

UNIT TWO - DRIVER AND VEHICLE READINESS

PRE-TRIP - THE DRIVER

The driver of a school bus is required by Colorado regulations to perform a daily school bus pre-trip inspection before placing the vehicle in service. It is just as important for a driver to perform a personal pre-trip.

Factors that influence a driver's well-being are physical, emotional, and mental attitude. Stress in any of these areas can affect driving performance. Under physical, emotional or mental stress a driver may have trouble concentrating and may experience slowed reaction time.

PERSONAL PRE-TRIP

Well rested - Fatigue is one of the major contributing factors to accidents. A well rested driver is more alert to emergency situations, and is less likely to misjudge speed and distance. A driver who gets an adequate amount of rest is less likely to overreact to stress created by traffic and passengers.

Drivers must know and be in compliance with the hours of service rules and not exceed them. Refer to 4204-R-229.00 Hours of Service for school transportation vehicle operators at the end of Unit Three.

Physical health - Both illness and the medicine to combat them can interfere with concentration, coordination and decision-making abilities. Medications such as cold treatments may cause more problems with driving ability than the illness itself. Behind the wheel of a school bus is no place to combat the flu.

Proper dress - Clothing contributes both to safety and the school bus driver's professional image. Loose clothing, drawstrings, unsecured long hair, and jewelry may be caught in equipment. Shoes with smooth soles or spiked heels may cause ankle injuries or slipping and falling on uneven or slick surfaces. Clothing and footwear must be appropriate for road and weather conditions. Footwear should be firm and stable, with no open toes or heels and fit securely to the foot. Remember also, as a professional driver, clothing that is provocative, advertises drugs, tobacco, alcohol or sex should not be worn. Individual districts/service providers should establish a proper dress code.

Drivers who present a professional image gain respect from their passengers.

DRUGS AND/OR ALCOHOL

Drugs and/or alcohol never mix with school bus driving. Remember that a hangover can adversely affect driving ability.

Legal drugs that affect your job performance:

- **Alcohol** - The most abused drug! It depresses the central nervous system. Effects: Impairs judgment, gives false sense of

confidence, reduces vision, hearing is less acute, concentration is difficult, speech and balance are affected and reactions are slowed.

- **Amphetamines** - Used primarily as a central nervous system stimulant. Example: Dexatrim (weight control). Effects: Changes in perception, over extension of the body's capabilities.
- **Antihistamines** - Found in allergy and cold medicines. Examples: Triaminic DH expectorant, Nyquil. Effects: Drowsiness, dizziness, slowed reflexes, impaired mental and physical abilities.
- **Barbiturates** - Acts on the nervous system. Example: Sleeping pills. Effects: Slowed reflexes.
- **Hallucinogens** - Drugs that produce hallucinations. Examples: Peyote and sometimes ethyl alcohol. Effects: False perceptions, mind wanders, may be distraught.
- **Hypertension drugs** - Used to control blood pressure. Effects: May cause emotional instability at times.
- **Inhalants** - Produces a quick "high". Examples: Solvents (glue), aerosol sprays (Binaca), anesthetics (ether). Effects: Dulls judgment, slows reflexes, reduces vision, hinders muscle control, distorts perceptions, and may cause sudden unconsciousness.
- **Narcotics** - Depresses the central nervous system, relieving pain and inducing sleep. Examples: Codeine, Morphine. Effects: Drowsiness, slowed reflexes, impaired judgment.
- **Tranquilizers** - Anti-anxiety for relaxation. Examples: Valium, Librium. Effects: Drowsiness, slowed reflexes, impaired judgment.
- **Prescription drugs or over the counter medications** - If you must take prescription drugs or over the counter medications, ask your doctor or pharmacist what the side effects are for the drug. You may not be able to take certain drugs and safely drive a vehicle.

OTHER FACTORS THAT AFFECT YOUR JOB PERFORMANCE

Attitude - Drivers who dislike their jobs, the people they work with, or some other aspect of their lives may find themselves daydreaming and not concentrating. A negative attitude can make drivers more prone to anger, fear, or other strong emotions that impair judgment and perception. A positive attitude will go a long way in influencing the driver's ability to perform his/her duties safely.

Training, driving skills and techniques are necessary and vitally important, but the best training cannot replace a proper attitude while driving. It has been said that life is 10% what happens to an individual and 90% how s/he reacts to it. Attitude is a choice - choose safety.

Confidence - Confidence is also a factor. Over confident drivers take unnecessary chances. Under confident drivers, on the other hand, may not make critical driving decisions in a timely manner.

Emotional and personal problems - Behind the wheel of a vehicle is no place to rehearse arguments or re-live family fights. When such strong emotional events dominate your thoughts, they leave no room for safe driving observations or the ability to make sound decisions.

Mental health - Generally speaking, the problems that fall into this category do not come on suddenly and, while often completely treatable, usually require time to treat. Drivers need to be aware of them, however. Mental health (or mental illness) is closely related to emotional upsets and to physical problems. Being depressed over the loss of a loved one will be a very emotional experience. Being depressed over a long period of time, with or without apparent reason, may be related to physical factors or brain chemical imbalances that characterize a mental illness.

Drivers experiencing on-going mental or emotional problems may need help from others. Seeking out available resources is the first step.

Self-esteem - These factors generally cannot be changed in a short period of time, but they do affect driving. Studies show that drivers who lack self-esteem have more accidents.

In conclusion, know when you, the professional driver, are “fit and ready” to drive the school vehicle. Know and acknowledge when you need help in becoming “fit and ready” to safely transport students. Safely transporting students is our business.

PRE-TRIP – THE VEHICLE

OPERATIONAL RULES – PRE-TRIP INSPECTION

4204-R-214.01. Each school transportation vehicle shall have a daily pre-trip inspection performed and documented by the school transportation vehicle operator, or a district authorized transportation employee, prior to the vehicle being placed in service. The pre-trip inspection requirements shall include as a minimum: service brake test, park brake test, lights (inside and outside), mirrors, emergency equipment, emergency door(s), wheels, tires, wipers, horn and exhaust system. Additional inspection items shall be determined by the district/service provider.

Pre-trip inspections contribute to safety and will add miles of trouble-free operation to the life of the school bus. These pre-trip inspections should consistently be routine and thorough.

Regardless of the engineering skill or workmanship incorporated in a school transportation vehicle, it cannot continue to deliver maximum safety, economy, and dependability unless it is properly maintained.

REMINDER - *Defects cannot be repaired if they are not reported.*

The following is an example of checks and tests to determine if your vehicle is safe and in good working order. Inspection will vary according to the type of vehicle being inspected and according to individual district procedure. The pre-trip inspection must be documented on a district form. Documentation shall include date, vehicle ID, items inspected, defects reported and signature of person performing inspection. Additional documentation is required if defects are found to include action taken to correct defects.

VEHICLE APPROACH

1. Check for signs of fluid leakage underneath, objects hanging or vehicle leaning. A flashlight is needed when it is dark.

ENGINE COMPARTMENT

1. **Oil Level** - Within the safe operating range on dipstick.
2. **Transmission Fluid Level** - Within the safe operating range on dipstick.
3. **Coolant Level** - Within the safe operating range in sight glass or translucent tank.
4. **Power Steering Fluid** - Within the safe operating level on dipstick or reservoir. Note if pump is belt or gear driven.
5. **Windshield Washer Fluid Level** - Sufficient fluid for use during entire trip.
6. **Water Pump** - Check if secure and not leaking. (Belt or gear driven)
7. **Alternator** - Secure, no frayed wires or loose connections. (Belt driven)
8. **Air compressor** (if equipped with air brakes) - Secure, no missing or broken bolts. May be belt driven or direct drive.
9. **Master Cylinder** (if equipped with hydraulic brakes) - No leaks, fluid in safe operating range.
10. **Hoses** - No cracks, cuts, holes, leaks, loose connections, rubbing or excessive wear.
11. **Engine Belts** - No more than 1/2 to 3/4 inch play, no fraying, visible cuts, cracks, or excessive wear. Identify each belt individually and know which component the belt operates. Newer buses will have only one belt.
12. **Wiring** - Check that it is secured, not frayed and has no visible signs of rubbing. Wiring should not be broken or exposed.
13. **Other items** may include: turbo, frame, exhaust, etc.

INSIDE THE VEHICLE

1. **Passenger Entry** - Door opens and closes correctly, steps are secure, free of tripping hazards, treads are not loose or excessively worn, handrail is secure and there is nothing in the passenger entry that has the potential of catching clothing, backpacks, etc. as passengers are entering or exiting.
2. **Driver's Seat** - Seat belt adjusted, functioning properly and properly secured. Seat adjusted for driver to reach pedals properly.
3. **Clutch/Gearshift** - Before you start the engine, depress clutch, select neutral. In vehicles with automatic transmissions, select park (if available) or neutral.
4. **Starter Interlock System Warning Device** - Device will sound if emergency exit(s) are locked.
5. **Low Air Pressure Warning Device** - Warning device may sound when engine is first started and when air pressure is below 60 psi.
6. **Gauges** - Oil pressure, water temperature, ammeter/voltmeter, fuel and air pressure gauges (if air-brake equipped.)
 - a. Oil Pressure Gauge - Should be within predetermined range established for the bus. Note: If bus is equipped with a warning light in addition to the gauge, it may light up as bus is started, but should go off immediately after engine starts. If light remains on or the gauge does not build to proper pressure, shut down engine and report the problem immediately to fleet maintenance.
 - b. Temperature Gauge - Indicates temperature of coolant in engine. "Cold" is proper reading when engine is first started. Gauge should move slowly to mid-dial as engine warms up. If gauge reads "hot" or temperature warning light comes on, shut off engine and report the problem immediately to fleet maintenance.
 - c. Ammeter Gauge - Indicates electrical charge from alternator to system. If discharging, stop engine and report it to fleet maintenance.
 - d. Voltmeter Gauge - Indicates condition of battery.
 - e. Fuel Gauge - Should be operable and indicating a safe margin of fuel for the trip.
 - f. Air Pressure Gauge - see below.
7. **Brake Checks:**
 - a. Parking Brake Check – Hydraulic or air brakes.

1. Start engine. (For air brake equipped vehicles, build air pressure to governed cut-out).
 2. With parking brake set and bus in drive or low gear, accelerate to 1,000 rpm. If vehicle moves, report it immediately to fleet maintenance for adjustment before putting vehicle in service.
- b. Service Brake Check - Hydraulic or air brakes. Release parking brake. Gently pull forward a few feet and apply service brake. Vehicle should stop with no pulling to the right or left.
 - c. Air Brake Check – 1-2-3-Test - This test procedure is designed to ensure that the safety devices of the air brake system operate correctly as air pressure drops from normal to low air supply. Build air pressure to governed cut-out. Chock wheels if necessary.
 1. **Air Pressure Gauge** - Shut off engine, disengage parking brake, fully apply service brake and hold for one minute, checking air pressure gauge. After the initial application drop, air pressure should not drop more than three pounds in one minute.
 2. **Warning Devices** - Turn ignition on. “Fan off” air pressure by rapidly applying and releasing service brake. Low air warning devices (buzzer, light) should activate as air pressure drops below 60 psi.
 3. **Parking Brake Valve** - Continue to “fan off” air pressure. Parking brake valve should close (pop out) between 10 and 40 psi depending on vehicle. Start engine and restore air pressure to 100-120 psi.
8. **Steering Play** - Should be no more than two inches of free-play in a 20-inch wheel when turning steering wheel back and forth. Engine should be running on vehicles equipped with power steering.
 9. **Mirrors and Windshield** - Mirrors clean, properly adjusted, not cracked or loose and with no obstructions. Windshield clean, not cracked, pitted, or shattered and with no obstructions.
 10. **Wipers/Washer Fluid** - Operate wipers using washer fluid. Wiper arms/blades secure, working properly, not cracked or worn.
 11. **Dash Indicator Lamps** - Working when corresponding directional signals, emergency 4-way flashers, 8-way warning system, high and low beam headlights are turned on.
 12. **Horn(s)** - Air horn and/or electric horn working properly.

13. **Heaters and Defrosters** - Heaters and defrosters working on all speeds. Check all panel switches.
14. **Safety Emergency Equipment** - Electrical fuses, if so equipped, or circuit breakers, three red reflective triangles, body fluid cleanup kit, first aid kits, two 24-unit kits for over 36 passenger rated vehicle and one 24-unit kit for 36 passenger or less rated vehicle, and fire extinguisher properly charged and rated (ABC) with current inspection date on tag and pin with plastic tie.

Reminder: Shake fire extinguisher on a regular basis.

15. **Seating** - No broken or loose seat frames, unsecured cushions, damaged foam or padding. Flip seat next to a side emergency door must fully retract by itself.
16. **Emergency Exits** - Emergency windows, roof hatches and service/emergency doors are properly labeled, and must open and close properly, and all warning devices operate properly and are properly labeled.

OUTSIDE THE VEHICLE

1. **Stairwell Light** - Light working and lens not broken.
2. **Mirrors** - Securely attached, clean, nothing obstructing the view.
3. **Fuel Door** - Door latches properly.
4. **Fuel Tank** - Securely attached, no leaks, fuel cap present.
5. **Reflective Tape** - Reflective tape on the exterior of the vehicle should be intact.
6. **Exterior Lights** - Check that all lights are clean, not cracked or broken, and that light is coming out of the entire lens area, not just a small portion. Check that all outside lights are illuminated and functioning per district procedure. This would include: front and rear 8-way warning light system (both amber and red lights), low and high beam headlights, taillights, brake lights, left and right turn signals, 4-way hazard flashers (front and rear) and reverse lights. Stop sign arm must come out completely, lights flashing alternately, no broken lenses and no broken or frayed wires. Reflective red coloring should not be excessively faded.
7. **Clearance Lights** - (Red for rear, amber for side and front) All outside clearance lights are clean and clearly illuminated. Check that none are broken or missing.
8. **Reflectors** - Check that reflectors are clean, none are missing, broken, are the proper color (red for front and back and yellow for side) and reflect or illuminate properly.

9. **Emergency Exits** - Check lettering on emergency doors and windows and proper door(s) operation.
10. **Battery Box** - Battery is secure, no corrosion and door latches.

STEERING

1. **Steering Box** - Securely mounted, no leaks, missing nuts, bolts or cotter keys.
2. **Steering Linkage** - Connecting links, arms and rods. No loose or missing nuts, bolts, and cotter keys. No excessive wear, cracks or broken parts.

FRONT SUSPENSION

1. **Springs** - No cracked, shifted, broken or missing leaf springs. No broken, distorted or loose coil springs or shackles. Clamps are present and secure.
2. **Spring Mount** - No cracked or broken spring hangers. No missing or damaged bushings; no broken, loose or missing axle mounting parts.
3. **Shock Absorber** - Securely mounted, no leaks.

FRONT WHEELS

1. **Rims** - No welded, damaged or bent rims or rust.
2. **Hub Grease/Oil Seal** - No leaks, no loose or missing nuts. Adequate oil level in sight glass, if equipped.
3. **Tires:**
 - a. Tread Depth - Tread depth minimum 4/32 inch. Recaps not allowed.
 - b. Tire Condition - No cuts or damage to sidewalls, tread, valve caps and stems, and tread evenly worn. ABC's of sidewall inspection - abrasions, bulges or cuts.
 - c. Tire Inflation - Check for proper inflation using a tire gauge or a device such as a mallet to strike the tires. A tire gauge is more accurate.
4. **Lug Nuts** - All present and tight, bolt-holes not cracked or distorted and no rust behind lug nut, which indicates looseness.

FRONT BRAKES

1. **Slack Adjustor** (air brakes) - Inspect according to district procedures. No broken, loose, or missing parts. Angle between push rod and adjustor arm should be a little over 90° when brakes are released, and not less than 90° when brakes are applied. When pulled by hand, brake rod should not move more than approximately one inch.

2. **Brake Chamber** (air brakes) - Securely mounted, not cracked, dented, or showing signs of leaking.
3. **Brake Hoses** (air or hydraulic brakes) - Couplings secure, no excessive wear, holes, fraying, cracks, or signs/sound of leaks.
4. **Drums** - Most brake drums (and shoes) are protected by a rock guard and cannot be checked during the pre-trip. Ask your school bus technician for proper pre-trip procedures if there are no rock guards. If drums are visible they should be checked for cracks or other damage. There should not be any grease or oil leaking onto or from the drum area. Check for any missing bolts.

REAR WHEELS

1. **Rims** - No welded, damaged or bent rims or rust.
2. **Hub Grease/Oil Seal** - No leaks, no loose or missing nuts. There is no sight glass on rear hubs.
3. **Tires:**
 - a. Tread Depth - minimum 2/32 inch. Recapped tires are allowed.
 - b. Tire Condition - No cuts or damage to sidewalls, tread, valve caps and stems, and tread evenly worn. ABC'S of sidewall inspection – abrasions, bulges or cuts.
 - c. Tire Inflation - Check for proper inflation using a tire gauge or a device such as a mallet to strike the tires.
4. **Lug Nuts** - All present and tight, bolt-holes not cracked or distorted and no rust present which indicates a loose lug nut.
5. **Dual Wheels** - No obstructions between dual wheels. Most school buses are equipped with Budd wheels and no spacers. If equipped with spacers, wheels should be evenly separated, spacers centered, tires not touching each other.

REAR SUSPENSION

1. **Springs** - No cracked, shifted, broken or missing leaves. No broken, distorted or loose coil springs or shackles. Clamps are present and secure.
2. **Spring Mounts** (shackles) - No cracked or broken spring hangers, no missing or damaged bushings, no broken, loose or missing axle mounting parts.
3. **Shock Absorbers** - Securely mounted and no leaks.
4. **Torque Arm** - Torque arm is mounted securely and not damaged.
5. **Air Ride** - Properly inflated. Vehicle sits level.

REAR BRAKES

1. **Slack Adjustor** (air brakes) - Inspect according to district procedures. No broken, loose, or missing parts. Angle between push rod and adjustor arm should be a little over 90° when brakes are released, and not less than 90° when brakes are applied. When pulled by hand, brake rod should not move more than approximately one inch.
2. **Brake Chamber** (air brakes) - Securely mounted, not cracked, dented, or showing signs of leaking.
3. **Brake Hoses** (air or hydraulic brakes) - Couplings secure, no excessive wear, holes, fraying, cracks, or signs/sound of leaks.
4. **Drums** - Most rear brake drums (and shoes) are protected by a rock guard and cannot be checked during the pre-trip. Ask your school bus technician for proper pre-trip procedures if there are no rock guards. If drums are visible, they should be checked for cracks or other damage. There should not be any grease or oil leaking onto or from the drum area. Check for any missing bolts.

UNDER VEHICLE

1. **Drive Shaft** - Not bent or cracked. Coupling joints secure and free of foreign objects, hangers secure and in place.
2. **Exhaust System** - Securely mounted, no cracks, holes, or severe dents. Carbon soot indicates a possible leak. No excessive noise with engine running.
3. **Frame** - No cracks, broken manufacturers' welds, or holes in floor. No loose, cracked, bent, missing, or broken cross members.

OPTIONAL EQUIPMENT

Inspect all equipment such as wheelchair lifts or ramps, wheelchair and passenger securements and other special needs equipment for proper working condition.

MIRROR ADJUSTMENTS

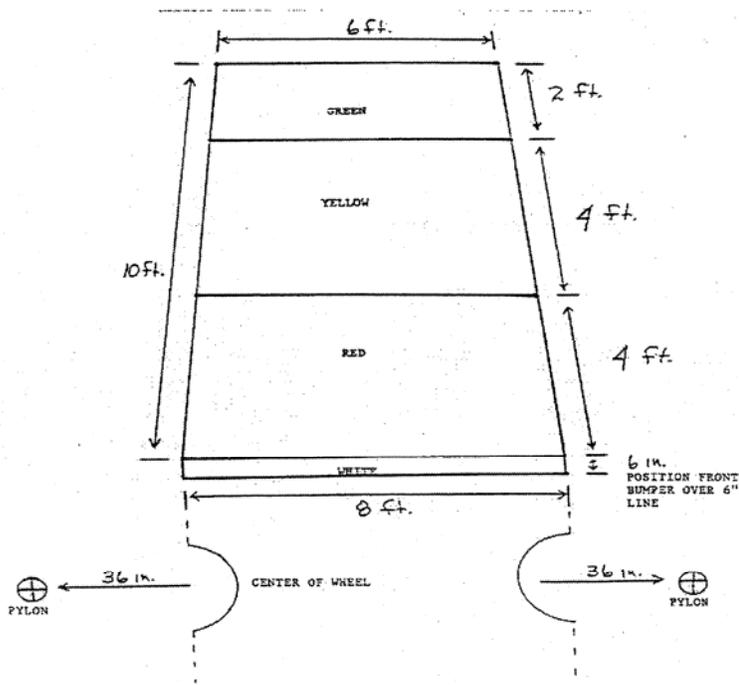
Before departing for a bus route or trip, make sure the mirrors are adjusted properly. The following grids can be painted or marked on the ground in the parking lot to allow each driver to check mirror adjustments before departure. The driver should adjust the seat so they may see properly in the mirrors, sitting straight and back in the seat.

MIRROR GRID FOR OLDER STYLE CROSSOVER MIRRORS

Front Mirrors - View front bumper and full painted area.

Side Mirrors - View wheel and pylon.

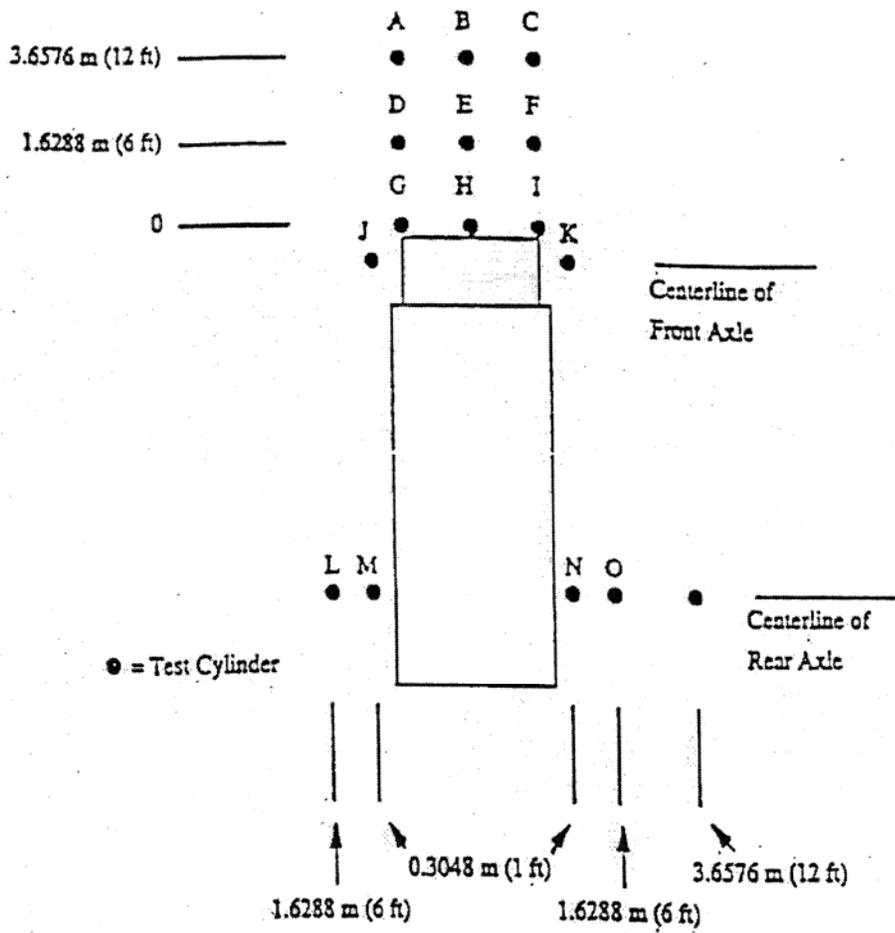
Assists driver when judging distance in front of vehicle.



It is recommended that these older style mirrors be upgraded to the new style mirrors meeting FMVSS 111. Because this is considered a safety upgrade, the cost is partly reimbursable on the CDE 40.

FMVSS III, Convex Cross-View Mirrors on School Buses

Effective December 2, 1993.



POST-TRIP INSPECTION

A post-trip inspection can detect problems that have occurred while on the route. Following is an example of a post-trip inspection. Individual districts may establish their own procedure. As with the pre-trip, the post-trip must be documented.

BUS EXTERIOR

Perform a walk around inspection looking for burned out bulbs, air leaks in tires or bus damage so immediate repairs may be made before the vehicle is needed again. This will prevent the vehicle from being taken out of service for small, easily repaired items.

ENGINE SHUTDOWN

- Check all lights.
- Shut down all electrical equipment.
- Perform brake checks according to district procedures.

BUS INTERIOR

- Clean/sweep bus.
- Close windows.
- Check for sleeping students or items left on bus. Refer to 1 CCR 301-26, 4204-R-224.07.
- Look for damage to the vehicle.

PAPERWORK

- Record mileage, if required.
- Report vehicle defects.

PREVENTATIVE VEHICLE MAINTENANCE

Preventative maintenance is the regularly scheduled care of a vehicle that will aid in the dependability and maximum life of the various components. It is a carefully organized system of inspections made at regular mileage or time intervals, combined with immediate attention to all reported defects. These inspections are made up of a series of well-balanced checking procedures, combined with the process of cleaning, tightening, lubricating, and adjusting components and systems. It is the best known, simplest, and most economical means of protecting the original investment in the school bus fleet.

The driver has a responsibility in preventative maintenance. The driver is on the road with the school transportation vehicle for a number of hours each day and is in a position to observe its performance under all conditions. Learn to recognize defects and immediately report the symptoms to the vehicle maintenance department. Do not attempt to

diagnose the problem. Report anything unusual that you hear, feel, see or smell. Remember, defects cannot be repaired if they are not reported.

Use all your senses to detect problems with the vehicle.

Reminder: *Voluntarily driving a school transportation vehicle with a known serious defect will or can endanger the students and is illegal.*

Listen for Trouble:

- Sharp knock when picking up speed
- Light knock when engine is running at idle speed
- Dull, regular knock
- Clicking or tapping noises
- Continuous or intermittent squeal or squeak
- Loud exhaust noise
- Engine backfiring, missing, popping, spitting, or overheating
- Steaming or hissing sounds

Feel for Trouble:

- Excessive vibration
- Steering wheel
- Drive train
- Low speed or high speed shimmy
- Hard steering or steering wander

Look for Trouble:

- Sudden change in engine temperature
- Sudden drop in oil pressure
- Low oil pressure
- No oil pressure
- Excessive oil consumption
- Smoke coming from under the dash or hood
- Scuffed tires or uneven wear
- Irregular air pressure

Smell Trouble:

- Fuel
- Anti-freeze
- Burning wire insulation, rubber, oil, or rags

- Exhaust fumes
- Hot brakes

Reminder: *If you don't report a problem, it can't be fixed.*

Regardless of the engineering skill or workmanship incorporated in a school transportation vehicle, it cannot continue to deliver maximum safety, economy, and dependability unless it is properly maintained. The repair of school transportation vehicles should wisely be left to a skilled service technician. The driver can do much to aid the technician in locating problems and often help to prolong the life of the vehicle by doing the daily inspections.

CORRECTIVE VEHICLE MAINTENANCE

This program provides for the immediate repair of broken or worn parts that make driving the vehicle unsafe or illegal. Your help is vital and will be expected in reporting defects of the vehicle. If reports are made, repairs will be made as soon as possible. However, if the report is not made, the service technician may not be aware of the problem until it is too late. A written report is required.

1 CCR 301-26, 4204-R-215.01. Repairs and Maintenance.

“The district/service provider shall have a system to document that the defects and deficiencies of school transportation vehicles and the action taken addressing the reported defect or deficiencies are being reported.”

SERVICING OF VEHICLES

This program provides for the servicing of all vehicles. The extent and procedure of this program will vary with each district. Be sure you are aware of your responsibility with respect to the following items:

- Fueling
- Adding fluids:
 - Oil, coolant, windshield washer fluid
 - Power steering fluid, transmission fluid
- Washing vehicles/interior cleanliness
- Issuing of safety equipment as needed