NC BUS FLEET:
North Carolina
School Transportation Fleet Manual

Vehicles
Preventive Maintenance
School Bus Inspections

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manual. It is important that the installation of new equipment or alteration of appearance be coordinated through and approved by DPI Transportation Services to ensure the integrity and longevity of the fleet.

Preventive Maintenance

Essential preventive maintenance activities provide a uniform standard necessary to ensure a safe transportation environment for the students in the Public Schools of North Carolina. It is each LEA's responsibility to maintain school buses as described in this manual. While the maintenance programs presented in this manual represent the minimum requirements for all school buses and service vehicles, more frequent service may be warranted at times. The purpose of the maintenance programs outlined herein is to promote repair consistency and cost efficiency, and to assure that school buses and service vehicles are maintained in safe operating condition.

This manual is used in conjunction with the state's system for fleet management – the Business Systems Information Portal (BSIP), a project of the North Carolina Department of Transportation (NCDOT). BSIP is an online information system through which 100 school bus garages are provided access to their fleet maintenance data. The bus garages share the system with NCDOT and the State Highway Patrol. Data entered by the users are updated in real time and scheduled maintenance activities are reported on a daily basis. The principal areas addressed by BSIP are as follows:

- ~~1.~~ Vehicle replacement status and basic identifiers (e.g. warranty date, VIN)
- ~~2.~~ Preventive maintenance and inspection scheduling
- ~~3.~~ Inventory management for repair parts, fuel and tires
- ~~4.~~ Vehicle maintenance and repair costs histories

Timely updating of fleet maintenance data in BSIP is a critical component of proper preventive maintenance.

School Bus Inspections

North Carolina General Statute 115C-248(a) states the following:

"The superintendent of each local school administrative unit, shall cause each school bus owned or operated by such local school administrative unit to be inspected at least once each 30 days during the school year for technical defects or other defects which may affect the safe operation of such bus."

Every 30 calendar days, each school bus (and activity bus) is required to be inspected for mechanical or safety-related defects. This manual outlines a consistent set of items to be inspected on each school bus. Further, criteria that require a bus be placed "out of service until repaired" are provided so that each ~~technician~~ inspector has a consistent process by which to assess a bus during the inspection.

Effective August 1, 2011, LEAs shall require each 30-day inspection required under G.S. 115C-248 to be conducted by an individual who has completed the training and certification requirements administered by the Department of Public Instruction. (State Board of Education Policy TCS-H-011).

The success of this maintenance program will be assured through the cooperation of all LEA transportation employees. Assignment of personnel to the prescribed duties listed in this manual is

VEHICLES

Each local board of education is authorized to own and operate a school bus fleet under Statute 115C-239. These fleets include school buses for basic to-and-from-school transportation and the service vehicles required for maintenance of those buses and delivery of fuel to those buses. The local boards originally purchased these vehicles over a period of many years. The state assumed the responsibility of replacing these vehicles in the 1930's under Statute 115C-240(e)(f). The rate at which vehicles are replaced depends on the age and mileage of the vehicles, subject to appropriations from the General Assembly. The State Board of Education has the responsibility of purchasing the vehicles and allocating those vehicles to the local boards fairly and equitably on an annual basis.

In keeping with this charge, school buses are classified in one of several categories as indicated below:

Status Codes

E1 – A bus that has already been replaced, not needed as a spare but not designated for sale. Reserved by DPI for future use as needed for credit redemption or to be reinstated due to a crash, etc.

E2RB - A bus titled to the LEA that has been replaced by the state and authorized for use as a regular route bus, subject to replacement by the state as the need arises and as funds are available.

E2RC - A Capital Outlay bus titled to the LEA that has not been replaced by the state and authorized for use as a regular route bus, subject to replacement by the state as the need arises and as funds are available.

E2LC - A bus loaned to the LEA, authorized for temporary operation from state funds as a regular route bus due to additional transportation needs. Authorization is contingent on a commitment by the LEA to order a capital outlay bus or eliminate the need for an additional bus within 18 months.

E2RR - A bus designated for replacement by DPI Transportation Services due to age or mileage depending on funds available.

E2NR - A bus purchased from the state that is not on state replacement but is used as a regular route bus. Any such bus cannot be older than buses operating on the current replacement schedule and is allowed only as authorized by DPI Transportation Services.

E3 ~~–~~ Wrecked. A bus titled to the LEA that has not yet been replaced, but which has been wrecked and is awaiting a replacement vehicle to be purchased or transferred

E4 - A vehicle titled to the LEA, having already been replaced by the state with a new vehicle, no longer needed by the LEA and is designated to be sold as surplus. These vehicles are not to be used for any purpose and must be parked in a safe location that allows easy access. E4 vehicles will be priced by the area transportation consultant at fair market value. Proceeds from sale of an E4 vehicle will be used to fund the purchase of replacement service vehicles. It is required that E4 vehicles be cranked every three months to help maintain mechanical integrity. School buses and fuel trucks sold to an LEA may be discounted. No parts shall be removed except as described on page 36~~36~~ “Utilization of Surplus Equipment” of this manual.

E6 - Sold Equipment This status is assigned to any vehicle after it is sold or otherwise discarded

E8 - Local Vehicles (e.g. activity buses, administrative staff cars, driver's education vehicles, local school buses, local maintenance vehicles, mowing/landscaping equipment etc.). These vehicles are typically not directly involved in the to/from school transportation for grades K-12. No state funds may be expended for parts/labor/fuel for these vehicles. By convention, these vehicle and equipment numbers are 7000 and 8000 series

E0~~O~~B - A school bus that has been turned in for credit and is available for transfer to another county. This is a bus that has not yet reached the replacement criteria and can be used to replace a total loss bus or to redeem a bus credit. These vehicles are not to be used for any purpose and must be parked in a safe location. It is required that E0B vehicles be cranked every three months to help maintain mechanical integrity.

E0~~O~~S - A service vehicle available for transfer to another county. This is a vehicle that has already been replaced and can be used on a temporary basis as a spare vehicle by another county, as coordinated by DPI Transportation Services.

ESP - A bus titled to the LEA and was once authorized for use as a regular route bus, but because of current demands is not being utilized on a daily basis. At such time that the fleet is reviewed for bus replacements, a status ESP "parked" buses will not be included in the replacement pool. ~~They~~ It can be used as a spare and will count towards the 10% spare fleet.

ESS - A bus titled to the LEA, having already been replaced by the state with a new bus, authorized for use as a spare bus when a regular route bus is not available due to mechanical failure or routine maintenance. ESS buses cannot be used for any other purpose.

EZ - A bus that has been rendered inoperable due to an accident or mechanical condition and is available statewide for cannibalization.

Capital Outlay Purchases

An LEA may purchase vehicles to increase the size of the fleet that provides school transportation. The need for this action is generally the result of growth, opening/closing of schools or re- districting. An LEA is given this authority under Statute 115C-249(a) and the request for such additions must be approved by DPI Transportation Services.

For warranty purposes, it is in the best interest of the LEA and the state to ensure that the newest school buses are in regular route service. New Capital Outlay buses are received as In-Service buses (status E2RC). If these buses are not needed in the fleet, they ~~will~~ may be converted to local school or activity buses (8000 number), sold or turned in for credit.

As allowed for in the Public School Law, DPI Transportation Services will review all requests for capital outlay vehicles. LEAs will have to justify any capital outlay purchases if the county already has any ESP buses or bus credits.

School Bus - When needs exceed resources, a local board may request that a school bus be added to the state replacement schedule. The state will pay for the operation of a temporary bus (Status E2LC) as long as the local board commits to the purchase of a new bus by submitting a letter requesting such use and issuing a purchase order within eighteen months to purchase a new bus. The new bus will be added to the state replacement schedule upon delivery to the local board. Under certain circumstances, an LEA may purchase a used bus from another LEA for the purpose of capital outlay upon approval of DPI Transportation Services. As long as the

Surplus vehicle sale procedure

1. Prices are set by DPI consultant
2. Advertise vehicle on DPI website, local paper or place a for sale sign in vehicle parked in public view
3. Receive certified check, cashiers check or money order to NCDPI from customer.
4. Sign title over to customer.
5. Complete a damage / flood and mileage statement and give to customer.
6. Director or cost clerk will forward payment and form TDE6 to DPI Transportation services in Raleigh.
7. Bulk sales should be directed to Transportation Services in Raleigh.
8. If bus is sold to a Charter school only county name must be removed.

Surplus buses and service vehicles will be priced for sale or bid on a TD-13 Discarded Equipment Form by your regional area transportation consultant. Buses and service vehicles shall not be sold unless priced in writing on the proper form prior to sale by the area transportation consultant.

Cannibalized Vehicles – In some cases, DPI Transportation Services may designate a vehicle as Salvage ("cannibalized") so that useful parts from the surplus vehicle can be used in other state replacement vehicles. This is often used when a wrecked vehicle has a useful engine, transmission, etc. Once completely stripped of parts, upon DPI approval, the bus will be sold for scrap metal to a local salvage company or at a reduced price following the same procedures as other sold vehicles.

Alterations and Modifications to School Buses

Because of the State's responsibility to replace school buses, no school bus is to be altered in appearance, color, lettering, or equipment unless authorized by the Department of Public Instruction, Transportation Services Section. It is permissible to update older model school buses to the current year school bus specifications. Any safety item included in the most recent issue of the North Carolina School Bus Specifications may be added. However, the items must be of the same model and type of material as described in the specifications and also installed in the manner described in the specifications. The following list includes safety items that may be added to update older school bus without specific written approval.

Items that have been added to bus specifications in recent years:
(Note: the following is for example purposes, but is not an all-inclusive list)

- Passenger Advisory System
- PowerPoint
- Integrated Child Restraint Seats
- ~~Cohesive~~ Premium Quality FF Friction Rated Brake Linings ~~(FF)~~
- Strobe Stop Signs
- LED Lighting
- Reflective lettering
- Polyurethane paint
- Reflective stop sign material
- Air dryer
- Automatic slack adjusters
- Parking brake interlock
- Synthetic differential lube
- Driver fan
- Exhaust pipe extension turn down
- Pro-form fire block seat material
- Strobe lights
- Rear Scope lens
- Roof hatches
- Backup alarms
- Right side hand rails
- Vandal Locks (requires electronic interface to ensure emergency exits are unlocked before the bus will start)
- Broom holder (non-metallic
- RRX/No Right Turn License Plate
- Extended Life Coolant
- H range tires

Items not included in specifications, but approved for addition to school buses

- External Motion Detection System
- ~~Vandal Locks (requires electronic interface to ensure emergency exits are unlocked before the bus will start)~~
- Two-way Communications
- Global Positioning Devices
- Electronic Control Module Monitoring Devices
- Exhaust Braking System
- Secured trash can~~n / broom holder (non-metallic)~~
- Video Cameras (internal and external)
- Crash barrier cover with pocket
- Fifth brake light

Other safety or cost efficiency items not included in the school bus specifications may be installed on your school buses. However, Transportation Services must receive a written request and approval granted prior to actual installation on a bus. Any item added would be considered a pilot test and must be reviewed by a Transportation Services staff member prior to the bus being put in service.

Note: Some items that have been updated in the specifications through the years should not be changed on older model buses to ensure the integrity of the bus configuration. For instance, tire sizes must not be changed because of the internal odometer and speedometer calibrations. Mirror configurations are certified by the manufacturer and can only be changed with written approval from DPI Transportation Services, to ensure appropriate measures that the new configuration meets Federal Motor Vehicle Safety Standard # 111.

Tort Claims - Insurance

School buses and service vehicles are covered through a program of "self-insurance" rather than by an actual insurance policy. Damage to a vehicle is covered either by the insurance of the (other) at fault party or repairs are made from state transportation funds. Driver negligence for school buses and service vehicles is covered through the state Tort Claims Act – G.S. 143-300.1, which reads in part:

> ***§ 143 300.1. Claims against county and city boards of education for accidents involving school buses or school transportation service vehicles.***
>
> *(a) The North Carolina Industrial Commission shall have jurisdiction to hear and determine tort claims against any county board of education or any city board of education, which claims arise as a result of any alleged mechanical defects or other defects which may affect the safe operation of a public school bus or school transportation service vehicle resulting from an alleged negligent act of maintenance personnel or as a result of any alleged negligent act or omission of the driver, transportation safety assistant, or monitor of a public school bus or school transportation service vehicle when:*
>
> *(1) The driver is an employee of the county or city administrative unit of which that board is the governing body, and the driver is paid or authorized to be paid by that administrative unit,*
>
> *(1a) The monitor was appointed and acting in accordance with G.S. 115C 245(d),*
>
> *(1b) The transportation safety assistant was employed and acting in accordance with G.S. 115C 245(e), or*
>
> *(2) The driver is an unpaid school bus driver trainee under the supervision of an authorized employee of the Department of Transportation, Division of Motor Vehicles, or an authorized employee of that board or a county or city administrative unit thereof,*

30 DAY INSPECTION MANUAL

Introduction

This section of the manual has been developed for those engaged in school bus or activity bus inspection with the goal of inspection uniformity thereby increasing the likelihood that fewer buses will be operated in an unsafe condition. ~~(From this point forward, activity buses are referred to as school buses.)~~

A committee from a variety of Federal & State resources developed the regulations described herein. North Carolina General Statute 115C-248(a) states the following:

> *"The superintendent of each local school administrative unit shall cause each school bus owned or operated by such local school administrative unit to be inspected at least once each 30 days during the school year for technical defects or other defects which may affect the safe operation of such bus."*

This means that each school and activity bus being operated is required to have an inspection every 30 (calendar) days. Furthermore, in cases where a vehicle was not in operation and has not been inspected in the past 30 days, that bus must have a 30-day inspection completed prior to any students being transported on it. A computer database operated by the state schedules buses for inspection and causes them to appear 10 days before they exceed the required 30-day interval. This should give ~~Technicians'~~ inspectors ample time to conduct the inspection before they are in violation of N.C.G.S 115C-248(a). (From this point forward, activity buses are referred to as school buses.)

Effective August 1, 2011, LEAs shall require each 30-day inspection required under G.S. 115C-248 to be conducted by an individual who has completed the training and certification requirements administered by the Department of Public Instruction. (State Board of Education Policy TCS-H-011).

At any time a lone inspector is outside or underneath a bus, a lock out/tag out procedure must be used when inspecting or servicing a bus. A highly visible tag must be secured to or near the ignition key to prevent the bus from being operated while being serviced/ inspected. This procedure will also keep the bus from being operated if the bus inspector must leave the vehicle before the repair/inspection is completed.

The 30-day inspection is the backbone of the school bus Preventive Maintenance Program. If transportation personnel will thoroughly pursue the following description of a 30-day inspection, the procedures in the remaining preventive maintenance sections of this manual will be easier to perform on the entire transportation fleet.

Any questions, comments, or inquiries regarding this inspection manual shall be directed to the North Carolina Department of Public Instruction, Transportation Services Section. Phone # 919-807-3570

A copy of this manual must be present during each 30-day inspection.

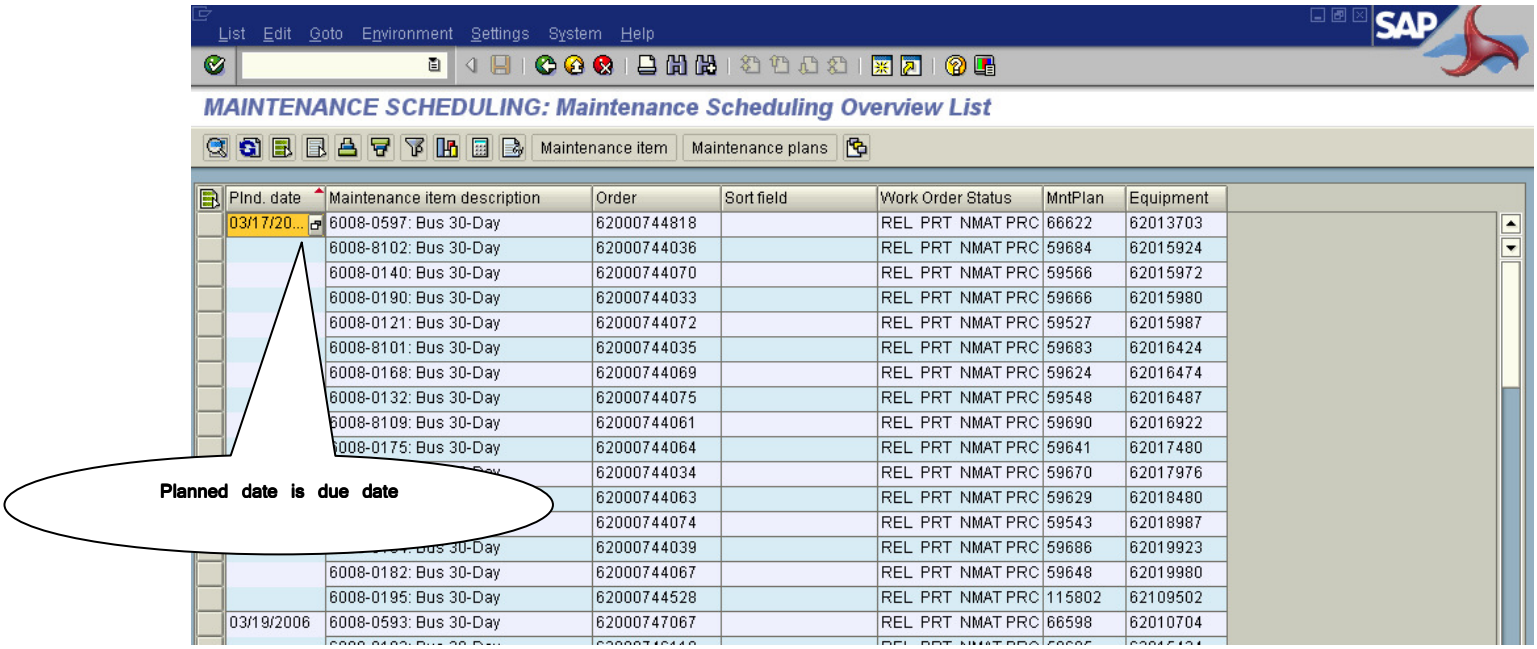
30-Day Inspection Scheduling

School bus inspections are scheduled through NCDOT's Bus Systems Information Portal (BSIP). Inspect buses as they appear on the ZIP24 Maintenance Scheduling screen. For each bus BSIP will generate a DP02, 30-day inspection, work order 10 days before its due date. That due date is determined by the reference date set when technically completing the previous 30-day inspection. On any assigned day of any month that buses are operated (weather permitting), a technician(s) designated by the foreman or director, will inspect all items listed on the BSIP work order.

To complete the 30-day inspection, the ~~technician~~inspector, will completely inspect and road test each bus due a 30-day inspection. All defects should be recorded on the BSIP work order and scheduled for repairs as soon as possible. If two or more ~~technicians~~ inspectors are performing an inspection, each ~~technician~~ inspector shall initial, on the work order, the items inspected by them personally. (An individual assisting in an inspection – e.g. operating lights, steering and brakes for the inspector – does not have to initial the form.) **Any defects that would place the bus out of service should be repaired ~~the same day~~before the vehicle is operated again which may mean that ~~or~~ a spare ~~should~~ must be called to take its place.**

On all buses equipped with air brakes, the travel of the air chamber push rods (front and rear) shall be measured at this time, recorded on the work order, and ~~adjusted~~ noted to replace slack adjusters if needed per manufacturer's specifications listed in the Brake section on page 47~~46~~.

A sample ZIP24 maintenance scheduling screen is shown below. It is important to note that the "Planned Date" field on this screen, and at the top of the actual BSIP 30-day inspection document, indicates the day that the inspection is due. Once the inspection is completed and entered into BSIP the NEXT inspection will be due (Planned Date) 30 days after the reference date that was set.



Plnd. date	Maintenance item description	Order	Sort field	Work Order Status	MntPlan	Equipment
03/17/20...	6008-0597: Bus 30-Day	62000744818		REL PRT NMAT PRC	66622	62013703
	6008-8102: Bus 30-Day	62000744036		REL PRT NMAT PRC	59684	62015924
	6008-0140: Bus 30-Day	62000744070		REL PRT NMAT PRC	59566	62015972
	6008-0190: Bus 30-Day	62000744033		REL PRT NMAT PRC	59666	62015980
	6008-0121: Bus 30-Day	62000744072		REL PRT NMAT PRC	59527	62015987
	6008-8101: Bus 30-Day	62000744035		REL PRT NMAT PRC	59683	62016424
	6008-0168: Bus 30-Day	62000744069		REL PRT NMAT PRC	59624	62016474
	6008-0132: Bus 30-Day	62000744075		REL PRT NMAT PRC	59548	62016487
	6008-8109: Bus 30-Day	62000744061		REL PRT NMAT PRC	59690	62016922
	6008-0175: Bus 30-Day	62000744064		REL PRT NMAT PRC	59641	62017480
		62000744034		REL PRT NMAT PRC	59670	62017976
		62000744063		REL PRT NMAT PRC	59629	62018480
		62000744074		REL PRT NMAT PRC	59543	62018987
	30-Day	62000744039		REL PRT NMAT PRC	59686	62019923
	6008-0182: Bus 30-Day	62000744067		REL PRT NMAT PRC	59648	62019980
	6008-0195: Bus 30-Day	62000744528		REL PRT NMAT PRC	115802	62109502
03/19/2006	6008-0593: Bus 30-Day	62000747067		REL PRT NMAT PRC	66598	62010704

30-Day Inspection Processes

This section is designed to describe the necessary processes surrounding the 30-day inspection that must be followed. It covers paperwork/business processes while leaving the technical aspects to the discretion of the ~~technician~~inspector. ~~A suggested technical flow for performing the 30-day inspection is shown in APPENDIX A.~~

The ~~technician~~inspector should receive (or print out) the DP02 work order from BSIP. That sheet will contain information about the vehicle, the work order number, and the date that the 30-day inspection is due.

While progressing through the 30-day inspection, the ~~technician~~inspector should write any defects on the work order sheet. If two or more ~~technician~~inspectors are performing an inspection, each ~~technician~~inspector must initial on the work order beside any items inspected by them personally. The work order should be signed at the bottom by all associated ~~technician~~inspectors and dated with the date the inspection was completed. An assistant operating lights, brakes, etc from the driver's seat need not sign the work order.

The ~~technician~~inspector should complete the entire inspection before ~~making~~ any repairs are made. Depending on whether repairs are assigned to the inspector/technician or to another techinician, appropriate documentation of defects must be translated to repair documents.

Any repairs that do not require that the bus be taken out of service, "minor repairs", that can be repaired with the equipment available may be repaired in the field. Any parts (including fluids) and labor time associated with this field repair should be noted on a TD-18 form created for that vehicle. Once the repair is completed the technician should indicate that the defect was repaired on the DP02 work order.

Minor repairs for which parts are not available but that may be repaired in the field on a subsequent trip, shall be noted in the remarks section of the work order. The ~~technician~~inspector should fill out a TD-18 immediately, or request a DP01 repair work order upon return to the shop. ~~The~~ A technician should also secure the necessary parts to be able to complete the field repair on a future trip.

Minor repairs which cannot be repaired in the field should be noted in the remarks section of the work order and a TD-18 or DP01 work order created and printed. ~~This work should be performed the next time the vehicle is at the garage for any service (such as preventative maintenance).~~

Any problems found during the inspection which would require that the bus be taken out of service, "essential repairs", that can be repaired with available parts and equipment should be repaired ~~immediately~~ promptly following the inspection of that bus – before the bus is used to transport students. Any parts (including fluids) and labor time should be noted on a TD-18 form created for that vehicle. Once repaired, the technician should indicate the defect was repaired on the DP02 work order.

If ~~the~~ a technician is unable to complete all essential repairs before the bus will transport students again, a spare should be called in for that bus. No bus may be operated to transport students with an out of service condition present.

If an essential repair can be completed in the field at a later time, ~~the~~ a technician should make note of it on the work order and fill out a TD-18 immediately, or request a new DP01 repair work order upon return to the shop. The vehicle should be repaired as soon as possible and returned to regular service.

Essential repairs which must be repaired at the garage should be noted on the 30-day inspection work order and a TD-18 or DP01 created. This repair should be worked into the schedule at the garage ~~as time permits~~ so that the vehicle may be returned to regular service.

The paperwork, including TD-18s, should be returned to the ~~technician's~~ inspector's supervisor upon return to the garage. The supervisor should look over the paperwork and create and print the necessary DP01 work orders (if TD-18s were not created). The supervisor should then sign the work order and return it to person responsible for entering the data into BSIP.

The work order should be entered into BSIP in a timely manner, and technically completed on the IW-32 screen. **The reference date MUST be set to the date the technician indicated the 30-day inspection was completed.** The DP02 work order should then be filed in the Individual Vehicle Inspection file. Any completed TD-18s should be entered into BSIP, and also filed appropriately.

Message to ~~Technicians~~Inspectors

This section of the manual has been prepared by a statewide committee as a guideline for the proper inspection of school buses. It includes federal and state regulations and procedures identified in previous editions of this manual and others identified by the committee. These regulations and procedures are designed to provide the safest transportation possible for the precious cargo being transported by North Carolina school districts. Any deviation from these regulations and procedures could result in the injury or death of our children. The Transportation Department plays a vital role in the education and development of North Carolina's school children. By maintaining a safe school bus, the bus technician helps provide a means for a child to get to school and obtain an education.

The 30-day inspection is for the purpose of detecting any and all items which have failed, or could reasonably be expected to fail, before the next regularly scheduled monthly inspection. This publication attempts to cover a majority of the items that are required to be inspected and serviced on school buses for the 30-day inspection. Due to evolving specifications and make-up of schools buses, it would be virtually impossible to include every single item that could malfunction. *When a problem is encountered that is not covered in this manual, the safety of the bus driver, passengers and motoring public should always be the most important factor considered.* It will be up to the ~~technician doing the inspection~~inspector, in consultation with the shop foreman or transportation director, to make the decision whether the bus should be allowed to stay in service or be replaced by a spare until repairs are made.

It is highly recommended that a certified inspector and an assistant inspect a school bus. The assistant will aid from the driver seat. The certified inspector will be outside of the bus to verify the different systems are functioning properly and provide documentation on the DP02 TD-30 (inspection form). The assistant may be any person – not necessarily certified - who can help the inspector check steering, brakes, and lights and need not be present for the entire inspection~~It is highly recommended that a technician and an assistant inspect a school bus. One person will assist in various light checks, braking checks and steering checks from the driver seat. The technician will be outside of the bus to verify that the different systems are working properly.~~

At any time a lone inspector is outside or underneath a bus, a lock out/tag out procedure must be used when inspecting or servicing a bus. A highly visible tag must be secured to or near the ignition key to prevent the bus from being operated while being serviced/ inspected. This procedure will also keep the bus from being operated if the bus inspector must leave the vehicle before the repair/inspection is completed.

The inspection and repair of a school bus ~~is to be broken down into two~~are two separate steps, which may or may not be conducted by two separate individuals.

1. The bus must be properly inspected for defects. This process should not be interrupted once an inspection has begun. The inspectors must carefully check all the items listed on the work order.

If a defect is found, the problem must be noted at the proper place on the form. **No repairs shall be made until the inspection process is completed.**

2. After completing the inspection, the an inspector/technician~~s~~ or other assigned technician should review the defects found and repair them. A TD-18 shall be filled out to indicate repairs made. If it becomes apparent that a bus with an out-of- service defect cannot be repaired before it is to be dispatched on the next route, a spare vehicle must be secured.

The ~~technician~~ inspector should review this manual often in order to achieve the best possible results.

A detailed description of out-of-service criteria for 30-day inspections is contained in APPENDIX B~~APPENDIX B~~ of this document.

A copy of this manual must be present during each 30-day inspection.

30-Day Manual Revision Committee Members

The preparation of this section of the manual was a cooperative effort between the North Carolina Pupil Transportation Association (NCPTA) and the North Carolina Department of Public Instruction (NCDPI), Transportation Services Section. The committee would like thank those around the state the provided input and feedback during the preparation of this manual.

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Inspection Procedures	Repair (or note) If:	Out of Service if:
Drag Link		
Check the drag link ends, shaft, and fasteners for looseness and condition (on vehicles with I-beam suspension).	Any drag link end grease fitting (as equipped) is loose, or missing, or will not take grease. Drag link end boot is damaged or missing. Drag link needs lubrication. Drag link end if less than 1/8 inch Drag link dust boot (as originally equipped) is cut, damaged, or missing.	Drag link ball stud is loose in pitman arm or upper steering arm. Any nut is loose or missing, or cotter pin is missing. Drag link shaft is damaged or bent. Drag link end (non-adjustable type) has 1/~~16~~8 inch or more axial (not rotational) play. Horizontal socket type (adjustable) drag link end has 1/~~16~~8 inch or more axial or lateral play.
Steering Arm		
1) Check upper steering arm (Ackerman arm) and left and right side lower steering arms for securement and condition 2) Check condition and securement of steering stops and lock nuts.		Any steering arm has been bent, is cracked, or is damaged. Any steering arm attachment point is loose, or any fasteners, or cotter pin is missing. Either steering stop or lock is loose, damaged, or missing.
Tie Rod and Ends		
Check the tie rod ends, tie rod, dust boots, and clamps or fasteners (as equipped) for looseness, damage, and condition.	Tie rod end dust boot is cut, damaged, or missing. Tie rod end needs lubrication. Any tie rod end grease fitting is loose, missing, or will not take grease.	Tie rod clamps, fasteners, or cotter pin is stripped, missing, or loose. Any clamp (as equipped) is out of position. Any tie rod end is cracked or damaged. Any tie rod end has more than 1/~~16~~8 inch or more axial play. Tie rod end ball stud is loose in steering arm or idler arm.
Idler Arm		
Check idler arm assembly (as equipped) for looseness, damage, and condition.	Idler arm needs lubrication. Idler arm grease fitting is loose, missing or will not take grease.	Any idler arm fasteners are loose or missing. Idler arm is cracked, damaged, or cotter pin is missing. Idler arm up and down play is greater than 1/4 inch total (1/8 inch either direction).

Outside Bus Battery Check

1. Hold down – Check for tightness, condition, and type of battery hold down. Make repairs as soon as possible if battery hold down assembly or tray is loose, corroded, or damaged causing insecure mounting of battery.

2. Battery Terminals – Check terminals for cleanliness, tightness, and condition. Make repairs as soon as possible if terminals are loose, damaged, corroded, or have missing hardware.

3. Battery Cables – Check cable assemblies for routing, securement, condition, and size. Make repairs if the following conditions exist: cable or insulation is cracked, damaged, or corroded;

cable is misrouted, unsecured, or grommet is missing; cable is routed against the exhaust or any other extremely hot surface and, cable is smaller than original equipment size.

The vehicle shall be removed from service until repairs are made if:

- **any cable/wiring or connector is cut or severely chafed or**
- **wire/conductor is exposed to or routed against a sharp edge.**

4. Cleanliness – Check cleanliness of batteries. Repair if battery top or sides are corroded, greasy, dirty, or wet with electrolyte. If battery is cracked or damaged it shall be replaced before operating.

5. Tray – Check battery tray for operation, condition, and securement. Make repairs if the following conditions exist: battery slide tray is corroded, dirty, or hard to slide in and out; battery slide tray securement device or tray stop is missing or nonfunctional; battery tray does not slide in and out; battery slide tray or box is damaged or deteriorated reducing security of batteries; battery box door does not open or will not stay latched.

The vehicle shall be removed from service until repairs are made if:

- Battery securement device or tray is not locked in place.

Engine Compartment

Fluid Levels

1. Brake Fluid – Check fluid level and condition. Make repairs if any of the following conditions exist:
   - Level of brake fluid in either side of master cylinder reservoir is lower than ¼ inch from top or below "Add" mark (if equipped)
   - Brake fluid shows evidence of excessive water, oil, or dirt contamination. If fluid is low, an inspection shall be made.

   The vehicle shall be removed from service until repairs are made if any evidence of a fresh leak is detected or fluid is excessively low (less than ¼ full).

2. Power Steering Fluid /Hydraulic Brake Assist Fluid – Check the power steering reservoir fluid levels and condition. Make repairs if power steering fluid is below cold "Add" mark or if power steering fluid shows evidence of excessive water, oil, or dirt contamination.
   The vehicle shall be removed from service until repairs are made if fluid is excessively low (less than ¼ full).

3. Oil – Check the level and condition of oil. Repair if engine oil is below "Add" mark.

The vehicle shall be removed from service until repairs are made if:

- No oil is observed on dipstick, or
- There is evidence of fuel or water contamination in the oil., or
- If the dipstick is missing.

~~**The vehicle shall be removed from service until repairs are made if no oil is observed on dipstick or evidence of fuel or water contamination in the oil.**~~

4. Transmission Fluid – Check the level and condition of transmission fluid. Make repairs if any of the following conditions exist:
   - Transmission fluid is below "Add" mark
   - Transmission fluid shows evidence of excessive water or dirt contamination
   - Transmission fluid shows need of servicing (discoloration and/or burnt smell).

   The vehicle shall be removed from service until repairs are made if:

   - The transmission fluid is not present on dipstick, or is above the full mark (overfilled), or
   - If the dipstick is missing.

   ~~The vehicle shall be removed from service until repairs are made if the transmission fluid is not present on dipstick or is above the full mark (overfilled).~~

5. Windshield Washer Fluid – Check windshield washer fluid level. Make repairs if the reservoir is low or the windshield washer does not spray windshield.

6. Coolant – Check coolant (antifreeze) level and condition. Make repairs if any of the following conditions exist:
   - Coolant level in radiator or reservoir is low
   - Coolant shows evidence of excessive oil, dirt, contamination, rust and corrosion.

   The vehicle shall be taken out of service until repairs are made if coolant cannot be seen in reservoir or in radiator tank with cap removed.

Belts

1. Tightness – Visually and physically check all drive belts for proper tension. If available, use a tension gauge. If a gauge is not available, use a ruler to measure the deflection of the belt (s) up and down at the widest point between the drive and driven pulley(s). Make repairs if any belt exceeds tension reading recommended by manufacturer, if a tension gauge is used. If ruler method is used, make repairs if any belt is less than ½ inch deflection (too tight) when firm pressure is applied.

   The vehicle shall be taken out of service until repairs are made if any of the following conditions exist:
   - Any belt tensioner that does not pivot or move freely and apply spring pressure on belt.
   - Any tension on belts that is too loose (based on specifications of type tension gauge used).
   - Tension of any belt (using ruler method) that is too loose when firm pressure is applied (greater than ¾ inch deflection).
   - Any slippage is detected.

2. Condition – Visually inspect belt(s) for glazing, oil contamination, dry rotting, cuts, and separation of plies. Check belts for twisting and distortion. Make repairs if any of the following conditions exist:
   - Belt is glazed
   - Belt is oil saturated, dry-rotted, cut, or plies of belt(s) are separated
   - Belt is distorted or twisted.

3. Routing – Visually inspect belt for rubbing or contact with objects other than pulleys and for routing around correct pulleys. Make repairs if any of the following conditions exist:
   - Belt is making contact with objects other than pulley or belt is routed around incorrect pulley.

4. Belt Alignment – Visually inspect belts for proper alignment. Make repairs if any belt is not inline or if any belt is misaligned that could result in failure.

Fan

Check fan blade and fan clutch assembly for securement and condition.
The vehicle shall be removed from service until repairs are made if:

- Fan has any cracked, bent, or broken blades
- Any portion of fan mounting is loose
- Fan clutch is seized or loose.

Alternator

1. Check securement and condition of alternator assembly. Make repairs if alternator is noisy.
The vehicle shall be placed out of service until repairs can be made if any portion of the alternator, mounting brackets or fastener is cracked, loose, or missing.

2. Routing and Condition Check routing, securement, and condition of all wiring and any electrical cable in the engine compartment. Make repairs if any of the following conditions exist:
   - Any loose, damaged, or corroded wiring connector or terminal end
   - Any repair has been made using improper gauge wiring.

The vehicle shall be taken out of service until repairs can be made if:

- There is any unsecured or poorly routed wiring that could cause a potential short or fire due to abrasion.
- Heat damage.
- Burnt wiring or wiring missing insulation (other than ground wires) is present.

Air Conditioning

Check mounting of A/C compressor. Observe routing, securement, and condition of all refrigerant lines and any electrical connections. Make repairs if any of the following conditions exist: any loose or damaged lines; A/C dryer sight glass indicates "wet". Check condition of belts and idlers; make repairs if loose or worn.

Fuel System and Lines

Visually check the condition, operation, and securement of all fuel system components including fuel lines and routing in the engine compartment. Make repairs if any of the following conditions exist:

- Evidence of dirt, algae, or water in the fuel water separator (if equipped)
- Any unsecured, poorly routed, loose fuel line or hose that could cause potential fire due to abrasion or heat damage.

The vehicle shall be removed from service until repairs can be made if:

- ~~a~~**Any fuel system connection is stripped, loose, cracked, or leaking.**
- **Any fuel line or hose is unsecured or poorly routed such that it could cause potential fire.**

Radiator

1. Radiator Mounting – Check radiator assembly and mounting for securement and condition. Make repairs if any portion of the radiator or mounting system is cracked, damaged, loose or missing fasteners.

2. Cap – Check condition of radiator cap. Warning – always use proper procedures when removing radiator cap. Make repairs if any of the following conditions exist:

   - The radiator cap is hard to open or close
   - The radiator cap is the wrong pressure rating
   - Visible damage to the pressure seat or vacuum relief seat of the cap.

~~•Pinch bolt is stripped or missing so that spring pin cannot be clamped tightly.~~

The vehicle shall be taken out of service until repairs can be made if:

- Any front spring shackle or hanger is loose, cracked, broken.
- Front spring mount-to-frame fastener is loose, missing, broken, cracked.
- Frame is cracked at any spring mounting location.
- Pinch bolt is stripped or missing so that spring pin cannot be clamped tightly.

5. Pins and Bushings – Inspect pins and bushings as follows: Inspect front spring pins and bushings for wear, lubrication and securement.
   The vehicle shall be removed from service until repairs can be made if wear exceeds ¼ inch or bushing is missing .

6. A-Frames and Bushings – Inspect A-frames and bushings for condition and securement. Make repairs if rubber-bushing is split, badly deteriorated or badly extruded from suspension joints;
   The vehicle shall be taken out of service until repairs are made if:
   - A-frame assembly is bent, missing or broken;
   - Fasteners/u-bolts are loose or missing;
   - Mounting of bushing assembly is not secure.
   - Rubber bushing is missing.
   - A-frame, bushing or pivot arm has more than .050 free play at pivot point.

7. Ball Joints – Inspect ball joints for condition, securement, and lubrication. Make repairs if any of the following conditions exist:
   - Zerk (grease) fitting is missing, damaged or ball joint will not take lubrication
   - Any ball joint has more than 3/32-inch axial play.

   The vehicle shall be taken out of service until repairs are made if the following conditions exist:
   - Ball joint mounting is loose or missing
   - Cotter pin is missing.
   - Ball joint to A-frame mounting is cracked, loose or has been welded.

8. U-Bolts – Inspect spring U-bolts for condition and securement. Make repairs if U-bolt is misaligned or rust underneath any U-bolt nuts indicates the possibility of looseness.
   The vehicle shall be taken out of service until repairs are made if any shock mount bracket, U-bolt, seating plate or nut is loose, missing, cracked or stripped.

9. Shocks – Inspect shocks for condition and securement. Make repairs if there is wetness around shock body due to leaking shock fluid or any shock mounting or fastener is loose.
   The bus shall be removed from service until repairs can be made if any shock is broken or missing.

10. Springs – Inspect front springs for condition, securement, and alignment. Make repairs if any of the following conditions exist:
    - Loose, missing, broken or worn spring clips
    - Coil or leaf spring has flattened, and ride height is less than manufacturer's specifications
    - Rubber bumper is missing.

    The vehicle shall be taken out of service until repairs are made if:
    - Either front spring saddle is missing (if equipped).
    - Any leaf spring is broken, cracked or missing.
    - Spring eye is worn or spread such that bushings are loose in spring eye.
    - Coil spring is broken or insecurely mounted.
    - Non-OEM blocks or spacers are installed.
    - There is misalignment of spring leaves or other evidence that center pin is loose or broken.

- Either front coil or leaf spring is worn so that the rubber frame bumper is damaged or worn due to frequent bottoming of front suspension.
- Alignment wedge is loose or damaged.
- Air bag type spring assembly is damaged/leaking.

11. Wheel Seals – Check for condition and leakage. Make repairs if either front wheel seal is damaged or leaking.
Remove bus from service until repairs can be made if evidence of fresh oil is found on the brake linings, drums or rotors.

BRAKES

~~**Front Brakes**~~

1. Brake Hoses – Inspect ~~front~~ brake flexible hoses for condition, securement, and routing. Make repairs if any of the following conditions exist:
   - Any front brake flex hose supporting brackets are damaged or have loose fasteners
   - Any front brake flex hose is rubbing or routed against other components.

   The vehicle shall be taken out of service until repairs can be made if;
   - Any ~~front~~ brake hose or connection is leaking fluid or air pressure.
   - Any ~~front~~ brake hose is kinked, collapsed or bulging,
   - Any ~~front~~ brake hose has damaged plies, cords or is damaged below outer covering.

2. Lines – Inspect air and hydraulic brake lines for routing, securement and condition. Make repairs if any of the following conditions exist:
   - Brake line bracket or securement system is loose or missing
   - Brake line is rubbing on other components or abraded
   - Brake line is not of OEM material, size or type
   -

   The vehicle shall be taken out of service until repairs are made if;
   - **brake line is crimped or damaged significantly and restricting air pressure or hydraulic fluid;**
   - **B~~b~~rake line or connection is leaking air pressure or hydraulic fluid**.

3. Chambers – Inspect ~~front~~ brake chamber assembly for securement, condition, and proper size. Make repairs if front ~~brake~~ chamber or mounting fastener is damaged/loose.

4.

   The vehicle shall be taken out of service until repairs can be made if:
   - ~~Front b~~Brake chamber-mounting bracket is cracked, bent or broken.
   - If either chamber is not of the original size.
   - Size of chambers is not matched left and right (both sides must be the same size).
   - Non-manufactured holes are found in the spring brake housing.

~~4.~~5. Slacks – **IF AUTOMATIC SLACK IS OUT OF ADJUSTMENT—DO NOT ADJUST, MUST BE REPAIRED OR REPLACED** Inspect slack adjusters and S-cam assemblies for wear, condition, operation, and securement. Make repairs if any of the following conditions exist:
   - Slack adjuster mounted so that adjuster bolt is facing chamber
   - S-cam shaft and S-cam bushing total wear (up and down) is greater that .040”
   - S-cam in and out endplay is more than .060”
   - Slack adjuster is dirty and prevents the lock sleeve from seating and the technician from inspecting for cracks.

   The vehicle shall be taken out of service until repairs are made if:
   - Any portion of the slack adjuster or S-cam is missing, broken, cracked, or badly worn.
   - S-cam snap ring is missing.

- Verify Air Pressure is bBetween 90-100 PSI.
- Mark All Push Rods with Chalk
- Fully Apply Brake
- Measure the Distance the Push Rod Travels at Each Chamber
- Record Push Rod Travel
- Compare Measurement to the Brake Chamber chart in this manual.

c. If adjustment is needed, wheels must be raised off of the ground.

The vehicle shall be removed from service until repairs are made if there is any damage or condition that prevents proper adjustment of S-cam or air disc type brakes.

d. Automatic slack adjusters- **DO NOT ADJUST BRAKES ON VEHICLES WITH AUTOMATIC SLACK ADJUSTERS. SLACK ADJUSTORS MUST BE REPLACED OR REPAIRED IF BRAKE ADJUSTMENT LIMIT EXCEEDS MAXIMUM ADJUSTMENT LIMITS, Refer to page 8. IF LIMIT IS EXCEEDED, SELF-ADJUSTING MECHANISM NEEDS TO BE REPAIRED OR REPLACED.** Follow slack adjuster manufacturer's adjustment procedure when replacing slacks.~~Do not adjust brakes on vehicles with automatic slack adjusters unless the brake adjustment limit exceeds maximum adjustment limits. Compare Measurement to the Brake Chamber chart in this manual. If limit is exceeded, self-adjusting mechanism needs to be repaired or replaced. Follow slack adjuster manufacturer's adjustment procedure when adjustments must be made.~~

e. AUTOMATIC SLACKS MUST BE CHECKED EVERY 30 DAYS; PUSHROD TRAVEL MUST BE MEASURED AND RECORDED ON THE TD-30.

Procedure:

- Chock Tires
- Release all Brakes
- Verify Air Pressure is Between 90-100 PSI.
- Mark All Push Rods ~~with Chalk~~
- Fully Apply Brake
- Measure the Distance the Push Rod Travels at Each Chamber
- Record Push Rod Travel
- Compare Measurement to the Brake Chamber chart in this manual.

The vehicle shall be removed from service until repairs can be made if

- **any automatic slack adjuster arm or mechanism is damaged or loose.**

f) Manual Tank Drain/Electronic Drain Valve System - With air system fully charged, check manual operation of safety relief valve. Partially open manual petcock valve on the first (wet) tank. Allow tank to drain until all moisture and contamination are drained. Make repairs if there is moisture in reservoir (desiccant type air dryer equipped vehicles only). Repair if excessive oil is found in air system. (If equipped with Electronic brake drain system, make repairs if drain system is not functioning as designed.)

The vehicle shall be taken out of service until repairs are made if:

- **Safety valve leaks or does not release pressure, or**

- Excessive sludge or oil contamination in the reservoir (more than eight (8) fluid ounces)
- Reservoir is cracked or leaks due to corrosion.

Engine / Transmission Mounts / Starter Mounting

1. Engine/Transmission Mounts – Inspect engine and transmission mounts for condition and securement. Repairs shall be made if the following conditions exist:
   - Mounting fasteners are loose, missing, or broken
   - Any mount is cracked or has deteriorated rubber.

2. Starter Mounting – Inspect starter for securement and condition. Check for presence of heat shield (if equipped). Make repairs if any of the following conditions exist:
   - Loose heat shield
   - Starter mounting bolts, studs or nuts are loose, damaged, missing, or broken
   - Loose or damaged starter
   - Missing heat shield (if equipped).

Transmission Checks

1. Transmission Bolts – Inspect transmission assembly and mounting fasteners for condition and securement. Make repairs if any transmission assembly fastener is loose, missing, or damaged. The vehicle shall be taken out of service until repairs are made if:
   - Transmission is not mounted securely to flywheel housing
   - External indication that any torque converter bolt is loose or missing.

2. Linkage – Inspect transmission linkage for routing, condition, and securement. Make repairs if any of the following conditions exist:
   - Modulator cable or vacuum hose routed where it is subject to excessive heat or abrasion
   - Linkage hardware or fasteners are loose
   - Exposed modulator cable or damaged casing
   - Deteriorated or loose modulator vacuum hose.

   The vehicle shall be taken out of service until repairs are made if:

   - Linkage is bent, damaged, binding or severely misadjusted.
   - Linkage hardware or fasteners are missing.
   - Linkage is damaged so as to cause it to stick or bind.
   - Modulator vacuum hose is leaking or not connected.

3. Lines – Inspect transmission lines for securement, routing, and condition. Make repairs if any of the following conditions exist:
   1. • Transmission line unsecured or routed subject to excessive heat or abrasion
   2. • Transmission line crimped; transmission line of improper type
   3. • Transmission line is worn or deteriorated to the point that failure could occur.

4. Auxiliary Filter – Inspect transmission external filter assembly (if equipped) for securement and condition. Make repairs if external filter mounting is loose or missing fasteners or filter canister is damaged.
   The vehicle shall be taken out of service until repairs are made if the body of the transmission filter housing, including all hose connections, are cracked or damaged.

- Front spring hanger has significant side wear at the spring eye
- Front spring hanger is worn, pinch bolt is stripped or missing so that spring pin cannot be clamped tightly
- Any hanger is found with a small crack (1/2 inch or less) that are welded (steel only).

The vehicle shall be taken out of service until repairs are made if:

~~3.~~• Front spring shackle/hanger is loose, cracked or broken.
~~4.~~• Front spring mount-to-frame fastener is loose, missing, broken or cracked.
~~5.~~• The frame is cracked at any spring mounting location.
~~6.~~• Spring hanger or bracket is cracked or broken (1/2 inch or more).
~~7.~~• Any mounting fastener is loose or missing.

10. Seals – Inspect rear wheel seals for condition and leakage. Make repairs if there is wetness or dripping of grease around axle flange, axle flange stud or nut is loose or missing.
The vehicle shall be taken out of service until repairs are made if evidence of fresh oil is found on the brake linings or drums/rotors.

11. Wheel Bearings – Inspect rear wheel bearings for condition and proper adjustment.
    - Raise the rear wheels (wheels unloaded) and release park brake.
    - Grasp tire and attempt to rock wheel assembly to check for movement.

The vehicle shall be taken out of service if there is any detectable looseness or roughness in rear wheel bearings.

~~**Rear Brake**~~

~~3.Hoses – Inspect rear brake flexible hoses for condition, securement, and routing. Make repairs if rear brake hose-supporting bracket is damaged, has loose fasteners, or rear brake hose is rubbing or routed against other components.~~

~~**The vehicle shall be taken out of service until repairs are made if:**~~

~~•Rear brake hose or connection is leaking fluid or air pressure.~~
~~•Rear brake hose is kinked, collapsed or bulging.~~
~~•Has damaged plies or cord.~~
~~•Any damage below outer covering.~~

~~4.Lines – Inspect air and hydraulic brake lines for routing, securement, and condition. Make repairs if any of the following conditions exist:~~

~~•Brake line or securement system is loose/missing~~
~~•Brake line is rubbing on other components or is frayed/worn.~~

~~**The vehicle shall be taken out of service until repairs are made if:**~~

~~•Brake line is bent, crimped/damaged significantly restricting air pressure or hydraulic fluid.~~
~~•Brake line or connection is leaking air pressure or hydraulic fluid.~~
~~•Any brake line is not of proper size or type.~~

~~8.Chambers – Inspect rear brake chamber assembly for securement, condition, and proper size. Make repairs if rear brake chamber or mounting fastener is damaged or loose.~~

~~**The vehicle shall be taken out of service until repairs are made if:**~~

~~•Rear brake chamber mounting bracket is cracked, bent or broken.~~
~~•Either chamber is not original size.~~
~~•Chamber is not matched (both sides to be same size).~~

~~4.Slacks – Inspect slack adjusters and S-cam assemblies for wear, condition, operation, and securement. Make repairs if any of the following conditions exist:~~

~~•Slack adjuster is dirty and prevents technician from inspecting for cracks or prevents the lock sleeve from seating~~

- Slack adjuster is mounted so that adjuster bolt is facing chamber (older model Chevrolet and Ford manual slacks)
- S-cam shaft and/or S-cam bushing total wear (up and down) is greater than .040"
- S-cam in and out endplay is more than .060".

The vehicle shall be taken out of service until repairs are made if:

- Any portion of slack adjuster or S-cam is missing, broken, cracked, or badly worn.
- S-cam snap ring is missing.
- Slack adjuster has frozen or stripped worm gear or ratchet assembly.

5.Pushrods – Inspect pushrod assembly for condition, securement, and alignment. Make repairs if pushrod is rubbing against body of chamber or chamber is misaligned.

The vehicle shall be taken out of service until repairs are made if:

7.Any portion of pushrod assembly (locknut, pushrod, clevis and pin or cotter pin) is loose, missing, or damaged.

8.Pushrod on left and right sides are not mounted in identical (same) slack adjuster location holes (same effective slack adjuster length).

5.Linings – Inspect brake lining through inspection cover or hole. Make repairs if any of the following conditions exist:

- Friction surface is contaminated with oil, grease, or brake fluid; lining is worn to within 1/8 inch of shoe table (riveted type shoe)
- Lining is worn to within 1/16 inch of shoe table (bonded type lining).

The vehicle shall be taken out of service until repairs are made if:

9. Lining is broken, cracked, or loose on shoe.

10.Shoe platform or webbing is cracked or damaged.

11.Any loose, damaged or missing foundation brake hardware is within the drums.

- Drums– Inspect rear brake drum for condition.

The vehicle shall be taken out of service until repairs are made if:

- Grease, oil or brake fluid is on the inside of the drum
- Drum is not mounted securely to hub or fasteners are loose.

- Rotors – Inspect rear brake rotor for mounting and condition.

The vehicle shall be taken out of service until repairs are made if:

1.Rotor mounting is not secure.

2.Friction surface is contaminated with oil, grease, or brake fluid.

3.Rotor friction surface is significantly grooved or damaged.

12.Wheel Cylinders or Calipers – Inspect wheel cylinder or caliper for leaks and mounting, and condition. Make repairs if there is uneven brake lining or brake pad wear wheel cylinder

The vehicle shall be taken out of service until repairs are made if:

- Caliper is not securely mounted or has loose or missing fasteners.
- There is rotor or drum damage.
- Evidence that any wheel cylinder/caliper may be sticking.

Brake Adjustment

a.Manual Slack Adjuster or air disc brakes must be checked at every monthly inspection. Brake chamber pushrod travel must be checked at all four wheel positions and if travel is out of specification (see Air Brake Chamber Stroke Measurements on page 8), brakes must be adjusted to achieve minimum pushrod travel.

The vehicle shall be taken out of service until repairs are made if:

- There is damage or condition that prevents proper adjustment of S-cam or air disc type brakes
- Any brake adjustment is out of specification – .

~~b.Automatic Slack Adjusters (ASA) must be checked as follows: Check the pushrod travel before any adjustment is made. If needed, manually adjust the ASA following the manufacturers adjustment procedures. (NOTE: If an automatic slack adjuster is out of adjustment, check/inspect the ASA for a malfunction and make repairs).~~

~~**The vehicle shall be removed from service until repairs are made if: any automatic slack adjuster arm or mechanism is damaged or loose; adjusted stroke (pushrod travel) of any automatic slack adjuster equipped brake exceeds maximum shown in charts on page 46**~~.

Body Securements and Structure

1. Body Hold-Downs – Inspect for securement and condition of all body hold-downs, chassis cowl mounts and frame pads. Body hold-downs include any J-bolt, U-bolt, or clamp type hold-down used to secure body to chassis frame. Make repairs if any of the following conditions exist:
   - Body hold- down is loose or misaligned, cracks or stripped fasteners at floor sill securement points
   - Padding between frame rails and floor sills is missing or grossly misaligned.

   The vehicle shall be taken out of service until repairs are made if:
   - ~~1.~~ Originally installed body hold-down or cowl mount is missing.
   - ~~2.~~ Three or more body hold-downs are loose, misaligned or have missing hardware.
   - ~~3.~~ Three or more body hold-downs have cracks or stripped nuts at floor sill securement point.

2. Floor – Inspect condition of floor structure, sills, and braces. Make repairs if there are any minor cracks in floor sills, braces or welds.
   The vehicle shall be taken out of service until repairs are made if:
   - Holes or cracks in floor sheet metal create an opening to the passenger compartment.
   - Entire cross-section of any floor sill or brace is broken.
   - Any broken weld or mounting of a floor sill/brace resulting in complete separation more than one (1) foot in length.
   - Any broken weld in the mounting of the bracing (K-member) at the front of the body floor (between step-well and driver's area).

3. Outriggers – Inspect body outriggers and hardware for condition and securement. Make repairs if any body outrigger is cracked, loose or missing hardware.
   The vehicle shall be taken out of service until repairs are made if the originally installed (as required by manufacturer) outrigger is missing.

4. Braces – Inspect for condition and securement of all chassis and body braces. Make repairs if there is a cracked brace underneath the body or bumper brace is broken, cracked, or missing.

5. Skirts – Inspect body skirts for securement and condition. Make repair if body skirt brace has cracked/broken sheet metal or mounting points.

6. Frame Rails – Inspect condition of chassis frame rails, cross-members, and all hardware attaching points. Make repairs if ONE bolt is missing from front cross member.
   The vehicle shall be taken out of service until repairs are made if:
   - There are cracks in either frame rail or cross-member
   - There are any loose, missing rivet or other fastener securing a cross-member to the frame
   - Missing more than one front cross-member bolt.

Exhaust System

1. Exhaust Leaks – With engine running and at operating temperature, inspect exhaust system for leaks, condition, and securement. Make repairs if exhaust junction gasket or hardware is broken/missing or if there is any physical damage to exhaust system.
The vehicle shall be taken out of service until repairs are made if:

    - **There is leakage which is audible or felt around any portion of the exhaust system including manifold, pipe sections or junctions.**

~~The vehicle shall be taken out of service until repairs are made if there is leakage, which is audible or felt around any portion of the exhaust system including manifold, pipe sections or junctions.~~

2. Mounting – Inspect mounting of the exhaust system. Make repairs if any of the following conditions exist
    - Exhaust system hanger not securely mounted
    - Loose exhaust pipe or clamp; clamp is missing
    - Originally installed exhaust hanger missing, broken or detached from the exhaust system/frame mounting point.
    - Exhaust system should be mounted at least 4 inches from non-metallic material (2008 and later year model)

3. Muffler – Inspect condition of the muffler. Make repairs if the muffler is cracked or if there is other significant physical damage to the muffler.
The vehicle shall be removed from service until repairs are made if the muffler is leaking and produces an audible sound or exhaust is felt from the leaking area (weep hole is excluded).

4. Tailpipe – Inspect the condition of tailpipe and insure that it extends beyond the rear bumper. Check the tailpipe and make sure it extends at least to the edge of the rear bumper, but no more than two inches beyond bumper or exits behind the rear tires to the left or right and extends to edge of bus body. Make repairs if the tailpipe is cracked or other significant damage to the tailpipe.
The vehicle shall be removed from service until repairs are made if
    - **the tailpipe is leaking and produces an audible sound ~~or~~**
    - **exhaust is felt from the leaking area, or**
    - **exhaust turn-down or diffuser missing (diffuser required for 2010 and new engines).~~.~~**

Wheels and Tires

1. Tread Depth – Inspect and measure all tires for tread depth and record on inspection form. Measurement shall be taken at the most worn groove of the tire. Measurement shall not be taken at a wear bar. Make repairs if front tire has reached 4/32 and rear tire has reached 2/32.
The vehicle shall be taken out of service until repairs are made if:
    - Tread depth of either front tire is less than 4/32-inch (2/32-inch for rear tires) at three points spaced equally around the circumference of the tire in the same major tread groove.
    - Measured tread depth of either front tire is 2/32-inch or less (1/32-inch for rear tires) measured at the most worn single point of the tire, except at wear bar.
    - Recapped tire has been re-grooved.
    - Front tire is a recapped or re-grooved tire.
    - There is evidence that any tire has been re-grooved using unapproved procedure.

2. Pressure – With tire cold, check pressures on all tires and record on inspection form. Make repairs if any of the following conditions exist:

~~7.~~• Pressure in tire is less than the maximum cold inflation pressure stated on the sidewall of the tire, minus 20%; pressure in tire is greater than 5% above maximum cold inflation pressure stated on sidewall of the tire. Adjust pressure if there are more than 20% differences in tire pressure on a particular axle.

The vehicle shall be taken out of service until repairs are made if:

- Any front tire has less than 70 lbs. of air pressure, or
- Any rear tires has less than 50 lbs.

3. Damage – Inspect for damage to wheels and tires. Make repairs if any of the following conditions exist:
   - ~~8.~~• Tire is mounted so it cannot be filled with air
   - ~~9.~~• Foreign material in the tire tread which could cause damage or loss of air pressure
   - ~~10.~~• Valve cap or extension is missing
   - ~~11.~~• Minor dents or bends in a rim.

   The vehicle shall be taken out of service until repairs are made if any of the following conditions exist:
   - Cuts, abrasion, or other damage to tire sidewall resulting in exposed or damaged cord.
   - Separation, bulges (other than normal manufacturer bulge) or other damage within the carcass of the tire.
   - Cracks that run around the bead or sidewall of the tire are present.
   - Retread tire that has any separation of the tire tread from the tire carcass that could result in tire or tread failure.
   - Valve stem is damaged.
   - Damage to the lock ring assembly or lock ring groove of a multi-piece rim, including rust or corrosion which could cause the lock ring not to seat fully.
   - Cracks or breaks at the lugholes or any other part of a rim or cast spokes.
   - Dents or bends in a rim that could result in failure of a rim or separation of the tire from the rim.

   NOTE: Weather cracking shall not be only cause for rejection.

4. Matching – Inspect for matching of tire construction, tire design, tire size, and load rating on each axle. Make repairs if there is mismatching of inner and outer dual tire diameter greater than 3/8 inch.

   The vehicle shall be taken out of service until repairs are made if any of the following conditions exist:
   - ~~1.~~• Any tire marked for other than highway use is found.
   - ~~2.~~• Tire is not of the proper type, size and minimum load rating.
   - ~~3.~~• Any tire on an axle that is not of the same type (e.g., lug or rib) and size.
   - ~~4.~~• Tire is below minimum load rating.
   - ~~5.~~• Radial and bias ply tires are intermixed on the same axle.

~~□~~5. Alignment – Inspect tires for evidence of proper alignment. Make repairs if tire is feather-edged, cupped, tread wear is uneven or if lateral run out of tire/rim assembly exceeds ¼ inch.

The vehicle shall be removed from service until repairs are made if tires/rim are grossly misaligned, affecting steering.

~~□~~6. Wheel Hardware – Inspect for presence, type, condition, and securement of all wheel hardware. Check for proper spacing of rear dual wheels and tires.

The vehicle shall be removed from service until repairs are made if any of the following conditions exist:
- ~~i.~~• Improper matching of rims and lock rings.
- ~~ii.~~• Evidence of slippage of wheel assembly on cast spoke hub.

~~11.~~ • Stud holes are elongated.
~~12.~~ • Any wheel or stud is loose, rusting or corrosion indicating possible looseness.
~~13.~~ • Wheel stud or nut is broken or missing.
~~14.~~ • Improper spacer has been installed between dual wheels.

~~3.~~7. Color and Condition – Paint color on wheel assemblies of North Carolina School Buses shall remain black. If color other than black is detected or if wheels are faded, repairs shall be made as soon as possible. (Exception will be made if OEM was equipped with gray wheels)

Inside Bus

Emergency Equipment

~~1.~~1. Fire Extinguisher – Check fire extinguisher for presence, correct pressure, inspection sticker, tag, inspection date, mounting and accessibility, proper UL (Underwriters Laboratory) rating, nozzle for looseness, damaged parts, presence of a safety pin and tamper proof seal. Make repairs if any of the following conditions exist:

- Loose bracket mount to panel
- Inspection tag will expire before next scheduled inspection
- Pressure is above or below the green zone
- Fire extinguisher is not accessible to driver or not secured in mounting bracket/box.

The vehicle shall be removed from service until repairs are made if any of the following conditions exist:

~~1.~~ • Rating is less than 2 ½ pound minimum (2002 and newer must have 5 lb. minimum and 10BC rating).
~~2.~~ • No fire extinguisher on bus.
~~3.~~ • Tamper proof seal material cannot be broken.
• Safety equipment storage box warning buzzer and/or ignition interlock disconnected or malfunctioning.
•

NOTE: Six years from the manufacturing date all type ABC, BC, or Halon fire extinguishers require a six year maintenance. They are also required to have a hydro-test twelve (12) years from the manufacturing date. To determine the manufacturing date, look for a stamped date on the bottom of the cylinder, on the label, or around the rim. These are required to meet National Fire Protection Association (NFPA) requirements in pamphlet #10 and OSHA requirements.

~~2.~~2. First Aid Kit – Check the box and condition. Check to insure that the box is labeled as First Aid Kit. Check the contents of the box for the following:

- 2 pkg. – 4-inch bandage compresses
- 2 pkg. – 2-inch bandage compresses
- 2 pkg. – 1-inch adhesive compress (16 per pkg.)
- 2 pkg. – 40-inch triangular bandage with two safety pins
- 2 sets – Plastic gloves (1 pair medium and 1 pair large)

Make repairs if partial contents are missing.
The vehicle shall be removed from service until repairs are made if entire contents or kit are missing.

3. Body Fluid Cleanup Kit – Check the container for condition. Check the contents of the box for the following.

- 1 – 2 oz. Package of T.I.L.S.C. powder sanitizes-deodorizes-encapsulates.

structure is broken or step-well is rusted through.

3. Handrails – Check for the presence and secure mounting of entrance handrails.
The vehicle shall be removed from service until repairs are made if:
    - Entrance handrail is missing or not securely mounted
    - Handrail fails the "NHTSA String and Nut Test" .

4. Paneling – Check all interior sidewall, rear, ceiling, and driver's area paneling for secure fastening, projections or sharp edges, and condition. Make repairs if any of the following conditions exist:
    - Unauthorized items affixed to the interior paneling of the bus, graffiti or unauthorized stickers (seating charts and safety information are approved) on interior panels
    - Loose or missing attachment screws on any maintenance access pane
    - Interior paneling is mildewed or paints (where required) is missing or damaged.

    The vehicle shall be removed from service until repairs are made if any of the following conditions exist:
    - sharp edges, rust-through, or projections from paneling that could cause injury to passengers or driver .

5. Loose Objects Secured – Check to insure that all objects within the bus are secure. Trashcans & brooms should not be touching the handrail area.
The vehicle shall be removed from service until repairs are made if there are any aerosol cans, containers with flammable/volatile chemicals or any unlabeled container located inside the bus.or
If objects near handrail/step well area cause failure of NHTSA string & nut test.

6. Dog House/Engine Cover – Inspect dog house/engine cover for seals, soundproofing, weather-stripping, prop-rod and latch operation. Make repairs if any of the following conditions exist:
    - Soundproofing not present or deteriorated
    - Latch is hard to operate or does not secure dog house/engine cover properly

    The vehicle shall be removed from service until repairs are made if seals or weather stripping allow air/fume leaks into the driver's compartment.

7. Entrance Door/Entrance Controls (Manual and air/electric) Inspect for presence of safety pad (above door), door bumpers and weather stripping around the door. Check air door release valve for leaks. Check to see that red~~amber~~ lights do not activate before door is opened. Make repairs if any of the following exist:
    - Manual door handle locks when in opened position,
    - Red~~amber~~ lights activate before door safety latch is released. (There should be no more than 3/16-inch play in safety latch when door handle is closed).

    If equipped with exterior front door lock system, inspect for function as designed by manufacturer. Make repairs if exterior front door lock does not operated as intended.

    The vehicle shall be removed from service until repairs are made if:

    - **Exterior front door lock can be locked from the outside without the use of a key.**

8. Child Reminder System-Check for proper operation as designed by manufacturer. Be sure operating instructions are legible. Make repairs if Child Reminder System does not function as designed per N.C. specification.

Windshield Wipers & Washers

1. Operation – Inspect both wipers for:
    - Swept area field of view and effectiveness of wiping
    - Proper operation of both wipers on high and low speeds
    - Condition/mounting of switches/knobs
    - Condition and mounting of wiper motors and linkage
    - Inspect for proper washer operation

Make repairs if any of the following conditions exist:

- Either wiper does not operate on low or high speed
- Wiper goes past edge of glass
- Washer does not operate or is misadjusted
- Blades do not effectively clear driver's field of vision
- Wiper motor or linkage is visibly damaged or loose
- Switch/knob mounting is loose or missing

The vehicle shall be removed from service untilrepairs are made if either wiper fails to operate.

2. Park – Inspect for parked position of wipers when turned off. Make repairs if wipers do not automatically return to parked position out of driver's line of sight when turned off.

3. Blades – Inspect blades for condition, mounting, and tension. Make repairs if blades do not clean windshield properly. Repair if either blade is damaged, deteriorated, loose, or does not hold proper tension against windshield.

Heaters, Defrosters, A/C & External Driver Fan

1. Heaters – Inspect heater system for:
    - Heating performance and water control valve
    - Blower operations, condition, and control switches
    - System leaks, condition, and hose shielding
    - Condition of ductwork and heater box
    - Condition of heater filter and clean if necessary

    Make repairs if any of the following conditions exist:
    - System is not producing adequate heat
    - Water control valve hard to operate
    - Heater blowers do not work on all speeds, are noisy or vibrate
    - Blower switches are damaged, loose or blower operates intermittently
    - Heater hoses are cracked, swollen, or badly chafed
    - Shielding missing or does not completely cover hoses.

    The vehicle shall be removed from service until repairs are made if any portion of heating system within the passenger area creates sharp edges, projections or other hazards to passengers.

2. Defrosters – Inspect windshield defroster system for:
    - Airflow, heat, and coverage area
    - Blower operations, condition, and control switches
    - Condition of ductwork, diffusers, and fresh air control (if equipped)

    The vehicle shall be removed from service until repairs are made if:

- **Defroster system does not function**

3. Air Conditioner Inspect A/C for:
   1. A/C performance for cooling
   2. Blower operations, condition, and control switches
   3. System leaks, condition, and hose shielding
   4. Condition of ductwork
   5. Check condition of evaporator filter and clean if necessary

   Make repairs if any of the following conditions exist:
   - Defroster blower does not work on low or high speed
   - Blower switches are damaged or loose
   - Ductwork or diffusers are loose or damaged
   - Fresh air control (if equipped) does not function
   - Airflow is not present at all defroster outlets.

4. External Driver Fan – Inspect driver fan for:
   - Presence of fan, mounting and condition
   - Blade condition
   - Protective cage mounting and condition
   - Operation and switch.

   Make repairs if any of the following conditions exist:
   - Fan mounting loose or fan will not stay in adjustment
   - Fan blade damaged
   - Switch loose
   - Fan non-operational

   The vehicle shall be removed from service if protective cage is missing, loose, or damaged.

Mirror Adjustments and Condition

1. Interior Rearview Mirror – Check interior rearview mirror for size, condition, and mounting. All interior mirrors shall be OEM design. Make repairs if any of the following conditions exist:
   1. Any portion of reflective surface is deteriorated
   2. Mirror mounting loose
   3. Stickers or other items obstruct any portion of the driver's view
   4. Driver's view of images not clear due to distortion or other causes

   The vehicle shall be removed from service until repairs are made if mirror is missing or will not hold a set adjustment.

2. Outside Rearview Mirrors – Check outside rearview mirrors for vision, condition and mounting. Check rearview mirrors to insure that the view provides the driver with a view along the left and right sides of the bus. Correct mirror adjustment will provide driver a view of rear tires at ground level and a minimum of two hundred feet to the rear of the bus. It will also provide a view at least twelve feet perpendicular to the side of the bus at a distance of thirty-two feet back from the front bumper. Make repairs if mirrors are not in correct adjustment or mounting brackets/mirror assembly is loose. All mirror systems must meet criteria of and be in compliance with FMVSS111.

   The vehicle shall be removed from service until repairs are made if any of the following conditions exist:
   - Mirror is missing
   - Mirror is cracked, pitted, clouded or deteriorated to extent vision is obscured

- Mirror will not hold set adjustment

3. Crossover Mirror System – Check crossover mirrors for vision, condition, and mounting. Correct adjustment will provide the driver with indirect vision of an area at ground level from the front bumper forward (12 feet) and the entire width of the bus. It will also provide the driver with indirect vision of the area at ground level around the left and right front corners of the bus, to include the tires and service entrance on all types of buses to a point it overlaps with the rear vision mirror system. Make repairs if mirrors are not in correct adjustment or if mounting brackets or mirror assembly is loose. All mirror systems must meet criteria of and be in compliance with FMVSS111.

The vehicle shall be removed from service until repairs are made if:

- Mirror is missing
- Mirror is cracked, pitted, clouded or deteriorated to the extent that vision is obscured
- Mounting of any mirror and bracket made by different manufacturers.

Driver's Seat and Belt

Check Driver seat and belt for condition, mounting, and operation. Make repairs if any of the following conditions exist:

- Seat (air or manual) adjustment binds or difficult to operate
- Seat adjustment loose or adjustment hardware missing
- Seat upholstery or foam deteriorated or damaged
- Seat bottom loose in frame or mis-positioned
- Seat belt retractor cover/belt covers are damaged or loose
- Seat belt does not fully extend and retract.
- Seat belt tethers must be present (if required) and properly secured per driver seat adjustment.

The vehicle shall be removed from service until repairs are made if any of the following conditions exist:

- Seat frame and mounts are cracked, broken or distorted.
- Seat moved from OEM position (unless repositioned using written OEM approved mounting instructions).
- Driver seat belt is missing or inoperable.
- Seat belt is routed improperly.
- Seat belt buckle and tongue assemblies do not latch and release properly.
- Driver seat Belt tether missing or not properly connected.
-
-

Passenger Seats

1. Frames – Inspect passenger seat frames for condition of welds, tubing, and hardware. Check for presence of non-OEM seat frames. Make repairs if seat back frame is repaired using non-OEM hardware.

The vehicle shall be removed from service until repairs are made if:

- Seat frames or welds are broken or cracked.
- Seat frame hardware has been added or modified which results in projections or sharp edges.
- Non-OEM seat frames have been installed.

2. Mounting – Inspect condition of passenger seat mounting. Make repairs if seat mounting at floor or seat rail is loose.

The vehicle shall be removed from service until repairs are made if any seat mounting fasteners are of lower grade or different type than OEM fasteners for the specific locations.

3. Pads – Inspect seat back foam for specifications and condition. All North Carolina School Buses must meet FMVSS222. Check for thickness and density of foam around frame. Make repairs if any portion of seat frame is felt when pressing down on seat back top or if any portion of seat back foam is missing or damaged.
   The vehicle shall be removed from service until repairs are made if any seat foam is missing.

4. Cuts (and other upholstery damage) – Inspect seat upholstery for condition and damage. Make repairs if any of the following conditions exist:
   ~~1.~~• Seat upholstery cut or torn and foam is visible through cut
   ~~2.~~• Seat upholstery not repaired properly.
   The vehicle shall be removed from service if any vehicle that came equipped with fire-block upholstery (all lift buses and all othersmanufactured after late 1996) has been retrofitted with upholstery other than fire-block.

5. Bottoms & Flip-Up Seat –To remain in compliance with FMVSS222 all seat bottoms must be secured and remain secured when students are transported. Inspect seat bottoms for securement and condition. Make repairs if seat bottom is not securely anchored to seat frame or seat bottom padding/cover has damage and deterioration.

6. Inspect flip-up type seat bottom at side emergency door (if equipped) for proper operation. There must be clear access to the emergency door with a minimum aisle width of twelve (12) inches between seats.
   The vehicle shall be removed from service until repairs are made if any of the following conditions exist:
   - Not a clear minimum twelve- (12) inch aisle width to the side emergency door.
   - Flip-up seat bottom will not raise or lower.
   - Will not stay in the raised position or automatically retract properly when not occupied.

7. Modesty Panels & Courtesy Panels – Inspect modesty panels and courtesy panels for condition, mounting, and padding. Make repairs if any of the following conditions exist:
   - Covering or padding damaged
   - Mounting frame or attaching hardware missing/damaged

   The vehicle shall be removed from service until repairs are made if:
   - Bus is not equipped with a padded safety barrier in front of any passenger seat that does not have another seat in front of it.
   - Fire-blocking crash barrier fabric is repaired or replaced using unapproved procedures or non-fire blocking material.

Emergency Door / Window / Hatches

1. Operation – Inspect for operation and condition of rear emergency door and side door, door latch, door hold open feature (if equipped), door seal, emergency windows and emergency exits/ventilator (roof hatches). Make repairs if any of the following conditions exist:
   - Rear door opens too far and damages lights
   - Door handle, latch or mounting hardware loose
   - Mounting of guard for inside rear door handle loose
   - Emergency door latch does not operate smoothly and easily when closing or opening
   - Door hold open feature (if equipped) does not function or secure door in the open position
   - Inside door handle is not equipped with a guard
   - Emergency door does not open and close from the inside and outside easily
   - Weather-strip seal is damaged or does not seal properly

The vehicle shall be removed from service if there is any loose, damaged, or protruding window hardware that would be a hazard to passengers.

4. Sun Visor – Check drivers sun visor for condition and operation. Make repairs if any of the following conditions exist:
    - Sun visor is too tight and cannot be adjusted
    - Driver sun visor is cracked, damaged, clouded, dirty
    - Visor will not stay in position or has unauthorized stickers. (Cannot be altered from OEM)

    The vehicle shall be removed from service until repairs are made if sun visor is missing or has sharp/protruding edges that could cause personal injury.
5. View Blockage-No object shall block driver view through any glass surface in the immediate driver area. (Driver seat 90 degrees left or right)

    The vehicle shall be removed from service until repairs are made if:
    - Driver view is obstructed by objects or stickers.

~~Wheelchair~~ Lift, Door and Securement System

1. Operate lift through complete cycle and inspect for proper operation, condition, safety features, manual backup system, fluid leaks, mounting, barrier operation, warning light, buzzer operation and overall condition. Make repairs if any of the following conditions exist:
    - Dome light at inside lift area inoperative
    - Lift door or latch does not operate smoothly
    - Fluid seepage at the lift
    - White light (if equipped) at exterior lift area inoperative
    - Lift control cable or wiring damaged or routed improperly
    - Lift does not fold, unfold, lift and lower properly
    - Lift jerks or binds
    - Lift leaks fluid onto or below floor
    - There is excessive side play (more than two inches) in the lift mechanism when the platform is partially or fully extended
    - Lift jacks up the vehicle
    - Manual backup system does not function properly.

    The vehicle shall be removed from service for wheelchair/lift operations until repairs are made if:
    - Elevator lift platform is not flush with floor in “up” position
    - Any part of the lift mechanism or hardware is damaged, missing, or not secure including cams, clips, pins, rollers, and platform fasteners.
    - Wheelchair lift will not operate as designed.
    - Wheelchair or occupant securement straps are broken or frayed

2. Inspect wheelchair and occupant securement (tie-down) system for condition, mounting, proper type, and location. Make repairs if any of the following conditions exist:
    - Track filled with dirt and trash
    - Wheelchair tie down track or fasteners are loose, broken, or sections of track are not continuous within each wheelchair position
    - Wheelchair or occupant securement straps are broken, frayed, or will not operate
    - Wheelchair or occupant securement track mounted using lag type bolts or sheet metal screws.

- Buses under 30' in length: is same, except intermediate amber is not required.

Make repairs if any of the following conditions exist:

- Reflector is damaged or cracked
- Required reflectors are missing
- Reflector is faded significantly affecting its original color.

3. Strobe Light- Check roof mounted white flashing strobe light (if equipped) for operation, location and condition. Make repairs if the strobe light does not function. Strobe lights required on all 1998 and newer buses.

Eight Light System, Stop Arm & Crossing Arm

Eight Light Warning Lamps Require 100% of LEDs Operating

1. Eight Light Warning System Lights – Check eight light warning system lights for operation and condition. Make repairs if any of the following conditions exist:
   - Amber or red pilot light fails to function
   - Light hood (if equipped) is damaged so that it obstructs visibility of the light
   - LED lights are not set to strobe feature (if equipped with strobe/flash switch).

   The vehicle shall be removed from service until repairs are made if any of the following conditions exist:
   - Amber or red light does not function or is dim.
   - Amber/red lights (both front and rear) do not alternately flash (side to side).
   - Warning light is not red (outer) or amber (inner) or is not the proper type.
   - Warning light lens is damaged and white light is visible.
   - Warning light lens has darkened, faded, misaimed, or dirty affecting the color of the light or reducing the visibility to less than 500 feet in bright sunlight.
   - Warning lights do not function as designed.
2. Stop Arm – Check stop arm for specifications, operation (fully extends to 90 degrees), and condition. Make repairs if any of the following conditions exist:
   - Any LED's fail to function
   - Wiring ground strap loose or not properly routed and secured
   - Hinge or bushing is dry of lubrication
   - Stop arm assembly or blade mounting loose
   - Stop arm extends more or less than 90 degrees
   - Stop arm does not fully extend or retract or is slow
   - Air operated stop arm diaphragm has air leak
   - Stop arm (paint or decal) is significantly faded or discolored.

   The vehicle shall be removed from service until repairs are made if:
   - Stop arm light does not operate
   - Does not flash between 60 and 120 times per minute.
   - Stop arm does not operate as designed.

3. Crossing Control Arm – Crossing arms required on all 1977 and newer buses. Check front bumper mounted student crossing arm for operation, condition, mounting and retention device (i.e. magnet). Make repairs if any of the following conditions exist:
   - Crossing arm mount bolts loose
   - Hinge bushings need lubrication or are damaged
   - Air leaks from air operated diaphragm
   - Arm does not fully extend (90 degrees)
   - Arm is improper height (level with bumper) when out.

   The vehicle shall be removed from service until repairs are made if any of the following conditions exist:

3. Engine Performance – Check engine for acceleration, smooth operation, noise in engine or valve train, and excessive smoke. Make repairs if engine fails to operate efficiently.
The vehicle shall be removed from service if excessive noise is detected or if engine fails to operate properly

4. Rear axle and driveline – Check rear axle and driveline for vibration and noise. Make repairs if noise is detected.
The vehicle shall be removed from service until repairs are made if excessive noise and vibration are detected.

5. Transmission – Check transmission operation for up-shift, downshift and slippage. Make repairs if rough up-shift or downshift is experienced.
The vehicle shall be removed from service until repairs are made if transmission is slipping.

6. Road Speed Control – Check road speed control for proper operation. Check operation for high limit cut-off and low limit cut-in. Make repairs if high limit is 48 mph or above and if low cut-in is 42 or below.
The vehicle shall be removed from service until repairs are made if road speed control fails to operate or allows vehicle to exceed 50 MPH.

7. Instrument Gauges, Speedometer, and Odometer – Check all instrument gauges for proper operation. Make repairs if any gauge fails to operate properly. Check speedometer and odometer for proper operation. Make repairs if speedometer needle is erratic or if odometer fails to operate.
The vehicle shall be removed from service until repairs are made if speedometer fails to operate.

~~8.Hydraulic Brake Warning Light – Check operation of hydraulic brake warning light.~~
~~The vehicle shall be removed from service until repairs are made if warning light fails to operate.~~

~~9.Low Air Warning Buzzer and Light – Check low air warning buzzer and light for proper operation.~~
~~The vehicle shall be removed from service until repairs are made if warning buzzer or light fail to operate properly.~~

1. Service Brake Check-Check for smooth even operation. Bus should not pull left or right or veer from original lane of travel when brakes are applied.

APPENDIX A

30-DAY INSPECTION (step-by-step)

Following is one suggested approach for conducting the 30-day inspection. It is important to conduct the inspection first, then to make repairs as needed.

Do not make repairs until inspection is completed.

c)Review last inspection sheet.

d)Visually inspect under the vehicle for leaks.

e)Place wheel chock under front right tire.

Inside the Bus

f)Enter the driver door. Check condition of hinges, panels, and door bumpers.

g)Inspect condition of handrails, steps and floor covering.

h)Operate the driver seat and the seat belt for secure mounting, condition, and proper operation. Adjust the seat through all positions and operate the seat belt.

i)Inspect the ignition switch (driver's key should not be in ignition). Check the ignition switch for proper operation.

j)Check to ensure air gauge is below ten pounds (if air brake vehicle)

k)With the ignition switch in the off position, depress the brake pedal on hydraulic brake buses and inspect the brake motor for proper operation.

l)With the ignition switch in the on position, check the operation of the low-air light, brake warning light, buzzer and any engine lights.

m)With the transmission in drive, check the operation of the neutral safety switch.

n)With the transmission in neutral and parking brake applied, turn the ignition switch to "start" and check the starter for proper engagement and disengagement.

o)Inspect the engine for noise, idle, misfire, and smoke.

p)Inspect volt gauge and oil pressure gauge for immediate reaction.

q)Notice reaction in the air gauge for proper build.

r)Inspect the interior roof, rear view mirror and sun visor for secure mounting, condition, and proper operation.

s)Inspect the windshield wipers and washer for proper operation.

t)Inspect all front glass for cracks, clarity, glazing, and secure mounting.

APPENDIX D

30 Day Inspection Video

An instructional video produced in 2010 was provided to each school bus garage in North Carolina as an educational tool for new technicians and a refresher for others performing 30 day inspections.