Bus Equipment Recommendations

For school transportation after the pandemic

Created by the Ohio Pupil Transportation Task Force

July 1, 2020

OSBA leads the way to educational excellence by serving Ohio's public school board members and the diverse districts they represent through superior service, unwavering advocacy and creative solutions.

The Ohio Pupil Transportation Task Force

- The task force is comprised of 30 school transportation professionals from Ohio's public schools. The members worked together to study transportation options, constraints, and needs as they pertain to the pandemic.
- The material presented by the task force is meant to serve as guidance, and to help local school district officials understand the options and constraints inherent in the restart of safe school transportation services.
- Within the task force the members focused on seven different aspects of pupil transportation services. Each of these focus areas has its own presentation.

Available equipment options for installation on school bus should be considered carefully and meet applicable construction standards developed by Ohio State Highway Patrol and Federal Motor Vehicle Safety Standards.

The criteria used to evaluate bus equipment options

- To be considered as viable, any option should be:
  - Compliant with state and federal standards
  - Practical
  - Cost effective
  - Able to be implemented in a reasonable time frame

Personal protective equipment (PPE) for drivers

- Bus drivers may wear facemask
- Bus drivers may wear a face shield, but the shield should be of good visual quality and not add any distortion to the drivers field of vision
- Drivers should have disposable gloves available for cleaning details
- Drivers may be provided with protective gowns to be worn when sanitizing the bus

Hand Sanitizers - Each bus may be equipped with a sanitizer dispenser available for use and mounted as described in OHP Inspection Manual dated June 15, 2020 attachment #1

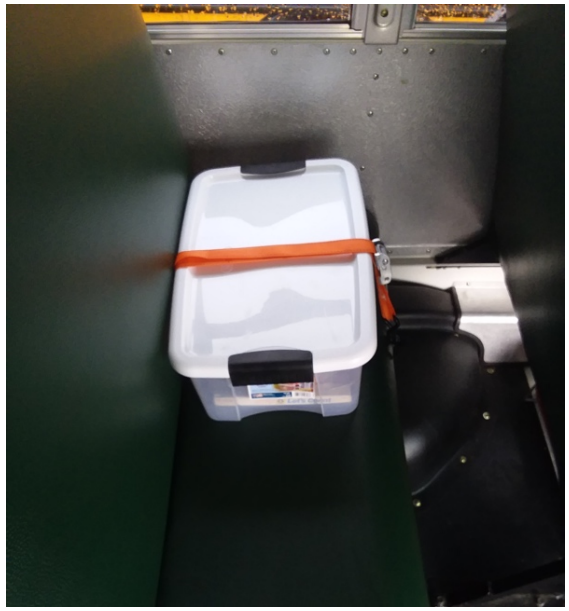
Hand sanitizers – additional considerations:

- Hand sanitizers, if installed, should be added to the pre-trip as it is “Optional Equipment.”
- Foaming units uses less product
- Districts should utilize the handrail testing procedure if sanitizers are installed in the bus stairway

Bus Ventilation

- To the extent possible and based on weather conditions windows and vents should be open and used to increase ventilation
- Buses equipped with roof vents should have the front edge of the front vent open and the back edge of the rear vent open when moving to promote fresh air circulation through the vehicle
- Windows must be open when the bus is stationary and being sanitized

- Cleaning supplies used for cleaning the bus may be kept on the bus when driver is present but shall be mounted securely. Locations could include the following:
  - Storage area above the driver
  - In a storage box secured by straps in the first seat behind driver
  - In outside storage compartments



- Cleaning supplies should be removed at completion of route.
- Facemask and glove dispensers may be mounted for student usage and should be mounted similar to sanitizer dispensers.

Marking seats to promote social distancing

- If seats are not to be used due to social distancing consider using painter's tape to indicate seats not to be used

Signage

- Signage cannot be added to the outside of the bus without violating construction standards
- Signage can be installed inside the bus for student instructions regarding proper hygiene and cough etiquette.
  - Should be secured properly
  - Should not cover any safety information
  - Should not obstruct driver visibility

Additional equipment options

- Driver protective Barriers
  - Have been approved as an option by OSP.
  - Details in attachment #2
  - The requirements to meet the installation requirements are rather extensive and time consuming
  - Kits are not readily available
  - May not be most practical option based on cost and installation time

- Air purification systems/UV Light Systems
  - May be a long-term solution
  - Technology is still in developmental stages
  - Approved by OHP
    - see language in attachment #3

Attachment #1 Hand Sanitizer Option

Hand Sanitizer: (Added 06/15/2020)

Personal use

Stored securely with in the driver's compartment, 12oz or less in capacity.

Entry mounted dispenser

Must be securely installed in the driver/entry area, either behind the handrail or just to the right of the driver on the side of the dash.

Cannot cause a catch point to the passengers as they enter or exit, nor can the installation encroach into the bus entry point. Overall dimensions for the dispenser cannot exceed 6" in depth, 7" in width, and 12" in height.

Attachment #2 Driver Protective Barrier

Driver Protective Barrier: (Added 06/15/2020)

The driver protective barrier panel shall be installed directly behind the driver and flush to the outside wall of the bus or at a dimension that will prohibit a passenger from coming in contact with the driver's area. If installed, the passenger seat directly behind the driver must be rendered inoperative (this can be accomplished by removing the lower seat cushion) to comply with FMVSS 571.222. The panel shall be constructed of clear material compliant with FMVSS 571.302 such as polycarbonate. The end of the barrier panel exposed to the passenger compartment shall be secured to a padded stanchion extending from the floor to the ceiling. The stanchion shall be attached to the roof bow or a reinforced panel in the ceiling and a solid connection point on the floor. The barrier panel shall be in compliance with FMVSS 571.302 and FMVSS 571.222.

Note: With the lower seat cushion removed, all exposed seat frame must be wrapped in padding in compliance with FMVSS 571.302 □ A barrier cannot take the place of a manufactured installed seat as it will compromise the floor integrity.

Attachment #3 Air Purification

Air Purification: (Added 06/15/2020)

Air purifications systems may consist of HEPA and/or UV technology. Installation of the air handlers must meet or exceed all requirements for head impact area, emergency exits, nor may they decrease the inside body height as required. Units must be installed and maintained per the manufactures specifications. Control of fan speed and functionality of the unit(s) shall be installed within reach of the driver.

Purifications units may be installed above the rear emergency door under the following conditions:

Shall not interfere with any emergency exit in violation of FMVSS opening requirements

Shall not extend into the passenger area of the vehicle beyond the following dimension:

Measuring from the interior surface of the emergency door at the location of the door latch, twelve inches excluding padding.

All exposed edges shall be rounded or padded meeting FMVSS 571.302

Attachment #4 Handrail procedure

- The inspection tool is inexpensive and the procedure for detecting potentially fatal handrail designs is quite simple. The inspection tool is a standard ½” hex nut measuring ¾” across the flats. This nut is tied to 1/8” thick cotton cord measuring 36” in length with overhand knots. The drawstring should have a minimum length of 30" when tied to the nut and attached so that a pull of at least ten pounds does not separate the nut from or break the drawstring.
- Steps to conduct a handrail inspection are:
- Stand on the ground outside of the bus
- Drop the inspection tool between the handrail and step well wall, simulating the typical way students exit the bus
- Draw the inspection tool through the handrail in a smooth, continuous slow motion
- Repeat this procedure several times (minimum of three times)
- **Note:** It is important to drop the inspection tool over the handrail in such a way as to simulate a child exiting the bus. This is a **drop and drag** test. Do not create a snagging situation by placing the nut in an area that would not be exposed to a drawstring or other articles.
- https://one.nhtsa.gov/people/injury/buses/Handrail/handrail.html#Tool

Handrail inspection results:

Inspection Results

Take the bus out of service and repair it if the inspection tool catches or snags anywhere on the handrail.

If the nut separates from the drawstring or the drawstring breaks, reassemble the tool and retest. If the inspection tool pulls freely without catching or snagging, the bus should not be rejected.

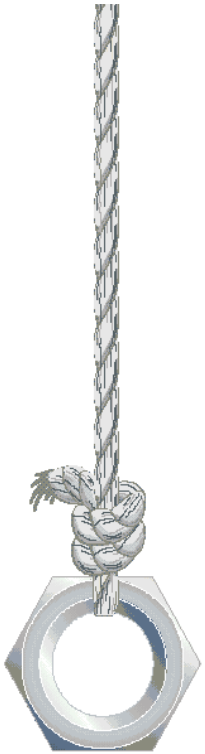


Figure 6
The Tool

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OSBA was proud to serve as the host for this transportation task force.

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