

# Preventative Maintenance Vehicle Inspection Report "B"

Date//	R/O #	Unit #		
Kms	Engine Hours			
Inspector Name (print)	_ Safety Due Date	/		
Inspector Signature	Foreman/Lead Ha	nd Signature		
Commitment To Division: "The signature certifies this unit has been thoroughly inspected and, to the best of our knowledge and efforts, will perform properly, without a breakdown, until its next scheduled PM."				
Recall Status Completed Yes	No			
Note: Always refer to service publications for curre lubricants, and fluids used and added on inspectio	ent specifications and recon n sheet.	nmended adjustments. Record material,		
OK = Passed inspection. No faults found.	NR = Needs repair	UA = Unavailable		
	IVER'S AREA INSPE	CTION		
1. Review school bus driver inspe	ection log book for driver co	ncerns and requested repairs.		
2. Entrance Door a) Check vandal lock and starte b) Check door hinges for loose c) Check grab handle(s) and er d) Check door weather stripping e) Check operation of air door starte	er interlock operation. Lubricate ness, broken, or damaged part ntry steps for loose, damaged, g for rips, damage, and missine speed opening and closing. Ad	e mechanism. ts. Lubricate mechanism. and missing parts. g parts. djust as required.		
<ul> <li>3. Brake Pedal         <ul> <li>a) Operate the brake pedal and</li> <li>b) Before engine is running, presis in the off position.</li> <li>c) Check rubber pad for excess</li> </ul> </li> </ul>	ensure it returns to the fully re ss brake pedal and listen for e sive wear.	eleased position. electric booster motor operation when the key		
<ul> <li>4. Clutch Pedal (if applicable)</li> <li>a) Check clutch pedal for free to from 1 to 1 ½ inches.</li> <li>b) Check rubber pad for excess</li> </ul>	ravel distance before pressure sive wear.	is exerted on clutch fingers. It should be		
<ul> <li>5. Accelerator Pedal         <ul> <li>a) Test high idle function switch</li> <li>b) Check for sticking pedal.</li> </ul> </li> </ul>	) for 1500 RPM.			
<ul> <li>6. Safety Equipment &amp; Permits (to a) Verify the vehicle has: <ol> <li>Approved fire extinguist bottom with rubber mailing</li> <li>Three approved trianguiling</li> <li>Sealed first aid kit.</li> <li>Sealed first aid kit.</li> <li>At least one spare fuse</li> <li>Ensure the following docume</li> <li>Current registration.</li> <li>Current safety certification</li> <li>Strobe light permit.</li> </ol> </li> </ul>	<ul> <li>be located within 2 metres</li> <li>her securely fastened to vehicle</li> <li>llet.</li> <li>ular reflectors.</li> <li>for lamp circuits (in fuse panel)</li> <li>ants are in the vehicle:</li> <li>te.</li> </ul>	of the driver's seat) e. Remove, invert extinguisher, and tap ત્ર).		









### 17. Parking Brake

- a) If equipped with spring parking brake, actuate valve and observe holding capacity while attempting to move vehicle. Release valve and make sure brake releases by moving bus.
- b) Check spring parking brake emergency operation. Brakes must apply without power to emergency brake.
- c) Check manual hand brake operation if not equipped with spring parking brake. Put transmission in gear and with the engine at idle, **Bus should not move.**



#### 18. Hydraulic Brake Leakage & Pedal Reserve

With engine running and without pumping or repeated brake pedal applications, apply a moderate foot force to pedal and maintain for 80 seconds. Visually inspect for:

- a) Leakage
- b) Travel

For additional information, refer to National Safety Code Standard 11 Handbook.



#### 19. Hydraulic Booster

- a) Check pedal free travel, adequate pedal height, booster, and brake action. Note any erratic operation.
- b) Check operation of system failure warning lamp and low vacuum warning device (visible and audible), if applicable.

# PASSENGER AREA INSPECTION



### 20. Body Interior

- a) Check for loose panels or windows.
- b) Check for loose accessory items or wiring.
- c) Inspect bus for cleanliness.
- d) Check roof for holes, panel condition, and evidence of water leaks.
- e) Check front and rear bulkheads and side panels for holes and damage.
- f) Inspect floor for holes, loose flooring, and signs of water/dust leaks.



# 21. Emergency Exit Windows/Hatches

- a) Open and check operation of emergency exit windows and hatches.
- b) Lube hinges, latches, and switches.
- c) Check for proper sealing.

22. Inside Emergency Decals

d) Check for buzzer/alarm operation.

- a) Emergency window decals are present and in good condition.
- b) Emergency door decals are present and in good condition.
- c) Entrance door decals with instructions for opening in case of emergency are present and in good condition.
- d) Any other decal(s) as required by school division are present and in good condition.



# 23. Passenger Windows

- a) Check window latch operation and lube.
- b) Check for cracks.
- c) Check for proper stamping to identify glass (Manitoba uses laminated glass).



#### 24. Rear Emergency Door Interlock

- a) Check operation of interlock system. Buzzer/alarm should sound with key in "run" or "accessory" position. Attempt to start bus. **Bus should not start.**
- b) Lube locking pin.



- 25. Passenger Seats
  - a) Check lower seat bottoms for security.
  - b) Check seat covers for wear, cuts, and tearing.
  - c) Check seat foam condition.
  - d) Check for loose panels inside seat.
  - e) Check for proper torque of seat bolts.



OK NR	TEST DRIVE INSPECTION
	<ul><li>26. Steering Feel</li><li>a) Check for excessive play, binding, and hang up.</li></ul>
	<ul> <li>27. Shifting Ease</li> <li>a) For manual transmissions, shift gears while driving. Note clutch release, excess play, binding, or slippage.</li> <li>b) For automatic transmissions, shift through gears. Check for slippage or unusual noises.</li> </ul>
	<ul> <li>28. Engine Operation <ul> <li>a) Note acceleration and deceleration response with shifting transmission.</li> <li>b) Check for surging or missing.</li> <li>c) Check for unusual noises.</li> <li>d) Check exhaust brake operation.</li> </ul> </li> </ul>
	<ul> <li>29. Unusual Noises, Rattles, Vibrations, Leaks</li> <li>a) Listen for unusual noises, rattles, and vibrations during test drive.</li> <li>b) Note any air or fluid leakage in bus and any noticeable fluid leakage on roadway.</li> </ul>
	<ul><li>30. Cruise Control</li><li>a) Check cruise control operation.</li></ul>
	<ul><li><b>31. Run Engine up to Full Governed RPM.</b> Note: Engine should be at normal operating temperature.</li><li>a) Record reading shown on tachometer. Note any erratic action of tachometer needle.</li></ul>
	Engine Governed RPM (Diesel Engine Only)
	b) With engine at operating temperature, record indicated temperature on the inspection sheet.
	Engine Temperature
	c) Record oil pressure at base RPM or as manufacture recommendations on inspection sheet.
	Oil Pressure
	<ul> <li>32. Hook Up Diagnostic Equipment <ul> <li>a) Download ECM, attach fault codes and trip report to repair order.</li> <li>b) Perform manual re-gen with engine diagnostic software. (Diesel Engine Only)</li> <li>c) Reset maintenance monitor and verify time parameter, if applicable.</li> </ul></li></ul>
	AROUND THE VEHICLE INSPECTION
	<ul> <li>33. Lighting, Signals, &amp; Reflectors <ul> <li>a) Turn on all lamps and check operation.</li> <li>b) Check operation of 8-way loading lamps (sequential mode) and inspect for faded lenses.</li> <li>c) Check porch lamp operation.</li> <li>d) Check four-way flashers.</li> <li>e) Check turn signals.</li> <li>f) Check stop lamps.</li> <li>g) Check back-up lamps.</li> <li>h) Inspect all lenses for cracks, fading, or dirt inside lenses.</li> <li>i) Check for missing or broken reflex reflectors.</li> <li>j) Check for missing or damaged reflector tape.</li> <li>k) Check back-up alarm, if equipped.</li> </ul> </li> </ul>
	<ul> <li>34. Body Appearance <ul> <li>a) Inspect vehicle for physical or abuse damage, dents, serious paint scratches, missing rivets, or deterioration. Record details on "Description of Defects Found" sheet (see last page).</li> <li>b) Check mirrors, brackets, and mounting points for loose fasteners and body mounts.</li> <li>c) Check mirror heater operation.</li> <li>d) Inspect fuel tank filler cap gasket, thread condition, and vent operation to meet manufacturer's specifications.</li> </ul></li></ul>





- a) Inspect tires for cuts or damage.
- b) Check side walls for damage and excessive cracking.
- c) Inspect for cupping and excessive feathering or edge wear.
- d) Check tire pressure and record readings on pressure/wear chart on inspection sheet. Inflate as required by manufacturer's specifications. Note: Any tire with 80 PSI or less is to be considered flat and should be removed for repair. Do not air up tires that are flat. Remove them for repair.
- e) Measure tread depth and record readings on pressure/wear chart. Replace front tires when depth is 4/32" or less.
- f) Rotate new tires after 40,000 kms. Rotate left to right when depth differential is greater than 2/32".
- g) Check for missing or damaged valves caps and stem locks. Note: Valve caps should be steel.
- h) Check toe-in adjustment.

## OK NR

- a) Check battery box cover for cracks or damage. Ensure cover fits properly in place and locking straps
- b) Inspect for cracked brackets and loose or missing bolts.
- Ensure batteries are securely held in box or carrier. Caution: Do not over-tighten battery
- c) Check cables for proper routing, insulation, clearances, clamping, signs of chafing, and deterioration.
- d) Disconnect all battery cables including jumper cables running between the batteries. Clean battery
- e) Test each battery individually with load tester or impedance tester to verify condition of battery.



- d) Check for operation of inside and outside release handle and bent or loose rods.







# 43. Rear Tires

- a) Inspect tires for cuts or damage.
- b) Check side walls for damage and excessive cracking.
- c) Inspect for cupping and excessive feathering or edge wear.
- d) Check tire pressure and record readings on pressure/wear chart on inspection sheet. Inflate as required by manufacturer's specifications. *Note: Any tire with 80 PSI or less is to be considered flat and should be removed for repair. Do not air up tires that are flat. Remove them for repair.*
- e) Measure tread depth and record readings on pressure/wear chart. Replace rear tires when depth is 2/32" or less.
- f) Check for missing or damaged valve caps and stem locks. Note: Valve caps should be steel.

Record tire pressures and remaining tread on chart:



#### 44. Retorque Wheel Nuts

a) Reforque all wheel nuts using a torque wrench to the torques shown on the chart below.

#### Socket Size

1 5/16" or 33 mm

Hub Pilot Wheels
Spoke Wheels

450-500 ft lbs. 160-220 ft lbs.

**Torque** 

### UNDER HOOD INSPECTION



#### 45. Hood

a) Inspect hood hold down latches for loose bolts and brackets.

1 1/4"

- b) Check hood lift operation.
- c) Inspect hood hinges, brackets, cables, hood stop brackets, and safety locks.
- d) Check hood to cowl clearance and ensure hood does not contact cowl at any location.
- e) Lube hood stops.



#### 46. Radiator & Shroud

- a) Check mounting brackets and fasteners for looseness, missing, broken, and damaged components.
- b) Inspect for leakage or stains which would indicate radiator leaks.
- c) Inspect air to air for cracks, loose clamps, and leaking hoses.
- d) Check for radiator obstructions caused by bugs or other debris. Clean as required.
- e) Check winter front and bug screen.

47. Cooling System

- a) Pressure test cooling system. Check for leaks. Remember to inspect for coolant leaks at engine manifolds, cylinder heads, and heater valves.
- b) Test coolant and record SCA level and freeze point on inspection sheet. Replace water filter (if applicable) only if SCA conditioner is added to the cooling system.
- c) Inspect and pressure test radiator cap for damage and correct fitting.
- d) Inspect hoses for wear, chafing, cracking, loose clamps, hardening due to age, kinking, and leakage.
- e) Inspect all hoses to ensure spring type silicone clamps are used when required.
- f) Open and close the coolant filter shut-off valve to prevent it from seizing.

SCA Reading

Freeze Protection

Note: Extended life coolant is to be tested with coolant test strips or as recommended by engine manufacturer. Always follow testing intervals as outlined in the maintenance manual.









- vii) Drag link.
- viii) Tie rod ends.



# OK NR



#### 70. King Pins/Ball Joints

- a) Raise vehicle front end and use a pry bar to check for excessive looseness and wear. Note wheel action as front end is being raised. A pry bar can also be used to check looseness of spindle to axle with brakes applied.
- b) Lubricate king pins with unit suspended.

## 71. Front Springs

- a) With front end still elevated, use a pry bar to check for spring pin, spring pin bushing, and shackle wear.
- b) Check front springs and U-bolts for broken, shifted, loose, or misaligned parts.
- c) Torque U-bolts to manufacturer's specifications.
- d) Lubricate spring pins with unit suspended.

#### 72. Front Wheel Bearings

- a) With the front end still elevated, check for looseness and excessive wear with brakes not applied.
- b) Rotate wheels and listen for bearing noise.
- c) Check front wheel hub oil level, and for water contamination of the wheel hub oil.
- d) Check for leaks. Repair as required.
- e) Repack grease-filled bearings as outlined in maintenance manual service interval.

#### 73. Starter

- a) Visually inspect starter for loose mounting bolts and cable connections. Check for discolored connections.
- b) Inspect for frayed or chafed wiring insulation.
- c) Check for proper grounding (refer to service manual).

### 74. Engine & Transmission Mounts

- a) Inspect for loose nuts and bolts and deterioration of mounts.
- b) Tighten any loose transmission, bellhousing, and/or cover attaching bolts.
- 75. Oil Levels & Leaks Engine, Transmission, Differential, Steering

Note: An oil leak is defined as an obvious oil trail or stream flowing from a component. A mist or "sweat" of oil around a component is not an oil leak.

- a) Inspect bottom of engine for leaks.
- b) Check transmission oil level. Inspect transmission for leaks at cover, clutch housing, power take-off cover, and rear seal.
- c) Check rear axle oil level. Inspect differential for leaks at mounting gasket, bolts, pinion cover, axle housing, and wheel seals.
- d) Check differential breather/vent by rotating the cap to ensure the breather is not plugged.



# 76. Exhaust System

a) Inspect brackets for cracks and loose mounting bolts.

b) Inspect exhaust pipes and muffler for leaks, holes, restrictions, and damage. Note: Tail pipe should be even with or not more than 1" past rear bumper.



77. Fuel Tank Mounting

- a) Check for loose or cracked brackets, bolts, corrosion, and shifting support bands.
- b) Inspect for fuel leakage.
- c) Inspect for proper routing, clearances, clamping, chafing, kinking, deterioration, and fuel line leakage.
- d) Inspect breather hose condition.

#### 78. Transmission & Axle Pinion Flange

a) Inspect for looseness.



# 79. Automatic Transmission

- a) Inspect and adjust linkage.
- b) Check neutral safety switch for proper operation by putting the vehicle in gear. Turn the key to the start position. Bus should not start. *Caution: Make sure park brake is applied.*







# 86. ABS System

a) Inspect leads, connections, and wiring for proper routing, clearances, clamping, signs of chafing, kinking, deterioration, and leakage.



# OK NR

#### 87. Brake Pads

- a) View brake pads through inspection slot in the backing plate. Measure brake pads and record remaining thickness on the inspection sheet.
- b) Check the "Needs Repair" box when brake pad thickness is 1/8"or less.

#### **Brake Pad Thickness Chart**



#### 88. Brake Rotors

a) Check for broken or cracked surfaces or deep grooves. Remove wheels if required. For additional information, refer to NSC Standard 11 handbook and manufacturer specifications.



#### 89. Brake Hoses, Lines, & Fittings

a) Inspect hoses for proper routing, clearances, clamping, wear, chafing, kinking, deterioration, bulges, and leakage.

Note: Bus will be placed out of service during a DOT inspection if brake hose outer reinforcement is worn through OR if brake hoses bulge or show evidence of swelling when pressure is applied.

#### 90. Engine Oil Filters

- a) Drain and replace engine oil.
- b) Take oil sample mid-stream while draining oil and complete required documentation.
- c) Remove old oil filter while engine oil is being drained.
- d) Fill new filters with clean oil and install.
- e) Run engine and check for leaks.
- f) Re-check oil level.

#### 91. Fuel Filters

a) Change fuel filters using OEM recommended filters.



#### 92. Lubricate Chassis

- a) Grease all lubrication points on the vehicle paying special attention to the following procedures:
  - i) Front end steering components\* and spring pins\*\*: Raise the front end by lifting the frame, not the front axle.
    - \* Steering components: All steering components must be greased until fresh clean grease appears.
       \*\* Spring pins: Grease until fresh clean grease appears at both sides of each spring pin.
  - ii) Lower vehicle: Thrust bearing is lubed by greasing the lower king pin bushing with the vehicle weight on the tires.
  - iii) Universal joints/drive shafts: Fresh clean grease must appear from all u-joint trunnions. Slip
  - yokes should be greased until lube appears at pressure relief hole or through the dust shield.
  - iv) Clutch: Grease the release bearing until fresh clean grease appears out the back of the bearing. Grease cross shaft bushing.
  - v) Rear suspension: Lube all rear suspension grease points (if applicable).
  - vi) Grease park brake linkage at pivot points.

#### 93. Inspection Sticker

- a) Attach an updated inspection reminder sticker to driver's side vent window.
- b) If wheels were removed, ensure a "Retorque Notice" decal is attached to the outside of the driver's vent window.





- r) Inspect any other parts of the securement system and accessories that may not be specifically indicated in this checklist but are pertinent to a safe operational system.
- s) Important! WTORS that are suspected to have been in used during a collision are to be replaced. as per instructions from the vendor



#### 100. Interlock Device

a) The bus shall be equipped with an interlock device, linked to the vehicle brakes or transmission, that shall prevent the movement of the vehicle if the lift is not stowed and the lift door is not securely closed. The interlock device or systems are engaged, except the lift shall still function when the emergency override is used (as per CSA D250).

For additional information, refer to the applicable CSA D250.



# **Description of Defects Found**

Ref #	Details

Pupil Transportation Unit - Version 2 - January 2020