School Transportation Serious Loss

July 2018

Objectives

Lessons Learned from Serious Loss

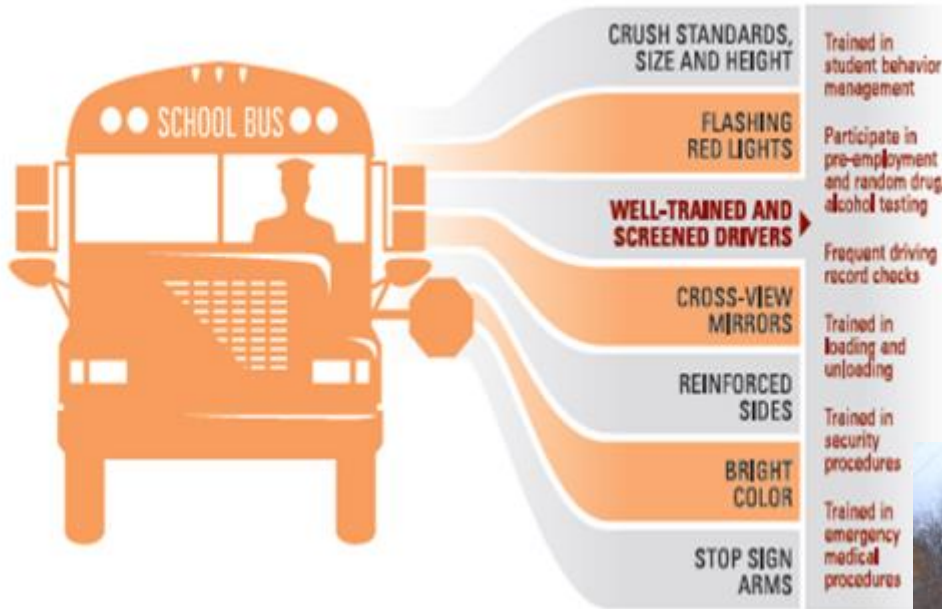Emphasis on best practices: Loss prevention and mitigation

Resources available

Safety has come a long way!

School Buses Today

School buses are designed with specific safety features to protect occupants during a crash. Well-trained school bus drivers add to the safety of each school bus passenger.

CRUSH STANDARDS, SIZE AND HEIGHT

FLASHING RED LIGHTS

WELL-TRAINED AND SCREENED DRIVERS

CROSS-VIEW MIRRORS

REINFORCED SIDES

BRIGHT COLOR

STOP SIGN ARMS

Trained in student behavior management

Participate in pre-employment and random drug/alcohol testing

Frequent driving record checks

Trained in loading and unloading

Trained in security procedures

Trained in emergency medical procedures

Buses are safer today but accidents still occur

Image: NHTSA Safety in Numbers August 2014 publication

| Crash or Loss Type	% of Crash or Loss	% of Incurred
Intersection	24%	19%
Rollover or off road incident	8%	13%
Turning	8%	10%
Pick up and drop off at home	4%	9%
Hit other vehicle in rear	9%	7%
Loading zone incident	4%	5%
Head on	3%	5%
Lane change	3%	4%
Pedestrian	3%	3%
No or vague details	8%	3%
Struck from behind by other	2%	3%
Convoy crash	4%	3%
Fire loss	4%	3%
Stationary object	1%	3%
Totals for 3% or more of Incurred	88%	92%
Grand Total	**100%**	**100%**

Multiple year analysis of losses with $100,000 in incurred loss or more

Intersection Accidents

▸ Largest category from a total $$ incurred and number of loss perspective.

▸ Majority of losses attributed to left hand turns. A few were $1m+ losses.

Failure to Yield the Right of Way is:

▸ Left turns in front of oncoming traffic

▸ Pulling out from side roads in front of traffic.

▸ Disregarding stop sign/light
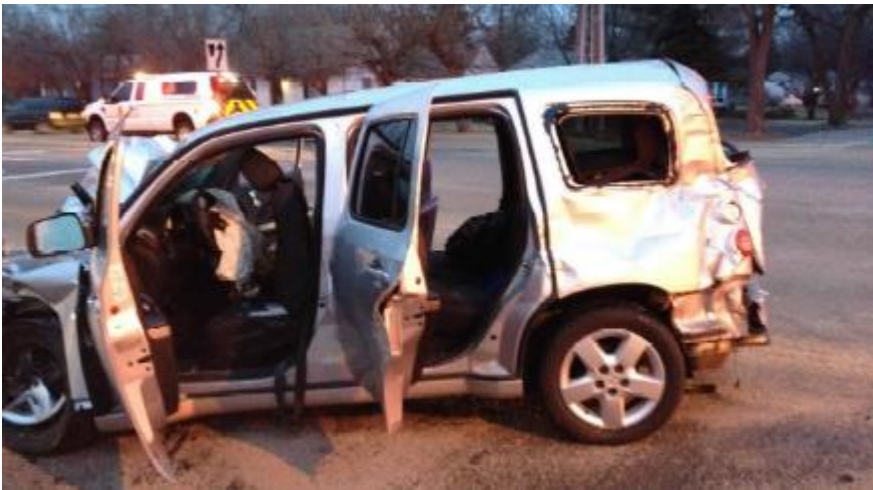
Loss of Control/Rollovers/Overcorrections

Pedestrian Strikes…loss descriptions

NOTE: IF A STUDENT SHOULD DROP AN OBJECT IN THE ROADWAY, HE/SHE SHOULD <u>NEVER</u> STOP AND PICK IT UP UNTIL THE DRIVER IS MADE AWARE AND GIVES PERMISSION.

NOTE: THE STOP ARM SHALL BE USED AT ALL TIMES WHEN LOADING OR UNLOADING STUDENTS. THIS INCLUDES WHILE ON SCHOOL PROPERTY.

Just some of the loss descriptions in this category

- Bus driver struck two students while driving in a residential area
- Bus making <u>left turn and struck pedestrian</u>. Pedestrian was crossing street and ran into bus. Injuries were <u>fatal</u>
- <u>FATAL ACCIDENT</u> - <u>Bus lurched forward and hit the three people</u>.
- <u>Student back pack</u> got caught on the front of the bus and was dragged about 15 to 20 ft on the ground
- <u>FATALITY</u>-Bus dropped student off; student exited the bus; walked up the bank on the side of the road and then <u>re-entered the path of the bus again</u> as it began moving forward; fatality injuring the 10-yr old male student
- <u>STRUCK BY ONCOMING AUTO</u> AS HE WAS CROSSING STREET TO BOARD SCHOOL BUS. <u>FATALITY</u>.
- SCHOOL BUS TURNING INTO PARKING LOT STRUCK PEDESTRIAN/STUDENT IN THE CROSSWALK. THE STUDENT WAS LOOKING AT HIS PHONE AT THE TIME.
- Plaintiff fell as he was exiting bus. Handicap student…unloading issue not pedestrian strike
- Bus stopped at light to make a right turn; looked left and when traffic cleared started to make his right turn and at that time two bicycles
- <u>Fatality</u> - 2nd grader at Elementary struck and killed by bus <u>while unloading at school</u>
- Bus was stopped to deliver to home a <u>5 year old student</u>. When bus stopped driver opened the door. Parent was not there to meet child so driver decided to continue without leaving child at her home. She did not know child had left the bus and ran over the child. <u>Fatal</u>
- Driver had <u>yellow lights on at pick up</u> not reds and <u>7 year old boy</u> ran in front of van on state highway with posted speed limits of 55mph. <u>FATAL</u>

NOTES are from the KY School bus driver manual.

Pedestrian Strikes

Failure To Maintain Clear Distance Convoy Accidents

More than 50 hurt when Indiana school buses crash

This image provided by the Kosciusko County Sheriff's Department shows a chain-reaction crash involving four buses in North Webster, Ind., Wednesday, May 22, 2013 The crash left dozens of middle and high school students with non-serious injuries and one driver seriously injured. / AP

Hail, Fire & Flood

School Bus Fires

Motorcoach and School Bus Fire Safety
Analysis

U.S. Department of Transportation
Federal Motor Carrier Safety Administration

November 2016

Photograph 4
Wiring harness at the firewall

Why You Don't Back Up A School Bus

▸ Driver missed stop on residential street and backed bus and ran over motorcyclist.

Best Practice Fleet Safety Programs

- Select drivers based on their history and ability to perform the job

- Establish and communicate expectations on how jobs should be performed

- Monitor performance against the expectations

- Provide feedback on performance

- Change behavior that does not meet expectations

- Document their policies and actions

Specific Topics

- Driver oversight

- Telematics

- Convoys

- Non-owned autos

- Human factors in crashes

- Hours of use (regulated and non-regulated vehicles)

- Distractions

- Route hazards and controls

- Metrics and measurements

- Documenting your policies and process

Driver Oversight

Lack of Driver Oversight Key Issue in School Bus Safety Special Investigation Report

"Unsafe drivers are a hazard, unsafe systems allow hazards to persist, and systems cannot be safe without effective oversight."

Robert L. Sumwalt, NTSB Chairman

https://www.ntsb.gov/news/press-releases/Pages/NR20180522.aspx   May 22, 2018
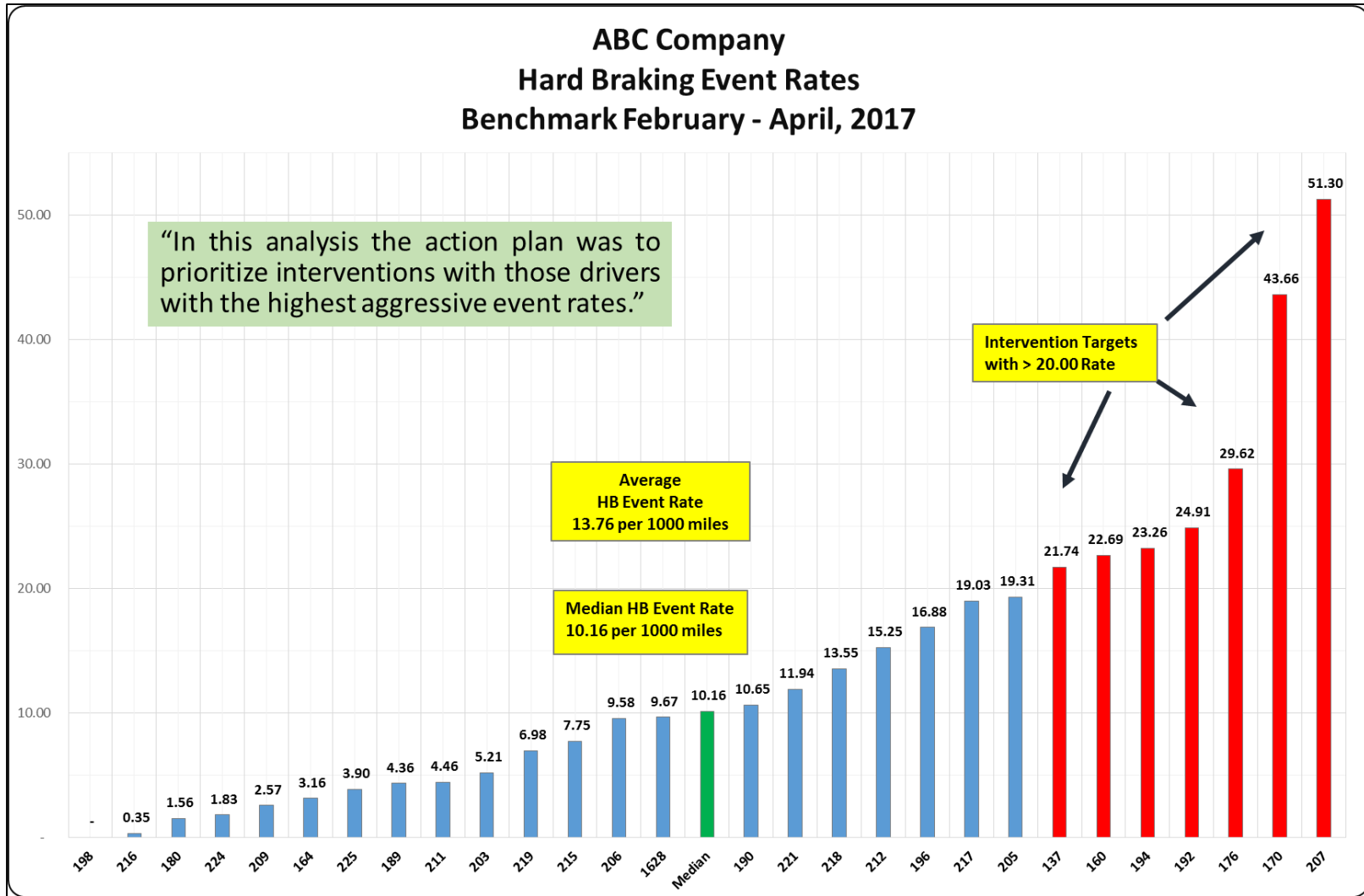
Driver Oversight- Actions to Consider

- Monitor driving records

- Investigate complaints from public

- Investigate complaints from parents

- Use telematics data for aggressive driving and route compliance

- Conduct observations

- Verify you have effective expectations

- Verify expectations have been communicated

- Take actions when expectations are not met that are more than "retraining"

Telematics

Managing Vital Driving Performance™ Process

- Establish event parameters based on the vehicle type

- Use events rates per 100 miles are used to compare performance

- Establish event rate ranges

- Compare performance to the median for same types and areas

- Identify Outliers

- Establish performance improvement objectives

- Track individual and location rates

Baseline Benchmark   "Data for a 10-Week Period"

ABC Company
Hard Braking Event Rates
Benchmark February - April, 2017

"In this analysis the action plan was to prioritize interventions with those drivers with the highest aggressive event rates."

Intervention Targets with > 20.00 Rate

Average HB Event Rate 13.76 per 1000 miles

Median HB Event Rate 10.16 per 1000 miles

Highest Rate 51.3

Average Rate 13.76

Median Rate 10.16

Bar values: 0.35, 1.56, 1.83, 2.57, 3.16, 3.90, 4.36, 4.46, 5.21, 6.98, 7.75, 9.58, 9.67, 10.16, 10.65, 11.94, 13.55, 15.25, 16.88, 19.03, 19.31, 21.74, 22.69, 23.26, 24.91, 29.62, 43.66, 51.30

X-axis labels: 198, 216, 180, 224, 209, 164, 225, 189, 211, 203, 219, 215, 206, 1628, Median, 190, 221, 218, 212, 196, 217, 205, 137, 160, 194, 192, 176, 170, 207

Baseline Benchmark − "RESULTS !!"

ABC Company
Hard Braking Event Rates
New Benchmark July - September, 2017

"This new data analysis shows improvements in the aggressive event rates since holding interventions with those drivers with the highest aggressive event rates back in May and June."
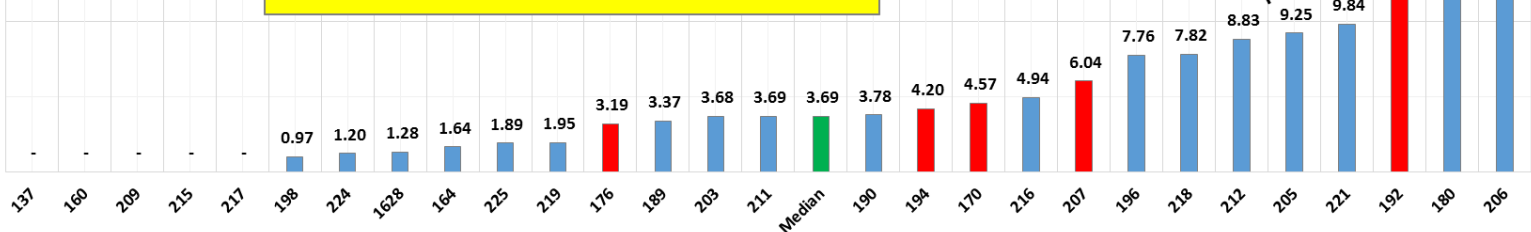
RESULTS

ABC reduced its corporate Hard Braking Event Rate by 65% from May to September. (13.76 per 1000 miles vs 4.86 per 1000 miles)

Median Event Rate was reduced 63% from 10.16 to 3.69

The seven worst performers identified in the April analysis saw an average reduction of 80% in their aggressive driving event rate, after the one-on-one interventions.

New intervention Targets are those with > 9.00 Rate

Red Markers indicate the active worst performers from the prior analysis in March-April 2017.

Highest Rate
18.16

Average Rate
4.86

Median Rate
3.69

Values on chart: 0.97, 1.20, 1.28, 1.64, 1.89, 1.95, 3.19, 3.37, 3.68, 3.69, 3.69, 3.78, 4.20, 4.57, 4.94, 6.04, 7.76, 7.82, 8.83, 9.25, 9.84, 12.80, 15.32, 18.16

X-axis labels: 137, 160, 209, 215, 217, 198, 224, 1628, 164, 225, 219, 176, 189, 203, 211, Median, 190, 194, 170, 216, 207, 196, 218, 212, 205, 221, 192, 180, 206

Convoys

- Space between vehicles when arriving or leaving a school

- Field trips or games with multiple vehicles

  - Establish following distance policies based on time interval rule

- Each driver needs to understand the route- never use the "follow me" method

- Don't fight for space or to keep other vehicles out of a convoy

Dumpster Fence

Non-owned Vehicles

- Identify employees that drive on school business

- Establish minimum insurance limits

- Establish protocols for rental vehicles

- Do not coordinate rides for students using their own vehicles

- Establish driver qualification protocols

- Establish vehicle specifications

Human Factors in Crashes- Study in Progress

- Route Observation Rides

- Driver Selection

- Parking Location in Yards

- Vehicle Condition

- Windows and Mirrors

- Driver Rotation

- Health and Wellness

- Higher Crash Rate Month

Hours of Use

- Comply with hours of service requirements (interstate and intrastate regulations)
- With longer day drivers look at commute times (can be legal but tired)
- Develop policies similar to HOS regulations for non-regulated vehicles
- Use technology to monitor hours of use
- Have policies to address risk created by expense control

Distractions

- Address a wide range of distractions
- Prohibit use of phones when driving
- Have senior management set the example
- Look for operation policies that encourage distraction
- Document your distractions policies
- Clearly communicate the distraction policies
- Document the communication
- Use acknowledgement documents to show drivers understand and agree to comply

Route Hazards and Controls

▸ Identify hazards during dry runs that might allow for modifications

▸ Ask for driver input

▸ Turns, intersections and limited visibility areas

▸ Work with route designers when concerns are identified

Metrics and Measurements

▸ Use multiple metrics (miles and stops)

▸ Track a range of metrics including on time departure, telematics events and fuel use

▸ Track events, incidents, crashes etc. by route

▸ Use a root cause analysis when high rates are identified

Document Policies and Process

- Policies and expectations
- Policy communication
- Driving record criteria and on-going monitoring
- Training outlines and completion
- Performance evaluations
- Observations
- Metrics showing action plans and progress
- Telematics process
- Have a record retention policy
- Trainer training and audits

Questions and Comments