NTSB

SAFETY ALERT

National Transportation Safety Board

Commercial Vehicle Onboard Video Systems

Tips for Improving the Utility of Onboard Videos

The problem

Commercial vehicles such as school buses and motorcoaches are equipped with onboard video systems for a variety of reasons. Video systems can be used (1) to monitor passenger behavior and dissuade negative actions, such as bullying or theft; (2) to monitor traffic surrounding the vehicle and assist in recording the observance of traffic laws; and (3) to enhance driver safety through feedback programs that correct potentially unsafe behaviors. The NTSB has also used onboard video systems in its accident investigations.

In some cases, however, commercial vehicle onboard video systems lack the capability to record useful video in certain conditions, or are not properly installed or well maintained. Characteristically, the following shortcomings are common among current video systems:

- No view of what is happening in front of the vehicle.
- No view of all seating positions, including the driver.
- Lack of low-light recording capability (no night vision).
- Low frame rates, such that videos are jumpy or skip over events.
- Poorly positioned cameras.
- Improperly maintained cameras.

Selected NTSB accident investigations

On March 26, 2012, about 3:45 p.m., in Port St. Lucie, Florida, a truck-tractor semitrailer traveling 63 mph on State Road 70 struck a school bus preparing to make a left turn, resulting in a severe lateral impact collision. The bus was occupied by the driver and 30 elementary school students. It was equipped with lap belts at all passenger seating positions and a continuous audio and video system, which recorded useful precrash, crash, and postcrash information. However, of the four camera views, none recorded the one occupant who was fatally injured.

A three-event crash began about 2:00 a.m. on October 6, 2011, in Kearney, Nebraska, when a truck-tractor semitrailer overturned and came to rest across both lanes of

Interstate 80. A short time later, two commercial vehicles—another truck-tractor semitrailer and a motorcoach—came upon the overturned truck. The truck-tractor semitrailer was able to move onto the right shoulder, where its left side sideswiped the overturned truck's front bumper. The motorcoach driver applied the brakes but was unable to avoid colliding with the overturned truck, and the motorcoach came to rest in the median. The motorcoach was equipped with lap/shoulder belts and with a continuous audio and video system, which recorded precrash information from a forward-facing camera. However, due to poorly oriented interior cameras and a lack of low-light recording capability, the system did not capture any information concerning the driver or the motorcoach interior.

To ensure optimum use of video systems

School districts and bus operators can take the following steps to improve the utility of onboard videos:

- Check to see that current or newly purchased equipment has the following features:

  - ✓ Provides visibility of the driver.
  - ✓ Provides visibility of each occupant seating location.
  - ✓ Provides visibility forward of the vehicle.
  - ✓ Ensures optimized frame rate.
  - ✓ Allows low-light recording capability (night vision).

- Properly install and maintain onboard video systems.

For more information

On March 3, 2015, the NTSB adopted safety report NTSB/SR-15/01, *Commercial Vehicle Onboard Video Systems* (see www.ntsb.gov/safety/safety-studies/Documents/SR1501.pdf). The report provides additional details on the strengths and limitations of onboard video systems in capturing precrash, crash, and postcrash information; on the Port St. Lucie and Kearney accidents specifically, among other NTSB investigations; and on the kinematics of occupant injury.