

History of Seat Belts and Passenger Restraint

The first U.S. patent for [automobile](#) seat beats was issued to Edward J. Claghorn of New York, New York on February 10, 1885. Claghorn was granted United States Patent #312,085 for a Safety-Belt for tourists, described in the patent as "designed to be applied to the person, and provided with hooks and other attachments for securing the person to a fixed object."

Swedish inventor, Nils Bohlin invented the three-point seat belt - not the first but the modern seat belt - now a standard safety device in most cars. Nils Bohlin's lap-and-shoulder belt was introduced by Volvo in 1959.

Seat Belt Terminology

- 2-Point Seat Belt: A restraint system with two attachment points. A lap belt.
- 3-Point Seat Belt: A seat belt with both a lap and a shoulder portion, having three attachment points (one shoulder, two hips).
- Lap Belt: A seat belt anchored at two points, for use across the occupant's thighs/hips.
- Lap/Shoulder Belt: A seat belt that is anchored at three points and restrains the occupant at the hips and across the shoulder; also called a "combination belt".

Car Seats - Child Restraints

The first child car seats were invented in 1921, following the introduction of the [Henry Ford's](#) Model T, however, they were very different from today's car seat. The earliest versions were essentially sacks with drawstring attached to the back seat. In 1978, Tennessee became the first American State to require child safety seat use.

The History of Seat Belt Development

This chronology of events related to the development and use of occupant securement systems in motor vehicles, including school buses, may provide some perspective to those unfamiliar with this topic.

Information presented here is based on research by the National Transportation Safety Board, the National Highway Traffic Safety Administration, the European Commission and other sources. The following chronology has been pieced together from sources including the HAR NTSB/SS-86-03, NTSB Safety Study: "Performance of Lap Belts in 26 Frontal Crashes," pp. 225 - 230. Dates and developments from 1967 onward pertinent to safety belt systems on school buses has been added by the editors of School Transportation News. Information about safety belt developments in Europe is drawn from the European Commission Web site. (School Transportation News is solely responsible for the contents of this history.)

2012

An amendment to legislation in Missouri on allowing external advertisements on the sides of school buses includes a provision that advertising will only be allowed in newly purchased buses with model years of 2015 or newer that are [equipped with safety restraint systems for students](#).

The National School Transportation Association [publishes a paper](#) in March that outlines the safety, cost and operational factors that state and local policymakers should consider when looking at developing a mandate for seat belts in school buses.

In February, Collins Bus Corporation [announced](#) its line of Type A Collins Bus, Mid Bus and Corbeil school buses will come standard with the SafeGuard XChange seat from IMMI that allows bus operators to convert a base bench seat to one with three-point, lap-shoulder belts.

2011

The industry awaited the Oct. 21 effective date of NHTSA's upgrade to school bus passenger crash protection that was finalized in 2008. The new rule requires all Type A school buses under 10,000 pounds to roll off manufacturing lines with installed three-point, lap/shoulder restraints. The update also publishes performance standards for these lap/shoulder belts voluntarily installed on large Type C conventional or Type D transit-style school buses with a gross vehicle weight rating of more than 10,000 pounds. Seat backs must also be raised to 610 mm (24 inches) from the previous standard of 508 mm (20 inches), and the seats must come equipped with a self-latching mechanism on seat bottom cushions that are designed to flip up or be removable without tools.

In August, [NHTSA denied a petition](#) brought by the Center for Auto Safety and 21 other organizations or individuals that sought a federal requirement for lap/shoulder seat belts on large school buses. NHTSA said school buses are already one of the safest vehicles on the road, and a requirement for the three-point restraints could actually result in more student fatalities each year because of reduced ridership on buses. NHTSA estimates that the seat belts incur an incremental cost of \$5,485 to \$7,345 per bus.

IC Bus announced in July that it had partnered with IMMI to develop the BTI Seating System that makes it easier for school districts to upgrade to three-point seat belt systems. The entire seat back can be removed in a matter of minutes and replaced with a seat back equipped with the seat belts or integrated child safety restraints without the need to reconfigure the bus floor. The BTI Seating System was expected to be in production by October.

In May, IMMI announced that it was finalizing testing on a new seating line that would enable customers of Thomas Built Buses to more easily upgrade existing bench seats to three-point, lap/shoulder belts or integrated child safety seats. The XChange Seat allows school bus operators to swap out existing seat back modules and replace them in a matter of minutes with modules equipped with the restraint systems. IMMI said the new seat was expected to go into production in the fall.

2010

On Oct. 29, the National Highway Traffic Safety Administration published three proposed changes to the October 2008 final rule on seat belts in school buses centering on how the height of occupant torso belts are measured, integrated seat belts for wheelchairs and the self-latching requirement for seat cushions.

A University of Alabama study group formed in response to a fatal Huntsville school bus crash three years earlier published its final report to Gov. Bob Riley and the Alabama Department of Education that the funds required to equip school buses with seat belts is best spent mitigating student injuries and fatalities that occur during loading or unloading.

Passed in 2007, a Texas law requiring lap/shoulder seat belts on newly manufactured school buses went into effect on Sept. 1 only for those school districts seeking to receive reimbursement for the additional cost of these school buses from the state. This makes the state requirements for implementation of school bus seat belts voluntary, only holding school districts to the letter of the law if they received state funding. But absent was the \$10 million in funds authorized by the state legislature to reimburse school districts. That pot of money shrunk to \$3.6 million in January by the Texas Education Agency after Gov. Rick Perry ordered at least a 5 percent cut of programs statewide. The Legislative Budget Board signed off on the allocation of funds on Sept. 2. At this writing, TEA was working out details before issuing further guidance to school districts informing them of the procedures to follow when applying for the grant money. This was likely to occur in October 2010 with funds being disbursed by the end of the year, according to a TEA spokesperson. The Texas Transportation Institute completed a draft implementation plan in June and submitted it to the Legislative Budget Board, which released the plan publicly on Sept. 2. TEA issued guidance to school districts in October on how to go about applying for the voluntary funds.

In response to the Jan. 9 death of a 16-year-old boy during a crash involving a school bus and a car driven by another teen, the first school bus fatality in the state over the past four decades, a Quinnipiac University survey of nearly 1,600 voters in Connecticut found that three out of four respondents favored a new law requiring seat belts on school buses. Resulting legislation to require three-point belts statewide eventually reached the compromise of an optional program that provides a revenue stream to school districts and

private school bus operators that choose to purchase new school buses equipped with the occupant restraint systems.

A Minnesota state legislator introduced a bill in January that would require 3-point lap/shoulder restraints on all large buses manufactured after Dec. 31, 2010. The bill would also protect school districts, school bus drivers, other school employees or volunteers from wrongful death lawsuits brought about by any student fatality the might occur onboard the school bus that was related to the use of seat belts or lackthereof. All students would be required to buckle up in school buses equipped with the passenger safety restraints unless the school received and filed a letter from a child's parents or guardians that excused them from wearing their seat belt.

Meanwhile, for the second consecutive legislative session, Colorado lawmakers reject a bill that would have mandated three-point lap/shoulder restraints on school buses. They cited as reasons the added cost to vehicle purchases and the existing safety record of school buses. The state has not seen a fatality on board a school bus since 1989.

2009

NHTSA conducted a follow-up study that agreed with a 1986 study that concluded that that school buses without seat belts have little if any carryover effects to school children and if they use a seat belt in a personal vehicle.

No new state legislation had yet passed to require seat belts in school buses, although Wyoming came close to seeing a law.

2008

The National Highway Traffic Safety Administration issued on Oct. 15 a long-awaited final rule that updated FMVSS 207, 208, 210 and 222 by requiring all new Type A school buses that weigh 10,000 pounds or less and that are manufactured on or after Sept. 1, 2011 be equipped with three-point, lap/shoulder belt systems. NHTSA stopped short of requiring the seat belts on all school buses, instead opting for voluntary requirements for equipping large buses weighing more than 10,000 pounds with systems. NHTSA said the requirement will cost the industry about \$100 million to implement and on average will save one life a year

The NPRM also called for seat back heights in all buses to be raised to 24 inches from the current requirement of 20 inches and for a self-latching mechanism on all seat bottom cushions.

Later in October at annual conference of the National Association for State Directors of Pupil Transportation Services. Dr. Roger Saul, director of NHTSA's Vehicle Research and Testing Center, said further side-impact crash testing was not necessary to show whether lap/shoulder belts in large buses should be a requirement and that their installation should

be a voluntary choice made by states or local school districts.

2007

U.S. Department of Transportation Secretary Mary E. Peters announces "first ever federal rules for three-point belts" the morning of Nov. 19 at Morrisville Elementary School in Raleigh, N.C. A Noticed of Proposed Rulemaking calls for three-point lap/shoulder belts on all Type A school buses (GVWR of 10,000 pounds or less) due to their higher rate of rollover in crashes than large Type C and Type D school buses (GVWR greater than 10,000 pounds). While calling lap/shoulder belt and school bus compartmentalization "optimum protection," NHTSA only issues guidelines for voluntary use of the passenger safety systems in large school buses due to potential reduced passenger capacity, which could lead to more student deaths each year in other vehicles during the normal school commute. NHTSA also cites the increased costs of three-point belts. Instead, NHTSA calls for an increase in seat back heights to 24 inches from their current 20 inches, implementing test procedures for all three-point seat belts in buses to ensure strength of the anchorages and the compatibility of the seat with compartmentalization and requiring all school buses with seat bottom cushions designed to flip up for easy maintenance to have a self-latching mechanism.

The NPRM was based on a NHTSA-sponsored school bus seat belt summit held in Washington, D.C., on July 11 to discuss the feasibility of three-point lap/shoulder belts on school buses.

A month earlier, on June 8, Texas Gov. Rick Perry signed House Bill 323, the nation's second state law requiring three-point lap/shoulder belt systems on all new school buses. It goes one step further than a similar law in California by including charter and multi-function school activity buses purchased after Sept. 1, 2010. There was no funding immediately appropriated. An aide of Sen. Eddie Lucio, Jr., the bill's primary sponsor, said the legislature will be tasked with appropriating the difference between the current cost of newly purchased school buses and that of new buses equipped with the new occupant securement systems.

2006

A Missouri legislator introduced on Feb. 6 House Bill 1673, which would have required all newly purchased school buses to be equipped with 3-point lap/shoulder belts as of Jan. 1, 2007. [Click here to read the article.](#) The bill failed but the legislator vowed to try again.

2005

On Dec. 14 several Michigan legislators introduced a curiously worded bill that would require safety belts on public and private school buses "owned, leased or operated" beginning Jan. 1, 2006. It was unknown if House Bill 5519 contained typos. Calls by School Transportation News to Rep. Lamar Lemmons III, the bill's primary sponsor, for clarification was never

returned.

After several past attempts by the Virginia General Assembly to introduce seat belts on school buses, Del. Robert G. Marshall offered a bill requiring either 2-point lap belts or 3-point lap/shoulder belts, with the variety of securements to be approved by the superintendent of state police, on school buses purchased on or after July 1, 2006. The motion was prefiled on Dec. 13, with the intent to formally offer it on the General Assembly floor on Jan. 11, 2006. HB 51 says "The Board of Education must adopt policies, guidelines, and regulations to ensure that all passengers, including the driver, wear these belts or harnesses or both, whenever the bus is in motion. However, a school bus driver may not be held personally liable for the failure of passengers to wear safety belts as required by the Board's regulations." Meanwhile, HB 84 prefiled by Del. Lionel Spruill on Dec. 16 uses similar language sans a provision reducing driver liability, with an effective date of Jan. 1, 2007. The bills died in a House committee but Spruill told the Associated Press he would try again.

Despite a letter from former NHTSA Administrator Jeffrey Runge to congressional committees in the fall detailing the administration's intent to develop a tool to measure the economic impact of installing the safety belts on school buses, School Transportation Director reported Dec. 7 that NHTSA currently does not have funding in place to fund such an effort during the upcoming fiscal year. A NHTSA spokesman told School Transportation Director, a publication of the Federal News Service, that the administration's School Bus Safety: Crashworthiness Report (see details below under 2002 events) was comprehensive and no new plans existed to study the requirement of lap-shoulder belts on school buses. Charlie Hott, NHTSA's school bus administrator, meanwhile told members of the National Association of State Directors of Pupil Transportation Services and the National Association of Pupil Transportation that proposed rulemaking would most likely occur in late 2006 that would change the federal requirement for seat belts on Type A special needs buses to the 3-point lap-shoulder variety from the currently mandated 2-point lap belt systems. Also, NHTSA would look into proposed regulations for making the 3-point harnesses voluntary on large school buses.

Kansas became the latest state on Nov. 18 to introduce a proposed lap-shoulder belt law for school buses. The state legislature would require all school buses to be equipped with lap-shoulder belts for all seating positions, including a retrofit of the state's fleet of approximately 5,600 existing buses. If passed, House Bill No. 2546 would require all bids for the purchase of any bus to include requirements for the 3-point harness systems. School districts and contractors would be held responsible. Usage of the lap-shoulder belts would be mandatory for all passengers; congruently, the law would neither hold liable the school district, school-bus company nor the driver in the event of passenger injury due to

improperly adjusted or fastened seat belts. The Kansas State Department of Education would be responsible for developing and implementing a school bus safety program that covers behavior of students in the loading/unloading zone, including boarding and egress, and the proper use of the lap-shoulder belts.

On Nov. 6, Western Australia Premier Geoff Gallop announced that seat belts would be introduced throughout the state's "orange" school bus fleet, with retrofits at a price of about \$18 million for 800 buses, speculated one local media outlet. The government later said the seat belts would be of the 3-point lap/shoulder variety. Priority was set for those vehicles that operate on country roads. Non-governmental schools were expected to follow suit and Gallop added that he would push for legislation to ensure compliance. A total cost was said to be forthcoming by the end of the year. The decision was made following an Oct. 21 school bus crash in Baldivis, where emergency responders credited the occupant belt systems with minimizing injuries. Other states were urged to also implement school bus seat belts. The National Transport Council Planning accepted the proposal from Planning and Infrastructure Minister Alannah MacTiernan on Nov. 18. Reece Waldock, CEO of the Public Transport Authority Administration, told SCHOOL TRANSPORTATION NEWS the new 3-point lap/shoulder belt and seating configurations will be compliant with the National Australian Design Rule Standards set forth by the Department of Transport and Regional Services. They will also follow the guidelines of the "National Code of Practice - Retrofitting Passenger Restraints to Buses," which is currently being developed by the National Transport Commission. Western Australia transports approximately 24,000 students to and from school.

Effective July 1, California required all new large school buses (Type I or Type C or D) purchased and/or leased by school districts to be equipped with three-point lap/shoulder belts, bringing in line all state school buses regardless of size (see the 2004 entry, below). The securements will be phased into fleets meaning it could be decades before all state school buses have the 3-point lap/shoulder belts.

Missouri Gov. Matt Blunt took a school bus task force recommendation one very large step further in August by calling for legislation requiring three-point lap/shoulder belts in all state school buses. The governor called to order the task force in the spring after a spate of highly-publicized school bus accidents in the Kansas City area. By the end of the summer, and after taking testimony from a host of school industry experts, safety consultants and seat belt proponents - and taking into consideration the safety benefits of school bus compartmentalization and high seat backs and the recognition by NHTSA and NTSB of the school bus' exemplary safety record, task force members concluded that school districts and school districts alone were in the best position to decide if three-point occupant protection systems on school buses would be both beneficial and financially affordable. Instead, Blunt

opted for the legislative route to potentially force all school districts to add the occupant safety belts. He said he will work with legislature to come up with whatever funding is necessary to assist school districts with compliance.

Meanwhile, the Tennessee state legislature formed a committee to investigate the possibility of requiring three-point lap/shoulder seat belts on school buses and was planning the bill draft process. The committee was unanimously approved in both the House and Senate following a 2003 school bus crash left a 7-year-old girl with a serious brain injury. But a study was never performed. WTVF-TV in Nashville in November questioned House Speaker Jimmy Naifeh on why the committee never met. The media attention prompted him to name members and the committee first met on Dec. 1. If a seat belt mandate is passed, he told School Transportation News the state should provide the necessary funding instead of placing the burden on local government or school districts. An analysis prompted by a separate bill in April 2004 determined that it would cost \$84 million to retrofit all school buses in Tennessee . A phase-in, as old school buses are retired, would cost less than \$6 million a year. The Tennessee Association of Pupil Transportation also told STN that it was in the process of conducting its own cost study and survey to determine the level of support for seat belts on school buses from school transportation officials.

2004

Effective July 1, three-point lap/shoulder belts are required on all new small Type II (also known as Type A or A-1) school buses, carrying 16 or less passengers, in California. On Nov. 9, the state Department of Education issued regulations pertaining to the training of students on how to use the passenger restraint systems. Title 5, Section 14105 of the California Code of Regulations says that all students riding school buses, including the School Pupil Activity Bus (SPAB), "shall be instructed in an age-appropriate manner" on the proper fastening and release of seat belts. The new code, which does not apply to special needs students or in cases of emergency evacuation, describes the appropriate positioning of the lap-shoulder belt snug across the shoulder and chest, away from the neck, and low and tight across the pelvis area, not the stomach. When not in use, "passenger restraint systems shall be fully retracted into the retractors so that no loose webbing is visible, or stored in a safe manner per the school bus manufacturer's instructions."

2003

On 20 June 2003 the European Commission adopted a Directive making installation of safety belt systems in all types of vehicles placed on the market effective in July 2004. Whereas only private cars have had to be fitted with seat belts to date, this requirement will extend in future to all other categories, particularly minibuses, coaches, light commercial vehicles, lorries and the like. It will affect nearly two million commercial vehicles every year.

[Click here for further details.](#)

Directive 2003/20/EC [PDF or HTML] of the the European Council and the European Parliament, adopted on 8 April 2003, amended 1991 Council Directive 91/671/EEC, and will, when it comes into force in Member States, require the use of seat belts, where provided, in all vehicle categories (M1, N1, M2, N2, M3, N3). In addition, under this new directive, children must use appropriate child restrains in passenger cars and light vans (M1, N1).

The C.E.White Co. introduces the Student Safety Seat, an integrated 3-point lap/shoulder belt seats for use in school buses. The company begins working with school bus OEMs to gain final certification of the system.

IMMI of Indiana introduces the SafeGuard seating system. Safeguard offers a 3-point lap/shoulder belt system for application in school buses. Girardin Minibus is the first school bus manufacturer to offer final certification of the occupant restraint system.

IC Corp. offers an optional 3-point lap/shoulder belt system of its own design in the company's new 2005 CE series of school buses.

2002

The National Highway Transportation Safety Administration publishes School Bus Safety: Crashworthiness Report, its study about the next generation of occupant protection in school buses that Congress ordered in 1998. [large PDF file]. This report is the first to suggest an active occupant restraint system for school buses; previously, compartmentalization offered only a passive occupant restraint system.

2001

The state of California extends implementation of AB 15 that requires lap/shoulder belts on all new school buses purchased after January 1, 2002. The new law, SB 568, requires lap/shoulder restraint systems in new Type 2 small school buses by July 1, 2004, and lap/shoulder restraint systems in new Type 1 large school buses by July 1, 2005. The measures only affect new school buses procured after those dates. Retrofitting would not be permitted.

The country of England requires compliance with an EU Directive that minibuses, coaches and buses (apart from those designed for urban use with standing passengers) first used on or after 1 October 2001 must have seat belts fitted by the manufacturer. The seat belts must be fitted in all forward and rearward facing seats. Moreover, children on organized trips in minibuses and coaches must be provided with forward facing seats with seat belts. In minibuses and coaches first used on or after 1 October 2001, which have seat belts and anchorages that meet the EU Directive requirements, children may also be provided with

rearward facing seats with seat belts.

2000

Minnesota State Legislature enacts the Education Omnibus bill which includes language authorizing seat belts installed in new school buses. The bill mandates education of proper use, model training and addresses liability issues. See Minnesota Seat Belts in School Buses Bill H.F No. 935. No funds were appropriated to implement the law, and the appropriation expired June 30, 2001.

1999

Florida enacts law requiring that "each school bus that is purchased new after December 31, 2000, and used to transport students in grades pre-K through 12 must be equipped with safety belts or with any other restraint system approved by the Federal Government" The law does not require school buses purchased prior to December 31, 2000 to be equipped with safety belts. Legislation also required 28" seat backs. See Title XXIII Motor Vehicles Chapter 316 Florida State Uniform Traffic Control 316.6145

California enacts law requiring improved occupant restraint systems on large school buses. California law specifically mentions "lap and shoulder restraints." For new buses purchased after January 1, 2002.

Louisiana enacts law requiring school buses used to transport children be equipped with occupant restraint systems. The law to become effective June 30, 2004.

Officials in Louisiana, California and Florida announce they will wait for the National Highway Traffic Safety Administration to complete an occupant protection study before deciding the exact system to use.

1998

The National Highway Traffic Safety Administration sends a report to Congress titled, "School Bus Safety: Safe Passage for America's Children," announcing a two-year research project to develop the next generation of occupant protection systems for school buses. The study is expected to be complete by the July 2000.

1996

Economic Commission of Europe approves amendments to three directives relating to: [1] seat belts, [2] seat belt anchorages, and [3] seat strength for Minibuses and Medium and Large Coaches. Requires 3-point seat belts in all seating positions of minibuses (vehicles of less than 3.5 tonnes) and at least 2- point belts.

1995

Great Britain requires seat belts on mini buses used in school transportation

1992

New Jersey becomes the second state in the nation to require seat belts on large school buses. Use is mandatory. Legislation also required 28" seat backs.

1991

The European Union adopted Directive 91/671/EC on 16 December 1991 imposing the compulsory use of safety belts in all seats, where fitted, starting January 1993. The Directive applies to vehicles of the categories M1 (i.e. private cars) and N1 (light vans), and also the category M2 (minibuses, i.e. buses weighing less than 5 tons). This included minibuses used in school transport. The directive also applies to vehicles weighing less than 3,5 tonnes or minibuses containing specially designated standing areas. This Directive does not cover buses and coaches carrying more than 9 persons, but there are requirements regarding the fitting or installation of seat belts for these vehicles.

1987

New York becomes the first state in the nation to require two-point seat belts on large school buses. Use of the lap belts is not made mandatory but is dependent on individual school districts adopting a policy requiring their use. Legislation also required 28" seat backs.

1986

A NHTSA study conducted by Gardner, Plitt, and Goldhammer concludes that whether seat belts were installed on school buses had little effect on a student's use of seat belts in personal vehicles. Students reported that parents and mandatory seat belt laws played a significant role on their seat belt use in personal vehicles.

1985

Nova Scotia makes belt use mandatory, front and rear

Norway makes rear seat belt use mandatory in vehicles registered after 1/84 (front seat use mandatory since 9/75)

New York makes belt use mandatory, front and rear (in rear for persons 10 years or older)

Mercedes-Benz introduces driver side air bag with knee bolster (in addition to pre-tensioned 3-point belts) in U.S. market

1984

Austria makes belt use mandatory in rear for cars with vehicle approval after 1/84 (front seat use mandatory since 7/76)

West Germany makes rear seat belt use mandatory in cars manufactured since 5/79

(mandatory use in front since 1/76)

Seven of Canada's 10 provinces by this time require occupants of moving vehicles to use whatever set belt system is available to them

1983

New Brunswick and Ontario make belt use mandatory, front and rear (front seat use mandatory in Ontario since 1/76)

Saab introduces 3-point in rear in all models sold in U.S. (had provided "for years" in Scandinavia and Europe)

1981

NHTSA rescinds requirements for eventual installation of passive restraint systems

1980

Mercedes-Benz provides driver side airbag and knee bolster, and pre-tensioner on all 3-point belts

1979

France mandates seat belts in rear: either 3 lap belts or 3-points at outboard positions and lap belt at center (most manufacturers choose later option)

New Zealand requires 3-point belts, front and rear outboard positions

1977

Federal Motor Vehicle Safety Standard 222 "School Bus Passenger Seating and Occupant Protection" promulgated through rulemaking by the National Highway Traffic Safety Administration.

The European Union adopted a directive about the fitting of occupant restraints.

1976

The first European Union Directive concerning seat belt anchorage was adopted in this year.

1975

Sweden requires 3-point, ELR belts in rear; mandates front use by persons 15 and older

1974

GM becomes the first automaker to develop and offer air bags in production vehicles. Offers dual air-bag-equipped Cadillacs, Oldsmobiles and Buicks, hoping to sell 100,000 a year. Drops effort three years later after selling only 10,000 ***

Mercedes-Benz provides ELR on 3-point belts in midsize (300 Series) cars

Sweden requires ELR on belts in front seats

NHTSA requires 3-point belts (i.e., non-detachable shoulder straps) in front outboard positions

U.S. cars provide "vehicle-sensitive" ELRs in front outboard shoulder belts (lap belt portion has ALR)

First production tension relief device on U.S. vehicle.

1973

Mercedes-Benz provides ELR on 3-point belts in large ("S" class) cars

General Motors manufactures 1,000 Chevrolets equipped with experimental air bags and provides them to fleet customers for testing

An Oldsmobile Toronado, first car with a passenger air bag intended for sale, rolls off assembly line

1972

NHTSA begins rulemaking leading to Federal Motor Vehicle Safety Standard 222: Occupant Seating Protection in School Buses

Volvo introduces adjustable B-post anchor point (not standard) to permit better fitting of shoulder portion of front lap/shoulder belts

Last Australian state law requiring belt use, front and rear, goes into effect 1/1

New Zealand requires belt use, front and rear

W. Germany requires 3-point belts, front and rear

NHTSA requires anchorages for (detachable) shoulder straps for rear outboard (FMVSS 210)

VW displays 3-point belt system with webbing pre-tensioner (Transport 72, Washington, D.C.)

1971

Ford builds experimental air bag fleet

Volvo provides ELRs as standard in rear, all markets

NHTSA amends FMVSS 208 to require passive restraints in front, to be effective 1973

New South Wales requires use of seat belts

1970

Sweden requires belts in rear (diagonal and static allowed; lap-only not approved)

Victoria, Australia requires 3-point belts, front and rear and mandates use, front and rear

1969

Sweden requires 3-point belts of approved type in front

Volvo provides 3-point belt in rear as standard, all markets

Mercedes-Benz adds 3-point belt in rear outboard seats as standard, all markets

Japan requires seat belts, front and rear

Australia requires 3-point belts, front outboard seats, all cars registered since 1965

1968

Volvo provides emergency locking retractors (ELRs) as standard in front, in Sweden

Great Britain requires retrofit of 3-point belts in front in MY 65 and newer cars

Many U.S. cars this MY provide ALRs.

1967

Society of Automotive Engineers study at UCLA leads to calls for two-point seat belts, highback seats and other occupant protection strategies for school buses.

U.S. manufacturers provide lap belts at rear outboard positions (MY 1967)

NHSB issues initial Federal Motor Vehicle Safety Standards 208, 209, setting standards for lap and shoulder belts in front outboard positions, lap belts in all other positions (to take effect 1/1/68 and 3/67, respectively)

Volvo introduces 3-point belt in rear as standard, certain markets

Great Britain requires 3-points in front outboard positions

Australian standard for belt anchorages issued

South Australia requires seat belts (lap belts OK) at front outboard positions

1966

Swedish regulations prohibit 2-point cross-chest diagonal belt at seats next to a door, and Y-type of 3-point belt altogether

U.S. Commerce Dept. issues revised seat belt standard (SAE j4c)

U.S. Congress passes P.L. 89-593, establishing National Highway Safety Bureau (now NHTSA)

Sports Car Club of America requires competing drivers to wear a shoulder harness as well as a lap belt (perhaps 1967, according to ref. 131)

1965

Rules for School Bus Passengers were published in the NSC Fleet Safety newsletter.

U.S. Commerce Dept. issues first seat belt standard (adopted SAE standard)

SAE issues revised standard (J4c)

All U.S. manufacturers providing lap belts in front outboard positions by this time

Some U.S. manufacturers provide automatic locking retractors (ALRs) in front seat belts

1964

About half the U.S. States require seat belt anchorages at front outboard

Most U.S. manufactures provide lap belts at front outboard seat positions

Victoria and South Australia require seat belt anchorages at front outboard positions in new cars (either 2- or 3-point permitted)

1963

Questions of whether to install seat belts in school buses were answered by the director of Florida's State Department of Education at the National Safety Council's Division Midyear Meeting.

Volvo introduces 3-point belt in front as standard, in USA

Some U.S. manufacturers provide lap belts in front outboard positions (23 States have laws to requires belts in front, most effective 1/64)

SAE issues revised standard (J4a)

U.S. Congress passes P.L. 88-201 to allow Commerce Department to issue mandatory standards for seat belts sold in interstate commerce

1962

Virginia Trailways reported to be the first U.S. bus company to install passenger safety belts.

Association for Aid to Crippled Children and Consumers Union sponsor landmark conference on "Passenger Car Design and Highway Safety" with occupant protection the sole theme

Six U.S. States require front outboard seat belt anchors

U.S. manufacturers provide seat belt anchors in front outboard as standard

1961

SAE issues standard for U.S. seat belts (J4)

New York requires seat belt anchors at front outboard seat positions (effective January 1, 1962)

Wisconsin requires seat belts in front outboard seat positions

Standards Association of Australia issues standard for "safety belts and harness assemblies"

1960

New York again considers and again rejects seat belt bill

1959

Volvo introduces 3-point belt in front as standard, in Sweden

New York considers and rejects bill to require seat belts in new cars sold in State

1958

Nils Bohlin, a design engineer with Volvo in Sweden, patents the "Basics of Proper Restraint Systems for Car Occupants," better known as a three-point safety belt. The device comprises two straps, a lap strap and shoulder strap. **

Volvo provides anchors for 2-point diagonal belts in rear

1957

Volvo provides anchors for 2-point diagonal belts in front

Special Subcommittee on Traffic Safety, U.S. House of Representatives, opens hearings on effectiveness of seat belts in automobiles

1956

Volvo markets 2-point cross-chest diagonal belt as accessory

Ford and Chrysler offer lap belts in front as option on some models

Ford begins 2-year ad campaign based on safety, focusing heavily on belts

1955

California Vehicle Code is amended to require State approval of seat belts before their sale or use

National Safety Council, American College of Surgeons, International Association of Chiefs of Police vote to support installation of lap belts in all automobiles

Society of Automotive Engineers (SAE) appoints Motor Vehicle Seat Belt Committee

1954

Sports Car Club of America requires competing drivers to wear lap belts

American Medical Association House of Delegates votes to support installation of lap belts in all automobiles

1953

Colorado State Medical Society publishes policy supporting installation of lap belts in all automobiles

1930s

Several U.S. physicians equip their own cars with lap belts and begin urging manufacturers to provide them in all new cars

Sources:

Dates and developments from 1977 to present pertinent to occupant protection in school buses, added by School Transportation News.

* HAR NTSB/SS-86-03, NTSB Safety Study: "Performance of Lap Belts in 26 Frontal Crashes," pp. 225 - 230

** "TRAFFIC SAFETY," National Safety Council, March/April 1998