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NASDPTS Member,

On November 3, 2022, NASDPTS received the following recommendation from the National Transportation Safety Board (NTSB) following their accident investigation of the October 27, 2020, collision between a service vehicle and a school bus in Decatur, Tennessee:

Inform your members of the need to periodically review onboard video event recorder information to ensure that students engage in safe transportation behaviors on school buses, including sitting properly and wearing seat belts, when available, and that the members use this information to improve the bus safety training provided to drivers, students, and parents.

We ask that you please share this information within your districts and communities. In addition, the NTSB provided the following article, which you may use in whole, or in parts, in your communication with your districts and communities:

### **Enhancing School Bus Safety**

Video cameras—inward- and outward-facing—are becoming much more common on vehicles, including school buses. For several years, the National Transportation Safety Board (NTSB) has stated that video recordings can be used to better understand the vehicle and passenger dynamics during a crash, as well as be used as a tool to enforce rules, such as seat belt use.<sup>1</sup>

# Crash investigation of school bus equipped with inward- and outward-facing video cameras

The NTSB recently completed an investigation of an October 27, 2020, collision involving a school bus and a service utility vehicle in Decatur, Tennessee, in which the school bus was equipped with inward- and outward-facing video cameras.<sup>2</sup> The 2013 Thomas Built transit-style school bus was traveling southbound on a two-lane highway at a speed of about 46 mph, carrying 33 students home from school. At the same time, a 2018 Freightliner truck, configured as a service vehicle for a local utility company, was traveling northbound at an estimated speed of about 52 mph. The truck driver reported that he was looking in his side rearview mirrors at a sheriff's deputy vehicle traveling behind him when the truck's right-side wheels departed the roadway. When the truck driver steered the truck back onto the roadway, the truck yawed counterclockwise, crossed into the southbound travel lane, and was almost perpendicular to the roadway. Although the school bus

<sup>1</sup> See for example the 2015 report <u>Commercial Vehicle Onboard Video Systems</u>, NTSB/SR-15/01, and the 2022 report <u>Multivehicle Crash Near Mt. Pleasant Township, Pennsylvania, January 5, 2020</u>. NTSB/HIR-22/01.

driver braked, she did not have time to avoid the collision, and the school bus struck the right side of the truck.

The school bus driver and a 7-year-old passenger seated directly behind the bus driver were fatally injured. Four other school bus passengers sustained serious injuries; all four were seated in the first three rows of the school bus closer to the impact location. The other students on the bus were not injured or they sustained minor injuries.

The NTSB determined that the probable cause of the Decatur crash was the service truck driver's inattention to the forward roadway due to his looking at a sheriff's vehicle behind him, which resulted in his failure to keep the truck on the roadway. Contributing to the cause of the crash were non-recoverable and critical foreslopes and the pavement edge drop-off along the state highway, which prevented the truck driver from safely returning the truck to the roadway in a controlled manner. Contributing to the severity of the crash was the lack of passenger lap/shoulder belts on the school bus and the unsafe seating positions by some of the students.

Investigators analyzed the video footage captured by the school bus's inwardand outward-facing cameras. The footage from the outward-facing camera showed the precrash movement of the truck, and, based on that, investigators were able to estimate the speed of the truck. The footage from the inward-facing cameras was used to determine seating positions and passenger movement on board the bus before impact. The footage showed that several students—including three of the four seriously injured students—were seated out of position, such as kneeling in their seat facing aft, or sitting sideways with their feet in the aisle. Additionally, based on the video footage, investigators were able to conclude that the bus driver reacted by braking when the truck crossed into her travel lane, because all the students moved forward at the same time, indicating that the bus decelerated before impact.

Sitting out-of-position (such as kneeling or facing aft) is unsafe because, in the event of a frontal or rear crash, passengers do not receive the benefits of compartmentalization (the occupant protection system for school bus passengers). Video camera footage can be used by school transportation officials to make sure students are engaging in safe behaviors, which includes sitting in their seats properly—forward-facing, feet on the floor—and using available seat belts. Although the Decatur school bus was not equipped with passenger seat belts, the benefits of compartmentalization and lap/shoulder belts will only be realized if students are seated properly and lap/shoulder belts are properly worn when available.

#### What can school transportation officials do?

The NTSB recommends that school transportation officials periodically review onboard video event recorder information to ensure that students engage in safe transportation behaviors on school buses, including sitting properly and wearing seat belts, when available, and use this information to improve the bus safety training provided to drivers, students, and parents. Improper seating positions, such as facing backwards or standing, can be shown as examples of unsafe behaviors when talking with students, drivers, and parents. In order for compartmentalization to be effective, students must be seated completely within the seat compartment and be facing forward. Passenger seat belts enhance compartmentalization and will only provide protection if worn properly, so if school officials see that students are not using available seat belts, that information can also be used to improve training.

#### What can regulators do?

The NTSB recommends that the National Highway Traffic Safety Administration require that all buses and trucks over 10,000 pounds gross vehicle weight rating be equipped with onboard video event recorders that record, at a minimum, parametric data associated with the event, such as real clock time, GPS location, and acceleration data, and visibility of the driver's face and of each occupant seating location, visibility of the instrument panel, visibility forward of the vehicle, optimized frame rate, and low-light recording capability.

Also, the NTSB recommends that the National Highway Traffic Safety Administration require all newly manufactured commercial motor vehicles with gross vehicle weight ratings above 10,000 pounds to be equipped with lane departure prevention systems. A lane-keep system would have actively assisted the truck driver in keeping the truck within the travel lane, preventing the roadway departure that initiated this crash.

#### What can states do?

The NTSB recommends that the states that don't currently require passenger lap/shoulder belts on large school buses enact legislation or amend state statutes to require that all new large school buses be equipped with passenger lap/shoulder belts for all passenger seating positions in accordance with Federal Motor Vehicle Safety Standard 222. Properly worn lap/shoulder belts provide the highest level of protection for school bus passengers and enhance compartmentalization.

#### Additional information?

Additional information about the Decatur collision, including the final report, can be found on the NTSB website at <u>www.ntsb.gov</u>, Highway Investigation Report NTSB/HIR-22/06.

If you have questions, or need additional information, please do not hesitate to contact Ronna Weber at <u>execdir@nasdpts.org</u>.