Dragging Threat – Nearly 20 Years Later: Students Trapped in Doors – A Five Second Cure to Eliminate this Threat

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Reflections of the Past

Between 1991 and 1997[1] America experienced eight student fatalities as a result of students becoming trapped in handrails while exiting their school bus, according to the AP News Archive. The school bus industry responded by accelerating a voluntary recall of 160,000 school buses where a modification to the handrail was needed to prevent this tragedy from reoccurring. Fortunately, these types of dragging incidents have been eliminated through better design and awareness training. However, recent dragging incidents have drawn attention back to the issues surrounding school bus design and driver training.

Reported Events

The recent school bus dragging incidents have raised concern among parents, school officials, citizens, and the school bus industry. Several students have become trapped in the service door while exiting the bus in recent years. The first media reported incident involving a school bus driver closing the service door on a student wearing a backpack occurred in December of 1998. From 2004 to 2015, in 18 states, there were 31 reported instances where students where shut in the service door.

[1] http://www.apnewsarchive.com/1997/List-of-children-killed-in-drawstring-accidents/id-5be24bb5e16aa7c12feb2a70b01fc3ec

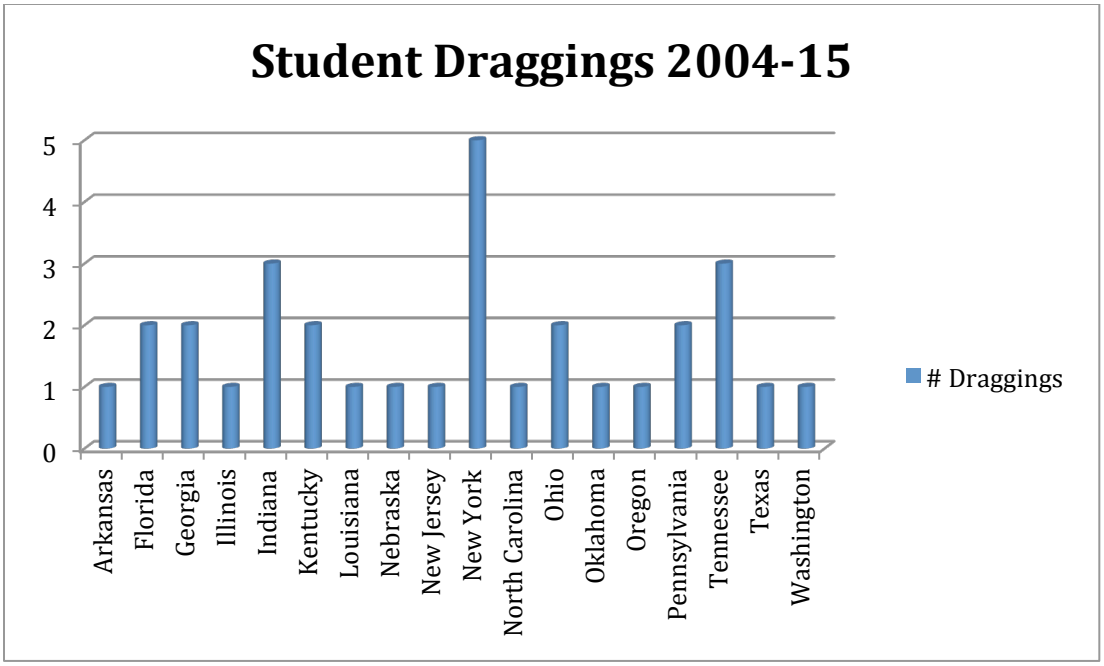

Figure 1 – States with Student Dragging Events

The distances students were dragged ranged from a short distance of less than 20 feet up to as much as 4,752 feet (nine-tenths of a mile). Surprisingly, only two children lost their lives as a result of these preventable events.

	Location	Age/Gender	Part Caught in Door	Feet Dragged
2004	Marianna, FL	Eleven-year-old girl	Backpack	60 feet - Fatality
2004	Columbus, GA	Seven-year-old girl	Backpack	20-40 feet
2005	Toledo, OH	Kindergartener boy	Student's arm	Unknown
2005	Anderson, IN	Nine-year-old boy	Backpack	300 feet
2006	Buffalo, NY	Six-year-old boy	Backpack	60 feet
2006	Valparaiso, IN	Fifth grade - female	Leg and arm	75 feet
2007	Sanford, FL	Six-year-old boy	Backpack	100 feet
2007	Rochester, WA	Eight-year-old girl	Backpack	546 feet
2008	Ellwood City, PA	Nine-year-old boy	Backpack	1,048 feet
2009	Portland, OR	Five-year-old girl	Backpack	30 feet
2009	Wyandotte, OK	Fifteen-year-old girl	Backpack	400 feet
2009	Knox County, TN	Nine-year-old boy	Student's arm	300 feet
2009	Omaha, NE	Five-year-old girl	Unknown	3 houses
2009	Milleville, NJ	Seven-year-old boy	Backpack	City block
2010	Centerville, TN	Eleven-year-old girl	Backpack	Less than 100 feet
2011	Layfette, LA	Unknown age boy	Unknown	20 feet - Fatality
2011	Atlanta, GA	Five-year-old girl	Backpack	40 feet
2011	Lima, IL	Six-year-old boy	Backpack	Nearly a block
2012	Dansville, NY	Eight-year-old girl	Backpack	900 feet
2012	Weslasco, TX	Four-year-old girl	Backpack	Unknown
2013	Gosnell, AR*	Elementary student	Backpack	Unknown
2013	Indianapolis, IN	Five-year-old girl	Backpack	Unknown
2014	Ellwood City, PA	Eight-year-old girl	Backpack	200 feet
2014	Hamilton County, TN	Fifteen-year-old girl	Backpack	Unknown

2014	Akron, OH	Seven-year-old girl	Foot	10 feet
2014	Stockbridge Valley, NY	Five-year-old boy	Backpack	4,752 feet
2014	Lincoln, NY	Six-year-old boy	Backpack	100 feet
2015	Winchester, KY	Six-year-old boy	Jacket	15 feet
2015	Fremont, NY	Unknown age girl	Backpack	2,112 feet
2015	Louisville, KY	Seven-year old girl	Backpack	100 feet
2015	Kernersville, NC	Six-year old girl	Arm	100 feet

Figure 2 – Student Dragging Data 2004-15 (*Note: Earlier version of article dated February 5, 2015 had identified Mississippi as an accident when it should have been Arkansas.)

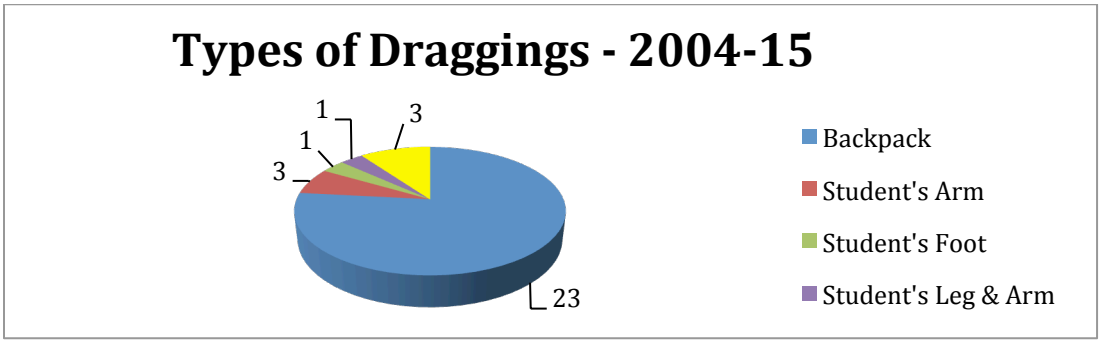

Figure 3 – Types of Student Draggings

	State	Door Type & Switch Location	Feet Dragged
2004	Marianna, FL	Air Door and Left of Wheel	60 feet - Fatality
2004	Columbus, GA	Air Door and Left of Wheel	20-40 feet
2005	Toledo, OH	Air Door and Left of Wheel	Unknown
2005	Anderson, IN	Unknown	300 feet
2006	Buffalo, NY	Unknown	60 feet
2006	Valparaiso, IN	Air Door and Left of Wheel	75 feet
2007	Sanford, FL	Unknown	100 feet
2007	Rochester, WA	Air Door and Left of Wheel	546 feet
2008	Ellwood City, PA	Air Door and Left of Wheel	1,048 feet
2009	Portland, OR	Unknown	30 feet
2009	Wyandotte, OK	Manual Scissor Door	400 feet
2009	Knox County, TN	Unknown	300 feet
2009	Omaha, NE	Unknown	3 houses
2009	Milleville, NJ	Unknown	City block
2010	Centerville, TN	Air Door and Left of Wheel	Less than 100 feet
2011	Layfette, LA	Unknown	20 feet - Fatality
2011	Atlanta, GA	Unknown	40 feet
2011	Lima, IL	Unknown	Nearly a block
2012	Dansville, NY	Air Door and Left of Wheel	900 feet
2012	Weslasco, TX	Unknown	Unknown
2013	Gosnell, AR	Unknown	Unknown
2013	Indianapolis, IN	Unknown	Unknown
2014	Ellwood City, PA	Air Door and Left of Wheel	200 feet
2014	Hamilton County, TN	Air Door and Left of Wheel	Unknown
2014	Akron, OH	Unknown	10 feet
2014	Stockbridge Valley, NY	Air Door and Left of Wheel	4,752 feet
2014	Lincoln, NY	Air Door and Left of Wheel	100 feet
2015	Winchester, KY	Air Door and Left of Wheel	15 feet
2015	Fremont, NY	Air Door and Left of Wheel	2,112 feet
2015	Louisville, KY	Air Door and Left of Wheel	100 feet
2015	Kernersville, NC	Air Door and Left of Wheel	Nearly a mile

Figure 4 – Door Type & Switch Locatios

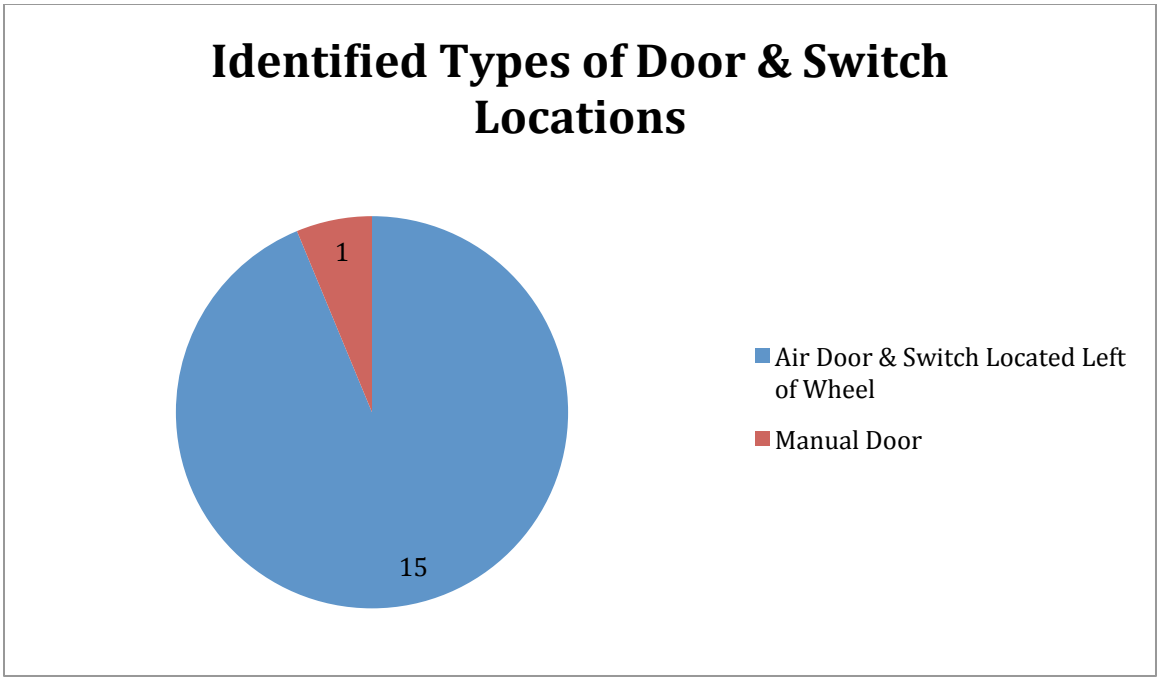

Figure 5 – Door Type & Switch Locations - Note: There were 15 Unknown Types of Door & Locations of Switches could not be confirmed by the operators or contractors.

The details of these incidents are horrifying. In Colebrook, Connecticut in 1998, a seven-year-old boy became trapped by his backpack in the middle of the service door and hung there for nearly fifty feet as the bus proceeded to the next stop. Reported data indicates that a few years passed without any reports of students getting caught in the service doors. However, this could be due to unorganized reporting and data collection of these types of dragging events. In 2005, an Anderson, Indiana nine-year-old boy's backpack was caught in the service door. The student was dragged the length of a football field.

New York State Incidents

New York State transports approximately 2.3 million children to and from school each day on its 50,000 plus school buses. Transporting a higher percentage of children compared to many other states, along with a relatively sophisticated incident tracking system could help explain why the total count of incidents in New

York State is the highest in the nation. New York incidents represent 17.8% of identified dragging reports. The first New York State dragging was reported in 2006, when a six-year-old boy from Buffalo was dragged 60 feet after his backpack was caught in the service door. Six years passed before another dragging event occurred in 2012, when an eight-year-old girl from Dansville, New York was dragged nearly 900 feet when her backpack became caught in the service door. Then, in 2014, a five-year-old boy from Stockbridge Valley, New York was dragged nine tenths of a mile before the bus arrived at the next bus stop and the bus driver noticed the student was stuck in the service doors. The following day in a neighboring school district, a six-year-old boy from Morrisville, New York was dragged approximately 100 feet before the driver noticed the student in the door. Not a month later in 2015, a female student from Fremont, New York was dragged approximately 2,112 feet. Although these New York incidents did not result in any fatalities or serious injuries, we know from experience the outcomes could have been much more tragic.

Figure 6 – Photo Compliments of Fairport CSD, NY

Design Concern

Similar to the handrail snagging bus design flaw, consideration should be given to the actual placement of the service door switch. Typically this switch is located to the left of the driver on the master panel or in the steering wheel. These switch locations require the driver to look away from the door when opening or closing the door. Simply relocating this switch to a place in the sight line of the service door would allow the

driver to look in the direction of the door while operating it. This, of course, is not the complete solution, but perhaps would contribute to efforts that prevent these service door draggings from occurring.

Distractions Are Common

All of these dragging events have one thing in common; they are 100% preventable. Driver distraction during the loading and unloading process is one of the most dangerous challenges a school bus driver faces. Driving a school bus has several distractions, which are built into the job and require the driver to manage their attention. They must make decisions minute-to-minute and even second-to-second as to what to focus their attention on. The two-way radio, student behavior management, traffic congestion, distracted drivers, other motorist errors, bus stop challenges, pedestrians, mental diversions and many other things vie for the driver's attention. Nevertheless, at the moment the student is exiting the bus, nothing is more important than making sure the service door is cleared and the student has moved no less than 15 feet away from the bus before pulling back into the flow of traffic[2]. Managing distraction during this critical time can mean the difference between a student arriving home safely and a heart-breaking service door incident occurring. Certainly, driver distraction is not more prevalent in New York State as the numbers imply. These reported numbers may be higher as New York State Education Department mandates the reporting of such

Figure 7 – 15 feet visually displayed

[2] Photo provided by North Rose-Wolcott CSD, New York. This image reminds all staff on a daily basis just how far 15 feet is as they walk from the break room to the wash bay.

incidents, as opposed to others without the requirement. However, no explanation can justify the lapse on the part of the driver, which puts the life of a child at risk.

Tragedy Prevention Strategies

These twenty-three backpack-dragging incidents could have easily resulted in fatalities if the students had slipped out of their backpacks or a strap came loose. It is important to note that all of these near misses could have been prevented by the simple five-second check that many operations teach their drivers. Prior to moving the school bus after loading or unloading students, drivers need to take five seconds to:

- Check the service door for students
- Scan all mirrors for students outside of the bus[3]
- Check cross-over mirrors to check for students in front of the bus, near the front wheels, and service door area
- **Next to last in the sequence – glance back at the service door to look for students before actually moving the bus**[4]
- Perform mirror sweep once again before pulling out into traffic

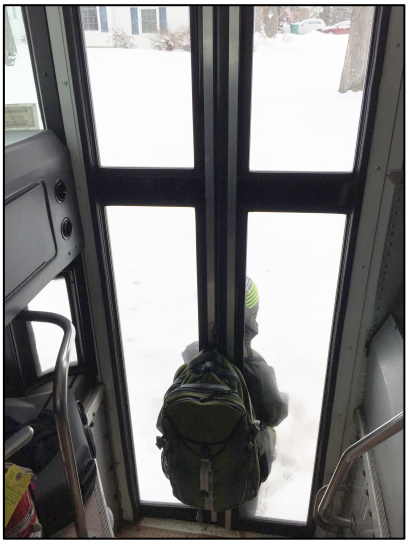

Figure 8 – Note the backpack on the inside of the service door.

[3] Note: It is crucial that all bus mirrors are properly adjusted for each driver. See the Rosco Field of Vision mirror adjusting video at: https://www.youtube.com/watch?v=Cq03OR8VDzg for more details.

[4] Check the entrance door for students near the service door. This often requires the driver to deliberately look down, as their physical position is much higher when students need to descend stairs to exit the bus.

This process must be done without mental or visual distraction. If the driver loses focus in any part of this process, it must be repeated. Drivers must look *and see*, staying mentally present in the task at hand to protect the students they transport. Additionally, instructing students to clear the service door when exiting the bus is an important addition to their safety training. The service door can be a danger zone when not monitored by the school bus driver.

Moving Forward

School bus drivers have chosen their profession because they love and care for children. These dangerous dragging incidents are as alarming to them as they are to all of us in the school bus industry and this motivates us all to a higher level of safety performance. Distraction during the loading and unloading process cannot be allowed to continue unchecked. School bus drivers must be mindful of the dangers of distraction and remain dedicated to the efforts needed to prevent a student from getting caught in the service door. Creating five seconds of undivided attention in the loading and unloading process is critical to ensuring student safety in the service door area. School bus drivers are being called on to respond to a "raising of the bar" in transportation safety. The school bus industry is confident they are up to the challenge.