The Association

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New Federal Rule To Make Buses Safer

NHTSA Press Release 10/2008

New federal rules will make the nation's 474,000 school buses safer by requiring higher back seats, mandating lap and shoulder belts on small school buses, and setting standards for seat belts on larger buses, US Secretary of Transportation Mary Peters recently announced. "Even though riding in school buses is the safest form of travel in America today, any accident is still a tragedy," said Secretary Peters. "Taken together, these steps are designed with a single purpose, making children safer."

Secretary Peters stated the new rule will require all new school buses in America to be equipped with 24 inch high seat backs instead of the 20 inch high seat backs required today. Higher seat backs will help prevent taller and heavier children from being thrown over the seat in a crash, decreasing the chance of injury to them and the children in front of them. She added that all new school buses weighing less than five tons will be required to have three-point seat belts. She noted that the lap and shoulder belts better protect children in smaller buses, adding that smaller school buses are more vulnerable because they don't absorb shock as well as larger buses. The Secretary said the federal government also was setting new standards for seat belts on larger school buses. Standards will help improve seat belt safety and help lower the cost of installing the belts. She cautioned, however, that seat belts on larger buses can limit capacity and force more students to walk or ride in cars to school, which is statistically more dangerous. "The last thing we want to do is force parents to choose other, less safe ways of getting their children to school," she said. That is why she said that the federal government also would begin allowing school districts to use federal highway safety funds to pay for the cost of installing belts. "No school district should have to choose between books and safety," said Deputy Secretary of Transportation Thomas Barrett, who outlined the new school bus rules recently during a visit to a Deatsville, AL., elementary school with the state's governor, Bob Riley.

"I thank Secretary Peters and Deputy Secretary Barrett for their leadership on this important issue. These new measures will make children on school buses safer and give states a clearer picture of what they can do to better protect students," Gov. Riley said.

Admiral Barrett noted that a phone call from the Governor to Secretary Peters following a November 2006 bus crash in Huntsville helped prompt the new rule. "The fact that there are so few fatalities on buses every year is little solace for a grieving parent or saddened governor," said Barrett.

To see the entire rule, visit the NHTSA website, or go to: *http://www.nhtsa.gov/staticfiles/DOT/NHTSA/Rulemaking/Rules/Associated/%20files/SchoolBusBeltsFinal.pdf*

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TO ALL OUR MEMBERS, THANKS FOR BEING A MEMBER OF THE IACAI FROM ALL OF US TO ALL OF YOU, HAVE A SAFE AND HAPPY HOLIDAY SEASON!

Inside this issue:

Collisions With Deer, Other Animals Spike

- An IIHS News Release

November is the peak month for vehicle-deer collisions and a new analysis of insurance claims and federal crash data indicate the problem is growing. The Highway Loss Data Institute (HLDI), an affiliate of the Insurance Institute for Highway Safety (IIHS), recently examined insurance claims for animal strikes under comprehensive coverage month by month from January 2005 through April 2008. The main finding is that insurance claims for animal collisions are nearly three times higher in November than the typical month earlier in the year. For example, for every 1,000 insured vehicles, 14 claims were filed in November 2007 compared with an average of 5 claims per 1,000 during January-September. Insurance claims usually don't specify the animal involved, but other data show the deer are the main ones.

"Urban sprawl means suburbia and deer habitat intersect in many parts of the country," says Kim Hazelbaker, HLDI senior vice-president. "If you're driving in areas where deer are prevalent, the caution flag is out, especially in November." State Farm, the nation's largest auto insurer, estimates that there were more than 1.2 million claims for damage in crashes with animals during the last half of 2007 and the first half of 2008. The company says animal strike claims have increased 14.9 percent over the past 5 years.

Most vehicle-animal collisions aren't severe enough to injure people, but data from the federal government show that crash deaths are increasing. In 1993, 101 people died in crashing involving animals. By 2000, the number was 150, and in 2007, it was 223. The states with the largest number of total deaths are Texas with 227 during 1993-2007, Wisconsin with 123, and Pennsylvania with 112.

Analyzing monthly data on fatal crashes of passenger vehicles and animals during the past three years, IIHS researchers found patterns similar to those reported by HLDI. Depending on the year, the crash deaths occurred most frequently in October or November.

"The months with the most crash deaths coincide with fall breeding season," Annie McCartt, IIHS's senior vice-president for research, points out. "Crashes in which people are killed are most likely to occur in rural areas and on roads with speed limits of 55mph or higher. They're also more likely to occur in darkness, at dusk, or at dawn."

When motorcycles are included, there's another peak in crashes in the summer when motorcycling is more common. Riders typically make up about half of the deaths in vehicle-animal crashes each year, even though registrations of cars, SUVs, and pickup trucks outnumber motorcycles on the road 40 to 1. Seat belt use is a major factor. IIHS research from 2005 examined 147 police reports on vehicle-animal collisions in which there was a human fatality in 9 states during 2000-2. Deer were struck in 3 out of 4 of these crashes, but collisions with other animals, such as cattle, horses, dogs, and a bear also led to deaths.

Most of the crash deaths occurred after a motor vehicle had struck an animal and then ran off the road or a motorcyclist has fallen off a bike. Many of these deaths wouldn't have occurred with appropriate protection. The study found that 60 percent of the people killed riding in vehicles weren't using safety belts, and 65 percent of those killed riding on motorcycles weren't wearing helmets.

"A majority of the people killed in these crashes weren't killed by contact with the animal," McCartt says. "As with other kinds of crashes, safety belts and motorcycle helmets could have prevented many of the deaths."

Taken from the IIHS Website. Report date: October 30, 2008

Please visit www.iacai.com to see all the new changes and updates!

IACAI membership renewal notices for the 2009 year will be mailed around the end of November. As with years past, please look over the renewal invoice and make any changes required. Please pay special attention to the email address shown, as email addresses sometimes change and we are not notified.

If you have made changes, please submit a copy of the corrected invoice with your 2009 payment. Thanks again for your continued support of the IACAI!

Bicycle/Pedestrian Crash Training Held Recently In Bloomington

Recently, the IACAI held its annual fall training seminar at the Bloomington Police Department. The topic for the September 24th class was on Bicycle/ Pedestrian Crash Investigation, instructed by former IACAI Vice-President Mike Snow (IPD-retired). Mike started the class by discussing vehicle/pedestrian crashes and the proper ways to investigate them. The presentation addressed ways to approach the investigation, including considering:

The Vehicle:
- Pre-Crash Condition
- Crash
- Post Crash

Human Factors:
- Driver Experience
- Physical Condition
- Impairment
- Hours of Vehicle Operation
- Perception & Reaction

Additionally, investigators should look at weather, visibility, and roadway conditions when investigating a pedestrian crash.

Snow spoke about the misconception that some have regarding pedestrians and right-of-way. Pedestrians do not have the right of way at any part of the road; only where designated. On the topic of Perception and Reaction, Snow presented the following data for consideration when investigating:

The normal 'straight forward' time for Perception/ Reaction is considered to be between 1.5 to 1.6 sec., (combined). However, this time should be considered for use for daytime incidents only, and not for nighttime incidents. The nighttime perception/reaction time may be as high as 2.5 sec for the average driver. When considering Perception/Reaction time, the investigator should weigh all of the components of P/R, including:

- Detection
- Identification
- Evaluation
- Response

Snow added that in nighttime car/pedestrian collisions, drivers have a harder time in making out pedestrians who come from the left side of the driver, rather than from the right.

On scene investigation, the investigator should document the scene, first by securing it, making notes of who is there, first observations, and of the short-lived evidence. Photographs, marking and collection of the short-lived evidence should be done first.

On the victim's body, the investigator should look at the clothing, look for any safety markings/equipment that the pedestrian may have had with them at the time of the collision, and match the injured areas with the damage to the clothing. The final rest position of the body, if possible, should be documented, as well.

Inspection of the vehicle should be done at the scene, documenting evidence by observation and by photographs. A search warrant may be necessary in certain situations.

When looking over the big picture, attempt to look at the 'Zone Of Impending Impact' (fig 1). This is considered the area in front of a moving vehicle. The zone can begin as the potential for impact becomes probable. When attempting to determine the zone, the investigator should factor in the perception/reaction time/distance, as well as the braking distance for the driver. The width of this zone can also be determined by considering the width of the striking vehicle and the attitude/orientation of the vehicle. Calculating the area of the Zone of Impact can be done by determining the speed of the vehicle and including the perception/reaction time.

(Continued on Page 4)

Reminder - November 24, Federal Rule 23 CFR 634, which requires emergency workers to wear high-visibility vests, goes into effect.

More About: Bicycle/Pedestrian Crash Training

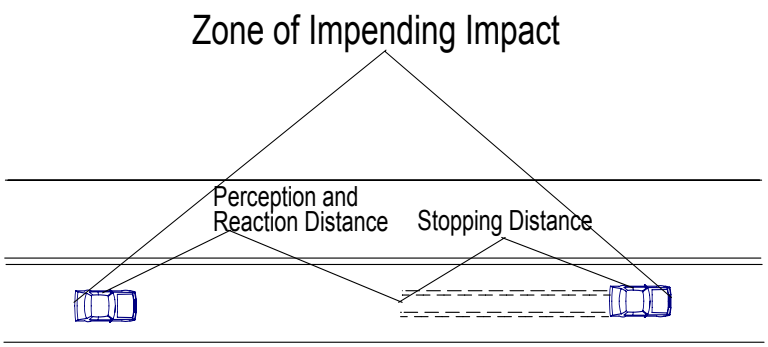

Figure 1

(Continued from Page 3)
Some factors which may affect the Zone of Impact include:

- Swerve or steering
- Speed of the Pedestrian
- Road conditions
- Vehicle condition
- Driver's P/R
- Visibility
- Pedestrian maneuverability

Snow reported that one of the more difficult things that an investigator may face is attempting to determine the point/area of impact. Obviously, one of the more reliable indicators of this may be the direct cross transfer evidence, such as a shoe scuff or body fluid/part transfer with the road surface. If not present, look at the pedestrian's clothing. Wear as the result of impact/ground contact may lead to evidence on the ground. Look for tire markings; specifically, offset or a widening in a skidmark. This is often the result of a 'loading' of the vehicles' suspension, and is more likely if the initial contact is at one corner of the vehicle rather than the middle of the vehicle. Snow pointed out that the weight of a 90lb person would be sufficient enough to bottom out the suspension of a vehicle and cause 'loading' to occur. When in doubt, working backwards from where the pedestrian came to rest back may yield clues as to where first contact may have occurred. Snow also presented deceleration values to use for bodies sliding and for bodies rolling. This information may be useful in determining a speed when all other evidence is insufficient.
Finally, during the presentation, Mike presented additional facts to consider: The 1982 Pasanen study on Pedestrian safety found that 5% of Pedestrians struck at 20 mph will die. 80% of Pedestrians struck at 40 mph will die. 100% of Pedestrians struck at 50 mph will die. Conversely, while it only takes 14.5 mph to fracture lower leg bones, multiple fractures occur around 35 mph and severing occurs around 50 mph.

Thanks to Mike for coming out of retirement (?) and presenting this class. It is great to know we have these individuals we can contact in our organization!

Text Messaging Bans Now In Place In Seven States

Text-messaging is now banned for all drivers in seven states, with California being the most recent state to announce the ban. Currently, in addition to California, Alaska, Louisiana, Connecticut, Minnesota, New Jersey and Washington, as well as the District of Columbia, all have bans in place. In addition, novice drivers are banned against text-messaging in 9 other states, and 17 states have enacted restrictions on the use of cell phones by novice drivers.
The Insurance Institute for Highway Safety reported that 6 states, (California, Connecticut, New Jersey, New York, Utah, and Washington), have enacted jurisdiction-wide bans for driving while talking on hand-held cellular phones. Utah has even named the new offense as 'Careless Driving.' Under Utah law, the offender must have committed another offense, such as speeding, in order to be charged under this new law. In 6 states, (Illinois, Michigan, New Mexico, Ohio, and Massachusetts) localities are now allowed to ban cell phone use.
In a total of 17 states and the District of Columbia, operating a school bus while using a cellular phone is now prohibited, while the text messaging by school bus drivers is banned in 4 states.
The Insurance Institute of Highway Safety also publishes a state-by-state of current cell phone laws. It can be seen by visiting:
http://www.iihs.org/laws/cellphonelaws.aspx

IACAI Skill Review

The Answers to the last issue of the IACAI Skill Review:

A car skids to a stop. The right rear brake did not work. The braking ratio is 60% on the front axle and 40% on the rear axle. Measured skidmarks: right front - 209 feet, 3 inches; left front - 213 feet, 8 inches; and left rear - 215 feet, 7 inches. You determine the drag factor by using a 37 pound drag sled and record 10 pulls: 27, 21, 22, 28, 21, 22, 26, 22, 26, & 29.

1. How fast was the car going at the beginning of the skid?
2. How fast was the car going at the end of the skid?
3. How long (in seconds) did it take the car to skid to a stop?
4. How far back from final rest was the car, 9 seconds before it slid to a stop?

The IACAI Skill Review will return next issue with more questions for the crash investigator.

Solution:

Question #1: Speed at the beginning of the skid:

A. Determine the drag factor using f= F+W, where 'f' is the drag factor; "F" is the average Force, in pounds, of ten pulls of the drag sled; and "W" is the weight of the drag sled. f = F/W = 24.4 / 37 = **.65**
B. Determine the braking percentage of the car = 80% = .80
C. Determine the adjusted drag factor = .65 (.80) = .52
D. Determine the average skid distance of the car. Remember to change feet and inches to feet and tenths = 212.83 ft.
E. Determine the speed at the beginning of the skid using $s = \sqrt{(30 \cdot D \cdot f)}$, where s is the speed of the vehicle in MPH, 30 is a math constant, D is the average skid distance of the car in feet, and f is the drag factor adjusted for the braking percentage of the car. $s = \sqrt{(30 \cdot D \cdot f)} = \sqrt{(30 \cdot 212.83 \cdot .52)} = \sqrt{(3320.148)} = 57.62$ = ***57 mph.***

Question #2: Speed of car at the end of the skid: ***0 miles per hour.*** This is not a trick question. 0 miles per hour is a "speed" in traffic crash investigation/ reconstruction analysis. It serves as a starting point in the calculations when we start at the point of final rest and work backward along the path of the vehicle to the beginning of the skid.

Question #3: Time to skid to a stop:

A. Use the formula $t = .249(\sqrt{(D/f)})$ where t = time in seconds, .249 is a math constant, d = average skid distance of the car and f is the drag factor of the road adjusted for the braking percentage of the car. $t = .249(\sqrt{(D/f)}) = .249(\sqrt{(212.83 / .52)}) = .249\ (\sqrt{409.28}) = .249(20.23)$ = ***5.03 seconds.***

Question #4: Distance of the car from final rest, 9 seconds before it slid to a stop:

A. Convert speed at the beginning of the skid to feet per second. V = S(1.466) = 57(1.466) = 83.56 feet per second.
B. Determine time to travel at a constant velocity by subtracting 5.03 seconds from the overall time of 9 seconds = 9.00 - 5.03 = 3.97 seconds.
C. Determine distance traveled at a constant velocity of 83.56 fps for 3.97 seconds using D=V(t), where D= distance the car traveled at a steady speed for 3.97 seconds, V=velocity, in feet per second, of the car at the beginning of the skid, and t= time, in seconds, the car traveled at a steady speed. D = V(t) = 83.56(3.97) = 331.73 ft.
D. Distance from final rest, 9 seconds before impact. Add the distance traveled at a steady speed and the distance the car skidded to final rest. 331.73 + 212.83 = ***544.56 feet.***

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Contact us at:

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Seminar Announcement

The Indiana Association of Certified Accident Investigators will be sponsoring a seminar on

"Legal Update"

Presented by: Deb Reasoner, IPAC

"Crash Reporting/ARIES Update"

Presented by: Holt Sheets & Assoc.

December 3, 2008 0900-1500 hrs

Indiana State Police Museum

8500 East 21st Street

Indianapolis, IN 46219

Cost: $50 for IACAI members; $75 for non-members

No advanced registration is required.

Registration begins at 08:30am

Please plan to attend!!

Questions regarding this seminar may be directed to IACAI President Don Harris

email: donhar232@comcast.net

The Association is published quarterly as a service to members of the Indiana Association of Certified Accident Investigators.