

While seats have always been a popular topic in the bus industry, seat belts were rarely mentioned prior to 2008. Now, with the mandate for three-point seat belts effective in November of 2016, seat belts have not only become more important but they have also become a target for litigation.

In the past few months I have served as an expert witness in two different bus lawsuits involving seat belts and have provided information to others. It is more than likely that litigation involving seat belts will not go away, particularly with the mandate for seat belts on new coaches. This article responds to those who have asked for information and those who will.

I should mention that there have been several articles in previous issues of NATIONAL BUS TRADER dealing with seats and seat belts that might be of value to some readers. The most recent ones include "Motorcoach Seat Belts" in the February, 2013 issue. In August of 2014 we ran an article titled "Motor Coach Seat Belts – Regulations, Retrofitting, Safety and Liability." Our recent March of 2016 issue contained an article titled "How Far Will Seat Belts Improve Safety?" This latest article ended with a section titled "Seat Belt Litigation" that initially prompted this current article.

Before starting, let me offer several comments and disclaimers. To the best of our knowledge, all of this information is correct and current to mid-June of 2016. However, you should check all of this prior to using it in court. In addition, I am not an attorney so please make sure you are working with a attorney of your own who is qualified in your state. However, feel free to pass any of this information on to your attorney or expert witness with our compliments. Finally, since all of this is not only continually shifting but also subject to new legislation and regulations, we would welcome any input and suggestions from readers.

School Buses

I am starting with school buses in order to explain compartmentalization and show its benefits. Much of the excellent safety record of school buses is due to compartmentalization, which has been standard for decades. While we could go into a huge discussion of the technical aspects of compartmentalization, let me greatly simplify things by pointing out three different obvious levels.

In its basic form, compartmentalization is based on having padded seats in front of the passenger and behind the passenger as well as a wall on one side. This effectively "compartmentalizes" the passenger in a given area. Hence, in anything other than a major accident, the passenger is somewhat protected and kept in a limited area.

Bus Seat Belt Litigation

by Larry Plachno



While seats have always been a popular topic in the bus industry, seat belts only became popular in recent years. Not only have three-point seat belts been mandated at the end of 2016, but they now sometimes appear in bus suits. Shown here are some Amaya A-2Ten seats with Fusion Blue Fan Fabric plus beige leather sides and piping and blue leather headrests. MCI.

The next stage would be to control the density of foam in the seatback ahead. When thrown forward, your knees hit the seatback first so the foam here should be the most dense to slow you down. Above this, the density of the foam should be less to absorb the impact of your torso which hits the seatback next. Finally, you would have the least dense foam where your head hits the seat, which happens last.

To go for full compartmentalization, you can then add armrests or some type of partition to restrict movement from side to side. In this area your coaches do better than most school buses because most coaches have armrests.

There is one very important advantage to compartmentalization. It is a passive feature, meaning that you need do nothing to make it work. In comparison, seat belts are useless unless you put on and click them.

Only six or seven states have mandated seat belts on large school buses. The remainder have remained content with compartmentalization. Oddly enough, three states (New York, New Jersey and Florida) have mandated two-point lap belts on large school buses. This is in spite of the fact that the feds and experts say that two-point seat belts can be dangerous and even deadly when used with closely-spaced seats. It is noteworthy that two-point seat belts are often discouraged from being used with youngsters because their internal organs are not fully developed and can be damaged by two-point seat belts.

An interesting side note is that while a few states mandate seat belts on large school buses, only one (New Jersey) requires that they be used by the students.

School buses have developed an enviable safety record based on seat compartmentalizing. Only a few states require seat belts. This group of school buses operates for Mlaker in Davidsville, Pennsylvania. MLAKER.



The Europeans started moving to seat belts in the 1990s. Some of their early regulations differentiated between seats with compartmentalization and those without. Shown here is the interior of a Neoplan double-deck Skyliner equipped with three-point seat belts. NEOPLAN.

Motorcoaches

Historically, the motorcoach industry has enjoyed an enviable safety record for decades. To parody an aviation saying: your trip on the bus is much safer than the drive in your car to the bus terminal. This traditional safety is due to several factors. These include the extra care provided by bus operators. The fact is the bus outweighs most vehicles on the road and hence comes out ahead in a confrontation. The basic compartmentalization keeps the passengers from being thrown around and injured in all but the worst accidents. I might note that

coaches also tend to have arm rests that school buses do not.

A highly compartmentalized seat did show up on the market in about 1995, but it generated no interest. While Europe began installing seat belts in the 1990s, that had virtually no impact on this side of the Atlantic. Some buses imported from Europe showed up with a couple of seat belts on seats that had no seat in front of them for compartmentalization. However, there was no real movement towards seat belts here.

There were at least three reasons for this. One, passengers did not ask for seat belts. Two, as a result the bus companies did not ask for seat belts and the manufacturers and dealers did not offer them. Three, there were no guidelines or laws regarding seat belts at this time so, even if you wanted seat belts, you had no design or material specifications to follow. What is interesting is that what the passengers did ask for was 110-volt outlets and Wi-Fi. As a result, those eventually became an option on new coaches.

This lack of guidelines and laws on seat belts in the United States became a major factor in this situation. Bus companies are typically small businesses with 10 or fewer coaches. It would be very rare for one to have an engineer on staff. Unlike picking the color of your seats or the lettering on the exterior of your coach, installing seat belts and related engineering is critical from the standpoint of safety. There were no federal guidelines for seat belts on new coaches at this time and there still are no federal guidelines for retrofitting seat belts on older coaches.

The motorcoach industry continued to maintain a good safety record so there was no real interest in seat belts until 2008. In that year a major law suit involving a 1998 bus and seat belts resulted in a huge settlement. From that point forward, bus manufacturers and bus operators began to take an interest in seat belts. They optionally became available in the following years on new buses and there was at least some talk about retrofitting.

It was during this period that the feds also started taking an interest in seat belts. While the statistics showed that the motorcoach industry did have an enviable safety record, the statistics also pointed to the causes of the worst accidents with the most fatalities. Numbers from the National Highway Traffic Safety Administration disclosed that 65 percent of the worst accidents were single vehicle accidents. Approximately 29 percent of the worst crashes resulted in a rollover and that 56 percent of the passenger fatalities were caused by passenger ejections from the coach – often through the push-out windows. Hence, the feds became interested in what they called “passenger restraints,” and most of us call seat belts.

Those push-out windows in the United States were mandated because of a head-on crash between two buses in 1952 that caused multiple deaths from the resulting fire. The push-out windows were supposed to allow bus passengers to escape from a bus fire. However, I have yet to hear of anyone using the push-out windows to escape a bus fire while many people have been killed by being ejected from them.

Following the usual announcements and input, the NHTSA made it known in November of 2013 that three-point seat belts would be mandated on new large motorcoaches. This goes into effect in November of 2016. Soon afterward, most new coaches were being ordered with three-point seat belts. There was no mandate to put seat belts on existing coaches.

In August of 2015, the NHTSA issued its “Report to Congress: Retrofit Assessment for Existing Motorcoaches.” It said “no” to retrofitting seat belts in existing coaches and gave several reasons why. Cost was the primary reason. Essentially, the expense of the retrofit exceeded the safety benefit. A second reason given was the lack of use of seat belts – typically only about 10 percent of the passengers use them. A third reason is that with new systems (Electronic Stability Control was specifically mentioned), coaches are safer today than when the study was done that suggested the use of seat belts.

A fourth reason given for not mandating seat belts on used coaches was the engineering and the fact that a retrofit is more expensive and involved than putting seat belts on new coaches. To maintain safety,

guidelines would have to be developed for each model/year coach. This would be a huge and time consuming undertaking. It was estimated that this could not be done prior to 2021, which makes retrofitting totally impractical. This also means that there still are no guidelines for retrofitting seat belts on used coaches.

This lack of guidelines for retrofitting seat belts puts bus companies in somewhat of a Catch 22 situation between legality and litigation. Buses built prior to November of

2016 are legal without seat belts. However, if you have an accident, someone may want to sue you for not having seat belts – in spite of the fact that there are no federal guidelines for retrofitting them.

In retrospect, it looks like the feds probably made the proper decision on coach seat belts in regard to practicality, safety and cost. While putting seat belts on new coaches requires some engineering and more cost, neither is outlandish. I have seen the modification that needs to be

Instead of push-out windows, the Europeans put hammers on the walls between the windows so passengers can break the glass in an emergency. This helps keep passengers inside the bus in the event of a rollover. You might be able to see the hammers in the photo of a MAN Regio C bus. MAN.



Even though the seat belt requirement does not take effect until late 2016, many bus operators have been ordering optional seat belts on their coaches for several years. A significant percentage of newer coaches on the road now have three-point seat belts. Shown here is a Prevost H3-45 operated by Wilson Bus Lines. WILSON BUS LINES.



made to seats. Yes, you need to change things and provide more strength, but the cost is not out of line. However, you cannot say the same thing about retrofitting seat belts on an older coach.

Let me briefly digress to explain a little about seat belt retrofitting on used coaches. You cannot simply put seat belts on existing seats. The seats have to be made for seat belts and strong enough handle the stress of both the seat and the passenger. A new set of seats with seat belts tends to cost between \$25,000 and \$30,000. Add to this the fact that your seat tracks and other fixtures probably need to be replaced or strengthened, and you may have to strengthen the bus structure accordingly. It has been suggested that this procedure would be costly on recent model buses and may be impossible on coaches built prior to 2000.

Hence, the real question on retrofitting seat belts is not retrofitting “yes” or “no” but rather looking at alternatives to get the most safety for the money spent. If you retrofit seat belts on an older coach, you have invested a lot of money into an older coach and the only safety you have received for it is for the 10 percent of passengers who actually wear the seat belts.

Greyhound did a major rebuilding on more than 1,000 102DL3 coaches and included seat belts as one of the many updates. This same kind of thing will not work well for small bus companies because of costs and residual values. The logical thing for a smaller bus company to do to improve safety is to periodically trade in an older coach on a newer one. The newer coach may possibly have several new safety features in addition to seat belts. These can include tire pressure and temperature monitoring, lane departure systems, adaptive cruise braking, fire detection and suppression, a back-up camera and electronic stability control. I might note that all of these new safety features are of value to all passengers on the bus and not just those who put on their seat belts.



While most passengers do not look down here, this is the area of concern when installing seats with seat belts. In many cases the seat itself has to be strengthened as well as seat tracks and some of the understructure. This photo shows seats on a new Setra coach. MCI.

Bus Seat Belt Questions

From what I have seen, these seat belt law suits are typically a search for deep pockets because they can not find money elsewhere to grab. Following are several seat belt questions that might come up with accompanying suggested answers. Feel free to send in additional questions and we will try to answer them.

• **Why do older coaches sold in the U.S. not have seat belts?**

1) Passengers did not ask for them. 2) They were not required by law. 3) There were no guidelines for their installation.

• **Are seat belts always a positive safety feature on coaches?**

No. While it may seem facetious, I have often said that if you tell me what kind of accident you plan to have, I can tell you how to set up your coach to improve

safety. 1) Seat belts are a negative where a quick exit is required such as a fire, smoke, sinking into a lake or river, or a train coming at you. 2) If not installed properly, seat belts can reduce safety instead of increase it. Among other things, the experts do not recommend two-point seat belts, particularly for children. 3) Seat belts have been known to jam up and fail to release when the seats are no longer parallel to the ground.

• **What is the biggest advantage of having seat belts?**

Buses have a marvelous safety record unless they leave the road and roll over. The single biggest advantage of seat belts is to prevent passenger ejections through those questionable push-out windows during a rollover.

• **How often do buses roll over?**

There are typically about two bus rollovers annually. There are about 40,000 coaches on the highways of the United States. This means that the average coach rolls over about once every 20,000 years. Hence, seat belts are important once every 20,000 years for the 10 percent of people who use them.

• **What is required to retrofit seat belts on older coaches?**

1) You need some company do the engineering and stand behind it. 2) Old seats have to be removed and replaced with new seats with seat belts. This alone can cost \$25,000 to \$30,000. 3) Seat tracks and related items must be replaced or improved to accept the additional stress. 4) The frame structure of the bus may have to be strengthened to handle the additional stress.



Putting seats with seat belts on a new coach is not that difficult once the engineering work is done and components are modified. However, retrofitting seats with seat belts on an older coach can be a costly uphill battle. This photo shows Kiel seats on the MCI J4500 displayed at the recent UMA Expo. MCI.

- **Do bus seat belts offer the most safety for dollar spent?**

No. There are numerous other safety features including tire pressure and temperature monitoring, lane departure systems, adaptive cruise braking, fire detection and suppression, a back-up camera and electronic stability control that will increase safety for everyone on the bus and not just the 10 percent who wear seat belts.

- **Why did the Feds not provide guidelines for retrofitting seat belts on older coaches?**

1) Cost too high for the degree of safety achieved. 2) Only 10 percent of the passengers use them. 3) Because of the newer safety systems, the newer coaches are safer than when seat belts were mandated on new buses and, 4) It was difficult and time consuming to develop guidelines for retrofitting seat belts on older coaches.

- **Are there any federal guidelines for retrofitting seat belts on older coaches?**

No. The Feds specifically declined to provide them.

- **Why Not?**

Each make and model would have to be engineered separately to insure safety. That would be a huge and time-consuming task.

- **Could a bus company retrofit seat belts on their own coaches?**

Unless they had a competent engineer on their staff, this would be folly and highly questionable from the standpoint of safety.

- **What is the single best thing a bus company can do to improve passenger safety?**

Have a program in place to prevent driver fatigue and shift inversion. The statistics show that 65 percent of the worst bus accidents were single vehicle accidents – often involving a driver falling asleep, running off the road and the bus rolling over. A bus company that has a program in place to make sure that drivers get a good night's sleep and their starting times are not substantially changed is making a major step towards passenger safety.

- **What is the best use of money to improve passenger safety for small bus companies?**

Regularly upgrade their fleet to new or newer buses with more passenger safety features. With the exception of seat belts, all of these improve safety for all passengers and not just the 10 percent who wear seat belts.

- **Are there any negative factors to installing seat belts?**

Yes. Seat belts and the extra strengthening required for them adds weight to the bus. Manufacturers are already trying to reduce weight because extra weight can make some coaches less safe in regard to suspension, braking, etc. The extra weight also reduces fuel economy and increases pollution. □

This photo was taken at the recent MCI Reliability Rally in Des Plaines, Illinois and shows a Setra seat pair on display. In addition to re-engineering the seats to comply with the regulations, Setra also offers some new seat covers. Noteworthy is the new composite leather material available on several different styles of seats. NBT.



One of the best ways for bus companies to improve passenger safety is to trade older buses in on newer ones that have new safety features including Electronic Stability Control mentioned by the feds. These will increase passenger safety for all passengers, not just those who actually wear the seat belts. This new MCI J4500 was photographed at the MCI facility in Des Plaines, Illinois after arriving from the factory with less than 1,000 miles on it. NBT.



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