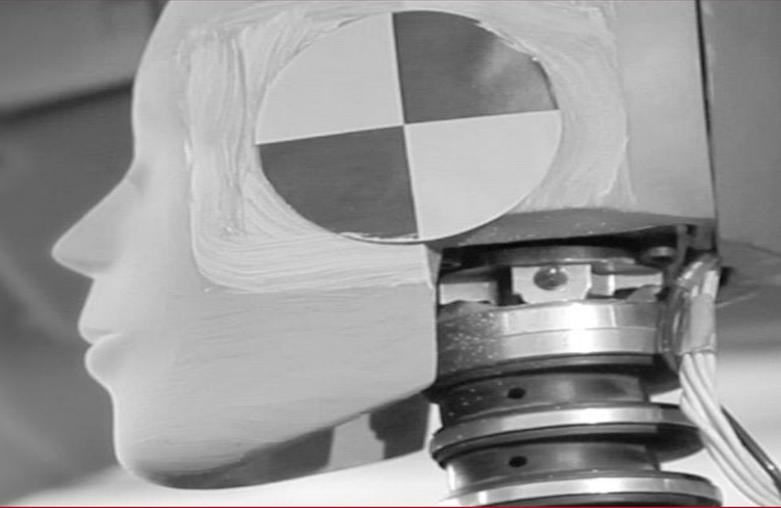


Update on Lap/Shoulder Belts in School Buses



School Transportation Safety
Thinking Outside the Bus
December 1, 2016

Brian Chodrow, NHTSA
Bryan Katz, Ph.D., PE, toXcel
Derek Graham, NC Dept of Public Instruction

Agenda

- Introduction
- NHTSA Project: Education on Proper Use of Safety Belts on School Buses
- Seat Belts on School Buses: North Carolina Initiatives

November 2015

NHTSA Administrator
Rosekind announced
“that school buses should
have three-point seat
belts. Period.”



Some Statistics

- Over the past 10 years, 6.2% of fatal injuries in school bus related crashes were school bus occupants.
- There are over 300 news articles on the use of safety belts on school buses.
- 10 school districts in IN, NC, PA, TX, and WY have added seat belts to new school buses.

State Legislative Activity

- At least 32 states and Puerto Rico have considered legislation.
- Only 6 states require seat belts – CA, FL, LA, NJ, NY, TX
- 10 states considered seat belt legislation in 2016, but none enacted it – AZ, CT, HI, IN, MD, MA, OK, RI, SC, WV.
- In 2013, IN passed legislation:
 - Requiring bus drivers operating with seat belts installed to provide instruction to students on their use.
 - Requiring schools that purchase buses with seat belts to conduct a public hearing to explain the money was not used for other student safety measures.
- TN lawmakers have said they will push legislation after November's fatal crash

Seeking New Information

- NHTSA has evaluated the issue of belts on school buses for many years and continuously seeks updated information to ensure we are appropriately addressing this matter.
 - Are there new technologies and strategies to improve school bus safety and overall school transportation safety?
 - What is the experience of school districts and States that have seat belts on school buses? How are these States obtaining sufficient school transportation funds?
- Updating the In-service School Bus Driver Training
- Reviewing school bus crash data

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Education on Proper Use of Safety Belts on School Buses

Bryan Katz, Ph.D., PE - toXcel

Project Team

- toXcel, LLC
- North Carolina State University's Institute of Transportation Research and Education (ITRE)
- Derek Graham, Consultant

toXcel



Project Objectives

- Understand the decisions that states and local agencies use when deciding to implement seat belts on school buses and the funding mechanisms that are used to pay for seat belt installation.
- Develop a model policy and a best practices guide to assist jurisdictions that are considering the use of seat belts on school buses.
- Obtain data related to the role of distraction and whether seat belts aid in managing behavior on school buses.

Approach

- Identify school districts that use seat belts
- Identify state/local policies that have funded seat belts
- Develop a model policy and best practices
- Identify how seat belts affect student behavior
- Develop final report

Model Policy and Best Practices

- Gather lap-shoulder seat belt acquisition and implementation information from experienced school transportation professionals throughout the U.S.
- Conduct interviews with State directors of pupil transportation and local school district professionals that have established seat belt policies for school buses.
- Develop a Draft Model Policy for State and local school district regulatory bodies to adopt and implement as appropriate and contextually relevant.

How Seat Belts Affect Student Behavior

- Acquire information about bus driver distraction as related to student behavior and seat belt use, with the ultimate goal of determining whether:
 - 1) seat belts deter student misbehavior when used properly.
 - 2) school bus drivers are less distracted by student misbehavior when seat belts are used.

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Seat Belts on School Buses: North Carolina Initiatives

Derek Graham,

State Director of Pupil Transportation

North Carolina Department of Public Instruction

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History: Lap Shoulder Belts

Pilots, testing and implementation in North Carolina



3-Point Restraint Seat Belts in North Carolina

13 Buses - 2003

Delivery of 13 buses to 11 districts; placed into service in January, 2003

- Thomas Built Buses / C.E. White Seats
- Additional cost - \$100,000 for 13 buses
- (state funded)

Implementation

No “mandate” – local discretion

- Each district implemented these buses in the best way that they saw fit
- No requirement to use the belts; however, some districts took the initiative to promote seat belt usage
- Some drivers took their own initiative to enforce use
- Training for driver and passenger were provided when introduced

Lesson Learned:
Don't do it this way!

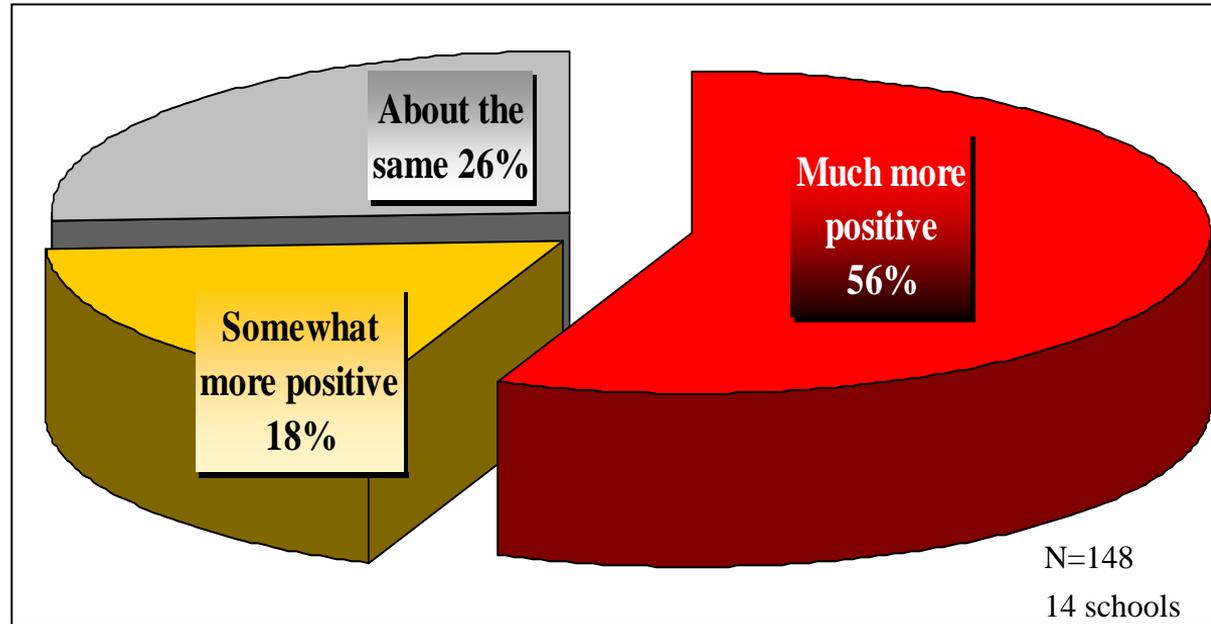




Capacity Issues

Fixed positions regardless of passenger age/grade/size

In general, how would you describe your view of lap/shoulder belts in buses now compared with before your child rode the bus with lap/shoulder belts?



Principal's Perspective

- Saw improvement of bus discipline problem
- Seatbelts in the bus will not increase school bus ridership
- Difficult to enforce
- At least one principal preferred an adult monitor over belts

Drivers' Perspective

- Driver generally liked the 3-point restraint seats. Most noted the longitudinal activities (fore/aft) are totally absent, however could not discern if this was due to high back seat or attributed to seatbelts.
- It will be an added distraction for drivers to monitor and to enforce passenger belt usage.
- Due to high seatback, drivers cannot see but the tallest students. This was especially a concern for middle and high school.

INDUSTRY RESPONDED BY ELIMINATING FIXED SEATING POSITIONS

Lap-Shoulder Belts with FlexSeat 2007

Cumberland County Schools



Reasons for Involvement

- Rollover Sept. 12, 2007
- Increased parent interest in lap-shoulder belts for improved safety
- Led to involvement in FlexSeat program



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Feedback from Driver

- Was best year ever for driver in his 15 years of driving for CCS
- Seat belt usage consistent
- Policies helpful in reinforcing usage
- Reduction in behavior problems dramatic
- Other drivers ask about lap-shoulder belts and want their buses equipped
- Increased driver satisfaction
- Driver was diligent about seat maintenance



What We Learned

- Behavior improvement significant
- Parent satisfaction strong
- Policy is of great value
- Team effort required between schools, administration and parents
- Ongoing training is helpful
- Continuous communication is necessary

School Bus Driver Shortage in NC

- Good Economy provides other opportunities for potential drivers.
- Drivers are leaving because of discipline issues on school buses
- Keeping students in their seats reduces discipline problems

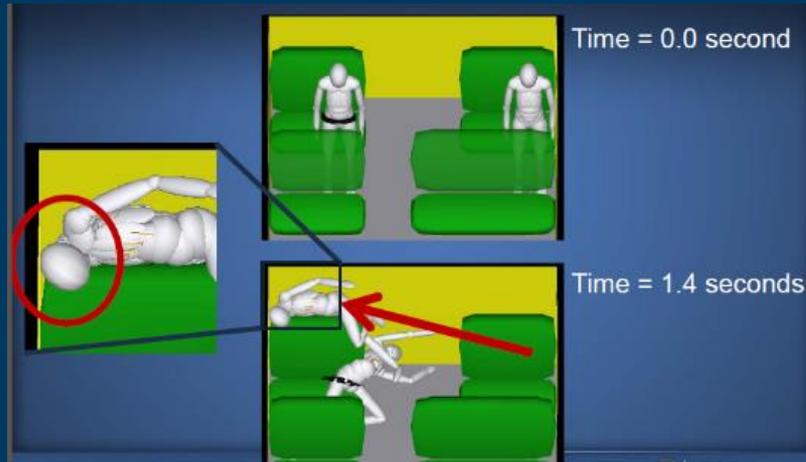
National Highway Traffic Safety Administration

- Stated purpose, “to address the challenges and barriers that have prevented schools from taking action to install three-point seat belt systems in school buses,” and, “operational challenges, new approaches for funding, seating capacity, training for drivers, parents, and students, and other issues”



National Transportation Safety Board Studies of Fatal Crashes

Students using a lap/shoulder belt fared significantly better than those using a lap belt or no restraint system at all



Results from an Indiana District

Overall – TREMENDOUS SUCCESS

- Unexpected Surprise - Discipline went down by 90-95%
- Improved Safety – No injuries
- Driver Attitude – Complete turn-around – now asking for buses with lap-shoulder belts

Improved Student Behavior Video Evidence



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School Bus Driver Shortage in NC

- Keeping students in their seats reduces discipline problems
- Districts given an opportunity to request lap/shoulder belts on new, replacement school buses provided by the state

Rollout of 82 buses with lap shoulder belts 2016

- **Technical assistance provided by**
- **Operations Research in Education Laboratory**
- **Institute for Transportation Research and education**
- **Centennial Campus @ North Carolina State University**
- **June 21, 2016**



NC Implementation Approach— August 2016



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Lap/Shoulder Belts on Buses

11 LEAs for 2016-2017; 12 LEAs for 17-18
82 buses for 2016-2017; 99 more for 17-18

Selected as an option by the local education agency (LEA) on replacement school buses funded by the state.

LEA agrees to a required use policy

Early results:

*Better accepted by elementary
Drivers report improved discipline
Adopting a policy and enforcing
the policy are different things*



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Participating Districts

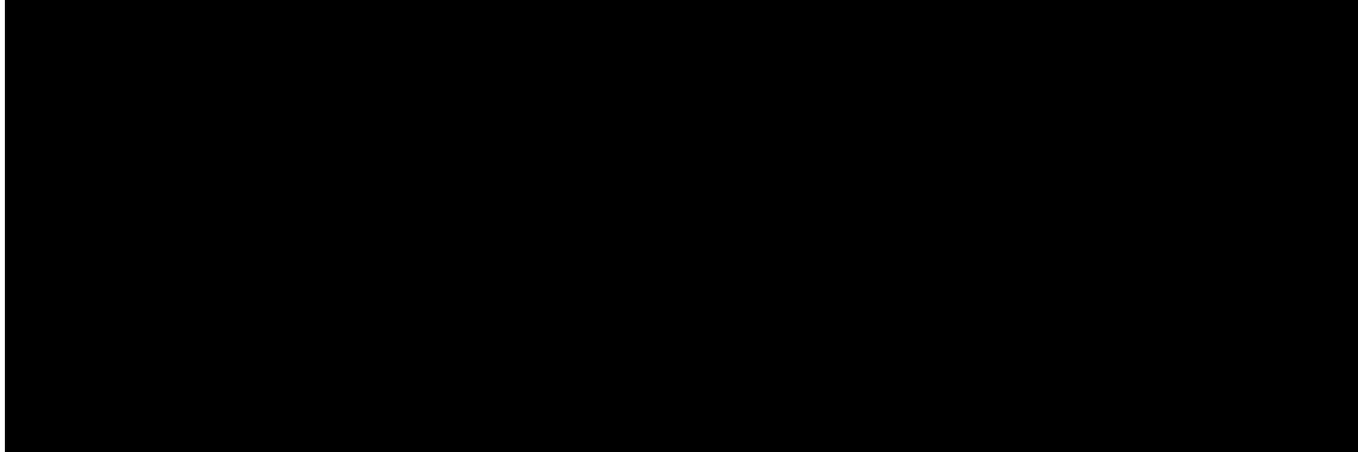
- Burke
 - Jackson
 - Henderson
 - Transylvania
 - Carteret
 - Person
 - New Hanover
 - Guilford
 - Rowan
 - Surry
 - Washington
- Rutherford (2017)



Project

NC DPI initiated a research partnership with the Institute for Transportation Research and Education (ITRE) at North Carolina State University) and a researcher with the Highway Safety Research Center (HSRC) at the University of North Carolina at Chapel Hill. These partners bring local and national expertise in **bus operations** and **passenger safety** research and practice.

One of the initial deliverables was an implementation tool kit, which may be found at <http://www.ncbussafety.org/seatbelts.html>



High School. Some wearing belts, Some not.



Driver checking / reminding



Safer drivers

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