retractors, i.e., that the retractors will stay locked in a crash so no additional belt can be played out. This is not the case; drivers must manually pull all the webbing out of both of the retractors and tighten both sides of the lap belt around them before the belt is properly "snugged up." If this is not done, all of the belt may play out in a crash, leaving the driver with a lap belt far too loose to provide proper restraint.

Indeed, an unadjusted belt can allow drivers to fall completely off their seat while still wearing the belt. Clearly, a belt worn so loosely will not provide any degree of restraint. Unfortunately, many drivers and school district personnel appear unaware of the hazards of wearing an unadjusted belt.

Improper lap belt wearing was involved in the Swink, Oklahoma, accident. In this accident, the driver lost control of her bus, the bus left the roadway, and rolled over. Twenty-seven passengers and the driver were injured. The schoolbus driver stated

^{2/} Federal Highway Safety Program Standard (HSPS) 17 -- Pupil Transportation Safety.

that she was wearing her lap belt but that it did not restrain her. Investigators found the lap belt was fully extended. It had played out completely during the crash because both sides had not been manually "snugged up" as this type of belt requires.

In a few cases, the lack of proper restraint for the driver clearly led to passenger injuries. For example, in the fatal schoolbus accident in Carmel, New York, the driver slipped from her seat when the bus went out of control and left the road. The bus eventually veered back onto the road and went off the other side of the road. Events which occurred in the second runoff subsequently resulted in the death of one of the passengers. The driver in this case may have had her belt partially on at the onset of the accident, or she may have been not wearing the belt at all, but it was clear she had fallen from her seat before the second runoff and thus could not control the bus. If the driver had remained in her seat, she might have regained control of the bus in time to prevent the second runoff and thus would have prevented the passenger's death and the other passengers' injuries (all injuries occurred during the second runoff).

Of course, lap belt use is recommended for schoolbus drivers for more than increased control of the vehicle. Restraint use hopefully increases the chances the driver will be conscious following the crash and able to direct evacuation efforts, thus sparing passengers from postcrash injuries. The most dramatic example is a schoolbus overturn near Caldwell, Texas. When the schoolbus struck a dirt embankment and overturned, it trapped a student's leg between the bus and ground. A fire broke out shortly following the crash. The schoolbus driver had been restrained during the rollover and was uninjured so she was able to direct rescue efforts. All passengers were safely evacuated from the bus; the trapped student was freed minutes before the fire reached her seat.

In the Durango, Colorado, accident, the bus had rolled down a mountain embankment and had come to rest in an icy river. Passengers easily could have panicked. Although the restrained driver sustained two broken ribs and multiple contusions during the rollover, he was conscious and able to direct evacuation efforts.

In only one case in this study did a seat belt clearly fail. The driver in the Fort Myers, Florida, accident was released by her lap belt upon impact. This lap belt was removed by Safety Board investigators and tested in a laboratory, revealing that the buckle latch was faulty because a component was bent from its proper position. The Safety Board has since investigated a rollover case in Lincolnton, North Carolina, involving a latch plate failure by this make of belt, a Beam 300. The Beam 300 lap belt has a metal flap type latch plate similar to those found in airplanes.

There is some suggestion that these two accidents involving lap belt buckle failure are not isolated occurrences. The Safety Board has learned that in 1979, Canada recalled 710 Thomas Built buses manufactured from July 1, 1978, to June 11, 1979, because "the driver's seat belt buckle (Beam double adjust model) may only partially engage and may not adequately restrain the wearer in a vehicle crash" (Transport Canada recall #79205, issued December 4, 1979). Canadian files also contain a formal complaint filed in 1982 by a school board in Windsor, Nova Scotia, alleging that the Beam 300 buckle comes unfastened when the driver "moves his position on seat." The school board noted that the same Beam 300 seat belts were on all the 1976-1978 General Motors school buses in their fleet.

Prompted in part by the Safety Board's two cases of buckle failure, the National Highway Traffic Safety Administration's (NHTSA) Office of Defects Investigations has undertaken a preliminary evaluation of Beam 300 seat belts manufactured from 1978 through 1979. Latch disengagement was cited as the reason for the defects investigation.

The NHTSA has rulemaking underway to eliminate these flap type release latchplates now allowed in buses weighing over 10,000 pounds and to require push button release buckles similar to those required in passenger cars. This rule, if enacted, would eliminate the type of Beam 300 latchplate found in the Fort Myers accident bus and in the North Carolina accident.

The same rulemaking also contains a proposal that all lap belts for drivers of vehicles weighing over 10,000 pounds Gross Vehicle Weight Rating (GVWR) (including large schoolbuses) must be equipped with emergency locking retractors. The Safety Board understands that the NHTSA is now considering amending the proposal to also allow automatic locking retractors in driver lap belts. Such automatic locking retractors would have to be especially designed not to "ratchet-up" because of vehicle motion. Otherwise, they could become quite uncomfortable for the driver.

Regardless of what type of locking retractors are required, the NHTSA proposal would go a long way toward eliminating the problem of unadjusted lap belts found in the Safety Board's study. It also would eliminate the latch plate problems observed. Rulemaking is in its final stages and a new rule is expected to be issued soon. Only new large schoolbuses, however, would be affected by the rule. The problems of poorly designed driver lap belts and improper belt use would remain on the older buses. Therefore, the Safety Board is issuing a recommendation that all large schoolbuses be retrofitted with safety belts which meet the new NHTSA requirements when enacted. This would ensure that drivers of old and new schoolbuses are afforded adequate restraints. The Safety Board also is issuing a recommendation that school districts instruct drivers on how to adjust properly the lap belts currently in the schoolbuses, because it may take time before all schoolbuses have improved lapbelts for drivers. On the average, schoolbuses are retired from the public school fleet after 10 to 12 years of service.

There is some question whether lap/shoulder belts should be considered for schoolbus drivers. Such belts clearly offer superior protection over lap belts for occupants of passenger cars; perhaps schoolbus drivers also would benefit from the upper torso restraint provided by lap/shoulder belts. However, analysis of the serious and worse injuries sustained by schoolbus drivers in this study does not support the need for lap/shoulder belt installation for schoolbus drivers. Intrusion was responsible for all the serious and above injuries, and no belt system can prevent injuries caused by intrusion. It is possible lap/shoulder belts might have prevented or mitigated some of the moderate injuries sustained by the schoolbus drivers, but the number of schoolbus drivers who sustained such injuries in the study is too small to support any conclusions. More study needs to be done before the safety benefits of lap/shoulder belts for schoolbus drivers can be evaluated.

Installation of lap/shoulder belts for schoolbus drivers also poses problems. It is unclear where the upper anchor for the shoulder portion could be located. The seat would probably have to be redesigned to permit the anchor to be part of the frame. Furthermore, the driver is surrounded by windows without the "B" pillar type structure available in passenger cars for shoulder anchorage.

The Safety Board understands Thomas Built Buses has developed a prototype lap/shoulder belt assembly for drivers and is investigating the feasibility of installation. They are not prepared to offer driver lap/shoulder belts on their large buses yet.

Even if the restraint systems available to all schoolbus drivers are improved, no safety benefits will result if the belt is not worn. For this reason, as a result of the study findings, the Safety Board re-emphasizes the need for schoolbus driver restraint use to be mandated and enforced. The Safety Board previously has made recommendations relating to seat belt availability and use by schoolbus drivers. Early recommendations called for seat belts to be installed for schoolbus drivers (at one time they were not standard equipment) and urged that schoolbus drivers use the available restraints. The most recent Safety Recommendation, H-83-41, was issued in 1983 to all Governors:

Review State laws and regulations, and take any necessary legislative action, to ensure that drivers of schoolbuses are required to wear their seatbelts whenever the vehicle is in motion, that all schoolbus drivers are made aware of this requirement, and that periodic monitoring of schoolbus driver seatbelt use is conducted.

This recommendation has been closed for 18 States but is open for the remainder of the States. A 1984 survey conducted by the National School Transportation Association found that 42 States had requirements that schoolbus drivers wear their belts. The Safety Board believes that most States probably now have such requirements. However, judging by the low restraint rates seen in the study, enforcement appears deficient. Hence, as a result of this study, the Safety Board is issuing a new recommendation, superseding H-83-41 and reiterating the concept that schoolbus drivers need to be restrained and emphasizing enforcement.

Another area of concern to the Safety Board was the deficiencies in seat cushion attachment observed in the study. Schoolbus seat design clearly has improved with the enactment of Federal schoolbus safety standards. Seats on poststandard schoolbuses do not have the low seat backs with exposed metal frames and insufficient padding that were typical of buses built before 1977 and were responsible for many serious head injuries. Schoolbus seats now have increased padding, increased seat back height, and are placed closer together. Furthermore, the seat backs are designed to "give" in a controlled way when impacted by a person in the seat behind. In this study, contact with the seat back was not a significant source of injury on poststandard schoolbuses. If injuries did result, they almost always were minor bruises or abrasions.

Nonetheless, the crashworthiness of schoolbus seats needs improvement. In 16 of the 44 accidents investigated for the study, seat cushions came loose during the crash. In four crashes, all of the passenger seat bottom cushions came loose; in the other 12 crashes, the number of bottom seat cushions unsecured following the accident varied between 2 and 15.

Cushions came loose in all types of schoolbuses in the study and in all types of accidents. Rollovers were particularly apt to result in unsecured cushions.

The problem of unsecured seat cushions is confined to the bottom cushion. The top cushions are permanently secured to the seat frame, whereas most of the bottom cushions can be flipped up or removed to facilitate bus cleaning and other types of maintenance.

The lack of a fail safe method of fastening bottom seat cushions is potentially dangerous for a variety of reasons. During an accident, particularly during a rollover, loose cushions can become missiles, tumbling about the bus and striking passengers. In addition, students can injure their backs and other parts of their bodies if they fall through the open seat frames or contact the exposed frame.

Loose seat cushions pose yet another potential danger when they fall into the aisle and hamper or block passenger escape routes or emergency exits. This occurred in two cases in this study. A blocked exit could spell disaster in a fire or in any other type of accident where passengers evacuate the bus quickly.

Finally, loose cushions pose a threat to preschool or elementary school passengers. If seat cushions come loose in a bus, it is conceivable that loose cushions could hide an unconscious small child from view and thus prevent emergency rescue personnel from locating and rescuing a small child quickly.

In some accidents, the seat cushions came free because the seat cushion clips had not been secured to the seat frames before the accident. In other cases, the bottom seat cushions came free probably because the clips at the rear of the cushion were loose and free to rotate and, therefore, did not secure the cushion to the rear of the seat frame. In still other cases, the clips may have been properly secured to the seat before the accident but rotated to the unsecured position during the impact or rollover. In the Bladensburg, Maryland, schoolbus accident, a non-swivelling clip "failed" because the bus seats had been reupholstered, covering some of the clips in the process, and the clips were not properly resecured. Passengers were injured in this accident by contact with loose seat cushions and exposed seat support rails.

Even when not secured to the seat frame, seat cushions did not necessarily come loose and tumble around the passenger compartment during the accidents investigated by the Safety Board. The type of accident determined whether they came free. For example, in an activity bus accident in Bloomfield Township, Ohio, a 1984 Carpenter schoolbus crashed head-on into the side of a passenger car which had gone out of control. After the collision, the bus ran off the road into a 5-foot drainage ditch and came to rest on its right side at a 45° angle.

Following the accident, the Safety Board found that the bottom seat cushions of all passenger seats on the bus were unsecured but still resting on the seat frame. The Safety Board investigator found that all rear clips on the seats had rotated approximately 90° from the locked position. This allows the seat cushion to flip up and possibly become unhinged from the seat. In this crash, the accident dynamics were such that no seat cushion came loose. If the rollover had been more extreme, they could have come free.

Consequences of failure to secure the seat cushions in a more extreme rollover accident is illustrated by an accident in Swink, Oklahoma. This accident involved a 1982 Wayne bus in which all of the seat cushion clips had been left unsecured in order to facilitate sweeping the bus floor. Seven of the seat bottom frame clips could never have been fastened because the stationary front clips had been bent backward. When this bus made a 360° revolution, every bottom seat cushion came loose and tumbled around the passenger compartment. Cushions struck three students and inflicted abrasions and lacerations. When the bus came to rest upright, the cushions littered the aisle and obstructed evacuation. Fortunately, no fire followed the crash and all students had time to climb over and around the seat cushions and evacuate the bus.

The Safety Board understands that most, but not all schoolbus manufacturers intend to manufacture buses with seats permanently affixed to the seat frames. The Safety Board believes that permanent attachment will circumvent poor maintenance practices and improve the crashworthiness of the seats.

Permanent attachment is proposed, however, for some new schoolbuses only. The Safety Board urges those schoolbus manufacturers who, at present, do not have firm plans to implement permanent attachment to formulate such plans as rapidly as possible. In the meantime, the Board believes that if a company plans to manufacture new buses without permanent seat attachment, the company must ensure that the method of attachment used provides a means for schoolbus drivers, in their pretrip inspection, to ascertain visually from a standing position that the seat cushions are indeed securely fastened.

The problem of ensuring that seat cushions remain attached during a crash will persist in large and small schoolbuses currently in use. For this reason and based on the findings of this study, the Safety Board is issuing new recommendations designed to address the problem of loose seat cushions in existing schoolbuses.

Therefore, the National Transportation Safety Board recommends that State Directors of Pupil Transportation:

Require that all lap belts for drivers of large schoolbuses, regardless of the age of the bus, satisfy the requirements of the Federal rule affecting lap belts on vehicles weighing more than 10,000 pounds Gross Vehicle Weight Rating when that rule is made final. Initiate retrofit programs as needed. (Class II, Priority Action) (H-87-13)

Require that school districts incorporate, as a regular part of training for new schoolbus drivers and for inservice programs, explicit instructions on how to adjust the driver's lap belt properly. When applicable, emphasize that the belt must be manually adjusted on both sides. (Class II, Priority Action) (H-87-14)

Enforce and publicize the existing regulation that schoolbus drivers must wear their seat belts whenever the school vehicle is in motion. (Class II, Priority Action) (H-87-15)

Advise school districts under your jurisdiction to emphasize to maintenance personnel that seat cushions must be securely reattached after removal and to remind schoolbus drivers to include seat cushion attachment as part of the pretrip inspection. (Class II, Priority Action) (H-87-16)

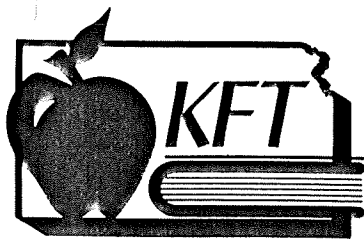
Also as a result of its investigation, the National Transportation Safety Board issued Safety Recommendations H-87-11 to the National Highway Traffic Safety Administration and H-87-12 to schoolbus body manufacturers. The Safety Board also reiterated H-86-57 to Thomas Built Buses, L.P. and H-84-75 to the National Highway Traffic Safety Administration.

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility "...to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations" (Public Law 93-633). The Safety Board is vitally interested in any action taken as a result of its

safety recommendations. Therefore, it would appreciate a response from you regarding action taken or contemplated with respect to the recommendations in this letter. Please refer to Safety Recommendations H-87-13 through -16 in your reply.

BURNETT, Chairman, GOLDMAN, Vice Chairman, and LAUBER and NALL, Members, concurred in these recommendations.

Patricia A. Goldman
By: Jim Burnett
Chairman



KANSAS FEDERATION OF TEACHERS

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TESTIMONY IN OPPOSITION TO SENATE BILL 179

Carolyn Kehr
Director of Curriculum and Special Projects
Kansas Federation of Teachers

Mr. Chairman, members of the Senate Education Committee, the Kansas Federation of Teachers is very concerned about the safety of our children. In recent years State legislators and the Federal Government have sought to regulate school bus manufacturing in order to provide the safest and most cost efficient form of school bus transportation. One very significant force in school bus safety has been the movement to provide seat belts, specifically lap belts, for school buses. The American Federation of Teachers and the Kansas Federation of Teachers remain opposed to this legislation. Our opposition is not related to the cost of implementation nor is it related to the difficulty of installation or difficulty of enforcement. Research has demonstrated that the installation of lap belts may be a detriment to the safety of our children and create problems that actually jeopardize the lives of our young people.

Studies by the Maryland Department of Education and the Canadian Government suggest that seat belts in school buses create a risk to the safety and health of our children. Both studies reveal that safety belts on a school bus work much differently than buckling up in a car. A seat belt

acts as an active restraint. In a car, this means a passenger will be prevented from being thrown through a windshield or a door. In school buses children are not seated near doors or front windows.

The greatest fear in a school bus accident is that the bus will do one of the following:

- roll over
- catch on fire
- fill with toxic fumes

A school bus that fills with toxic fumes can kill its occupants within seven minutes. If the bus is overturned, a child's full weight rests on the seat belt, and releasing the buckle can be nearly impossible. Also, seat belts require enforcement; belts only work when children actually wear them. If a child wears the seatbelt improperly or uses the belt as a weapon, serious injury may result. It is a concern that in some accidents, all three of the above-mentioned tragedies may occur, and a child restrained by a seat belt may have less chance to escape.

Having reviewed all these facts, the United States National Transportation Safety Board determined that the overall safety benefits of school bus seat belts on standard-size school buses "both in terms of reduced injuries for school bus passengers and in seat belt use habit formation, have not been proven."

For these reasons, we ask for an unfavorable reading of Senate Bill 179.



SB 179
Testimony presented before the Senate Education Committee
by Gerald W. Henderson, Executive Director
United School Administrators of Kansas

January 20, 1988

Mister Chairman and members of the committee:

School administrators of Kansas are dedicated to providing the safest possible environment for children, both in our buildings and in the buses that transport our children. If any empirical evidence existed that indicted that buses were safer with seat belts than without them we would support this bill.

We encourage you to listen carefully to one of our members, Mr. Ed Lindsey from Meriden, who has diligently examined all the research on the subject of school bus safety. We think you will agree that the school buses of Kansas are already the safest means of transportation available.

GWH/ed

Attachment 12, 1/20/88

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LET'S REVIEW THE MOST RECENT FACTS OF THIS ISSUE:

- 1ST CANADIAN CRASH TEST 1985
 - A. COMPARTMENTALIZATION PROVIDES EXCELLENT PROTECTION
 - B. THE USE OF LAP BELTS MAY RESULT IN MORE SEVERE HEAD AND NECK INJURIES
- 2ND THOMAS FRONTAL AND SIDE IMPACT CRASH TEST 1985
 - A. COMPARTMENTALIZATION WORKS AS DESIGNED, LAP BELTS WOULD NOT MAKE A DIFFERENCE
- 3RD UNITED STATES DEPARTMENT OF TRANSPORTATION AND NATIONAL HIGHWAY SAFETY ADMINISTRATION JUNE OF 1985
 - A. SCHOOL BUS IS THE SAFEST FORM OF GROUND TRANSPORTATION
 - B. COMPARTMENTALIZATION IS A AUTOMATIC PROTECTION SYSTEM
 - C. ALLAVAILABLE TEST DATA & REAL WORLD ACCIDENT DATA INDICATE THAT COMPARTMENTALIZATION HAS WORKED EXTREMELY WELL.
- 4TH NATIONAL TRANSPORTATION SAFETY BOARD "PASSENGER BELT SURVEY" AUG 1986
 - A. THIS STUDY OF BELTS IN CARS RAISED SOME SERIOUS QUESTION OF THE EFFECTIVENESS OF LAP ONLY BELTS
- 5TH NATIONAL HIGHWAY TRANSPORTATION SAFETY ADMINISTRATION REAUTHORIZATION
 - A. FEDERAL SENATE BILL 853 HAS A REQUIREMENT THAT NHSTA MANDATE INSTALLATION OF REAR SEAT LAP-SHOULDER BELTS IN HALF OF ALL VEHICLES PRODUCED AFTER SEPT. 1, 1990
- 6TH NATIONAL TRANSPORTATION SAFETY BOARD MARCH 1987
 - A. BASED ON THE FINDINGS OF THIS STUDY, THE SAFETY BOARD DOES NOT RECOMMEND THAT STATES OR SCHOOL DISTRICT ALLOCATE FUNDS TO RETROFIT OR ORDER LARGE POSTSTANDARD SCHOOL BUSES WITH LAP BELTS FOR PASSENGERS. THE SAFETY BOARD ALSO DOES NOT RECOMMEND THAT FEDERAL SCHOOL BUS SAFETY STANDARDS BE AMENDED TO REQUIRE THAT ALL NEW, LARGE SCHOOL BUSES BE EQUIPPED WITH LAP BELTS FOR PASSENGERS. THE SAFETY BENEFITS OF SUCH ACTION, BOTH IN TERMS OF REDUCED INJURIES FOR SCHOOLBUS PASSENGERS AND IN SEAT BELT USE HABIT FORMATION, HAVE NOT BEEN PROVEN.
- 7TH SCHOOL BUS FLEET MAGAZINE OCTOBER/NOVEMBER 1987
 - A. FAIRFAX COUNTY VIRGINIA, 5TH LARGEST SCHOOL DISTRICT OWNED FLEET IN THE NATION VOTED TO END 18 MONTH TRIAL ON LAP BELT ON BUSES. THEY RECOMMENDED REMOVAL OF LAP BELTS FROM 263 UNITS AND TO PURCHASE 186 NEW UNITS WITHOUT BELTS.
- 8TH STATE LAW IS NOT NEEDED TO ALLOW LAP BELTS ON BUSES. THOSE DISTRICTS, WHOSE PATRONS WANT BELTS ON BUSES, CAN DO THAT NOW.

SUMMATION

WITH THE MOST RECENT FACTS I AM PRESENTING TODAY, WHY ARE WE EVEN CONSIDERING LAP BELTS ON BUSES. IF WE WANT TO MAKE A VIABLE SAFETY MOVE INSTEAD OF A COMESTIC SAFETY MOVE, SHOULD WE NOT BE TALKING ABOUT LAP-SHOULDER BELTS. YES, THAT WOULD TAKE SOME REDESIGNING OF THE BUS, BUT THAT IS THE MOST LOGICAL SOLUTION IF YOU WANT BELTS ON SCHOOL BUSES.

SCHOOL BUS SAFETY - WHAT ARE THE REAL ISSUES?

JANUARY 1988

Within the past five years the movement of seat belt usage in automobiles has gained momentum and spread to include school buses. But the necessity of seat belt usage in cars is not the issue of this article. Three studies have recently addressed the issue of seat belts in school buses: Transport Canada (frontal collision) and Thomas Test (side & frontal collision), which acted as a follow-up for the Transport Canada Test. The National Transportation Safety Board (NTSB) did a study of 43 actual severe schoolbus accidents from 1984 to 1986. They all came to the same conclusion that seat belts on large post-standard buses would result in less passenger protection.

Research shows that the compartmentalization concept, consisting of high-backed, heavily padded, properly spaced seats, and other factors, provides greater safety than do seat belts. The Transport Canada Test showed that "unlike passenger cars, whose more aggressive interior, lower mass and more severe deceleration behavior makes seat belts essential for occupant safety, the school bus presents a different problem for occupant protection. Instead, the occupant safety in school buses is better improved through passive protection, including the use of high-backed, heavily padded, closely spaced seats. Because of this compartmentalization concept, and the controlled seat spacing, students tend to sit more upright on the seats. In the event of a collision, the occupant slides forward into the back of the seat in front. This results in the forces being spread more evenly over the upper torso than they would be if the occupant were restrained by seat belts." ¹

The National Highway Safety Administration in 1977 ordered compartmentalization in new buses in lieu of mandatory seat belts beginning with 1978 model year. This federal regulation is still in effect. The Transport Canada, Thomas, and NTSB Test results confirm that compartmentalization provides excellent protection for occupants. The tests also show that the use of lap seat belts in any buses may result in more severe head and neck injuries for belted occupants than unbelted.² These results will help in deciding the issue of seat belt usage because now the issue can be addressed from a scientific rather than emotional, viewpoint.

Statistics prove that more fatalities happen outside the school bus than inside.³ The following are the real problems of school bus safety. Children retrieving dropped possessions are hit by the bus. Children passing behind the bus out of the driver's line of vision are backed over by the bus. Children are hit by drivers of other vehicles who do not stop for the red lights or stop sign of the bus. Children are hit by other vehicles while they are gathered at their bus stops.

Some solutions to alleviate these problems would be better instructions of vehicle safety to students and required use of book bags or other method of possession control. Legislation should be passed for stronger prosecution of violaters of stop arm laws. There

needs to be an increase in public awareness of school buses. Most importantly there needs to be increased driver training for school bus drivers.

If more money is available why not put it to the best use for our children? Let us resolve the significant number of proven dangers associated with the outside of the bus before resolving the virtually untested problems inside, or worse yet create new dangers inside the bus, as the recent Transport Canada, Thomas, and NTSB tests clearly show.

Even with these problems, the school bus is by far the safest mode of mass ground transportation in the U.S., EIGHT times safer than the family car.⁵ The state of Kansas has an outstanding safety record. Since 1971 only two student fatalities outside a school bus and no student fatalities inside a school bus have occurred.⁶ A lot of hard work has gone toward this record. Transportation people are safety conscious and, with the help of parents and legislation that addresses the real problems of school bus safety, we can continue this record.

EDWARD J. LINDSAY
PRESIDENT
KANSAS STATE PUPIL
TRANSPORTATION ASSOCIATION

1 "Seat Belts or Passive Protection", results of Transport Canada Test, School Bus Fleet, June/July 1985, p.16

2 "The Thomas Test Confirms Canadian Results", results of Thomas Test, School Bus Fleet, June/July 1985, p.22

3 National Loading & Unloading Survey, from Kansas Department of Transportation

4 "School Bus Safety", American School & University, Oct.1985, p.49

5 Same as 2.

6 Statistics from Kansas Department of Transportation

"Crashworthiness of Large Poststandard Schoolbuses", National Transportation Safety Board, March 18, 1987

ON BEHALF OF THE KANSAS STATE PUPIL TRANSPORTATION ASSOCIATION, I HOPE THAT YOU WILL HELP DEFEAT ANY LEGISLATION FOR SEAT BELTS ON SCHOOL BUSES. WE ARE OPPOSED TO THIS LEGISLATION BECAUSE AS THE FOLLOWING RESEARCH POINTS OUT, BELTS AND COMPARTMENTALIZATION DO NOT WORK TOGETHER.

1. UNIVERSITY OF CALIFORNIA 1968 CRASH TEST
"THE LEAST INJURIES OCCURRED TO PASSENGERS WHO WERE UNSECURED IN THE BUS"
2. NATIONAL HIGHWAY TRAFFIC ADMINISTRATION 1968 - 1974
"THOSE CRASH TESTS CONCLUDED THAT PASSENGERS SECURED TO BENCH SEATS BY LAP BELTS SUFFERED THE MOST SEVERE INJURIES IN THE EVENT OF COLLISION"
3. NATIONAL MOTOR VEHICLE RESEARCH FOUNDATION 1972
"CONDUCTED 200 CRASH TESTS WITH SEAT BELTS AND CONCLUDED THAT AT LEAST 40 INCHES OF UNOBSTRUCTED AREA MUST EXIST IN FRONT OF BELTED PASSENGER IN ORDER TO PROTECT THE PASSENGER FROM FRONTAL IMPACT" (SEATS IN BUSES ARE USUALLY SPACED ONLY 22 TO 28 INCHES APART)
4. VIRGINIA POLYTECHNIC INSTITUTE FOUND: "THAT SEAT BELTS IN SCHOOL BUSES ARE IMPRACTICAL"
5. CALIFORNIA HIGHWAY PATROL COMMISSIONED SOUTHWEST RESEARCH INSTITUTE TO STUDY SEAT BELTS IN BUSES IN 1976. THEY CONCLUDED:
 - A. AUTOMOBILES ARE DIFFERENT THAN BUSES.
 - B. RELEASE OF PASSENGERS FROM BUSES IN MAJOR ACCIDENTS FROM OUTSIDE WAS IMPRACTICAL.
 - C. THE AMOUNT OF TIME REQUIRED TO ENSURE USE BY THE DRIVER OR AIDE WOULD BE PROHIBITIVE.
 - D. VANDALISM TO BELTS, AND BELTS BEING USED AS WEAPONS, MADE THEM IMPRACTICAL.
6. THE NATIONAL ASSOCIATION OF INDEPENDENT INSURORS 1974
"MAJOR QUESTIONS UNANSWERED ABOUT LIABILITY"
7. NATIONAL SCHOOL TRANSPORTATION ASSOCIATION 1974-1976
"STATED COST, HAZARD, ENFORCEMENT, VANDALISM, AND ATTITUDINAL FACTOR AS REASONS TO BE AGAINST BELTS ON BUSES"
8. CANADIAN GOVERNMENT 1985
 - A. COMPARTMENTALIZATION PROVIDES EXCELLENT PROTECTION.
 - B. THE USE OF LAP BELTS MAY RESULT IN MORE SEVERE HEAD AND NECK INJURIES.
9. THOMAS BUILT BUS COMPANY 1985
COMPARTMENTALIZATION APPEARS TO WORK AS DESIGNED AND SEAT BELTS WOULD NOT MAKE A SIGNIFICANT DIFFERENCE
10. UNITED STATES DEPARTMENT OF TRANSPORTATION AND NATIONAL HIGHWAY SAFETY ADMINISTRATION JUNE OF 1985
 - A. SCHOOL BUSES ARE THE SAFEST FORM OF SURFACE TRANSPORTATION.
 - B. NHSTA BOARD, ON EXTENSIVE RESEARCH CONCLUDED IN 1977 THAT COMPARTMENTALIZATION IS AN "AUTOMATIC" SYSTEM TO PROTECT

- CHILDREN EFFECTIVELY IN SCHOOL BUSES WITHOUT REQUIRING SAFETY BELTS.
- C. ALL AVAILABLE TEST DATA AND REAL WORLD ACCIDENT DATA INDICATE THAT THIS CONCEPT HAS WORKED EXTREMELY WELL.
 - D. THE NATIONAL TRANSPORTATION SAFETY BOARD REVIEWED THIS MATTER IN 1983 AND FOUND CURRENT STANDARDS APPEAR TO BE EFFECTIVE IN ELIMINATING OR SUBSTANTIALLY REDUCING THE MAJORITY OF SCHOOL BUS PASSENGER INJURIES. " WE DO NOT BELIEVE THAT FEDERAL REQUIREMENT FOR SAFETY BELTS IN LARGE SCHOOL BUSES IS WARRANTED."

11. NATIONAL TRANSPORTATION SAFETY BOARD MARCH OF 1987

- A. BASED ON THE FINDINGS OF THIS STUDY, THE SAFETY BOARD DOES NOT RECOMMEND THAT STATES OR SCHOOL DISTRICT ALLOCATE FUNDS TO RETROFIT OR ORDER LARGE POSSTANDARD SCHOOLBUSES WITH LAP BELTS FOR PASSENGERS. THE SAFETY BOARD ALSO DOES NOT RECOMMEND THAT FEDERAL SCHOOLBUS SAFETY STANDARDS BE AMEND TO REQUIRE THAT ALL NEW LARGE SCHOOLBUSES BE EQUIPPED WITH LAP BELTS FOR PASSENGERS. THE SAFETY BENEFITS OF SUCH ACTIONS, BOTH IN TERMS OF REDUCED INJURIES FOR SCHOOLBUS PASSENGERS AND IN SEAT BELT USE HABIT FORMATION, HAVE NOT BEEN PROVEN.

ORGANIZATIONS OPPOSING SEAT BELTS IN LARGE BUSES

- 1. KANSAS ASSOCIATION OF SCHOOL BOARDS
- 2. KANSAS STATE PUPIL TRANSPORTATION ASSOCIATION
- 3. KANSAS ASSOCIATION OF SCHOOL BUSINESS OFFICIALS
- 4. KANSAS UNITED SCHOOL ADMINISTRATORS
- 5. KANSAS NATIONAL EDUCATION ASSOCIATION

NATIONAL ORGANIZATIONS

- 1. NATIONAL ASSOCIATION OF PUPIL TRANSPORTATION
- 2. NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
- 3. CANADIAN GOVERNMENT
- 4. UNITED STATES DEPARTMENT OF TRANSPORTATION
- 5. ASSOCIATION OF SCHOOL BUSINESS OFFICIALS INTERNATIONAL
- 6. NATIONAL EDUCATION ASSOCIATION
- 7. AMERICAN FEDERATION OF TEACHERS

YOUR HELP IN DEFEATING ANY LEGISLATION FOR SEAT BELTS IN LARGE SCHOOL BUSES WOULD BE VERY INSTRUMENTAL IN HELPING TO PREVENT POSSIBLE INJURIES AND DEATHS.

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