

NC BUS FLEET: *North Carolina School Transportation Fleet Manual*

Preventive Maintenance

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INTRODUCTION

North Carolina school children deserve the safest transportation possible. A well-maintained school bus driven by a well-trained professional bus driver helps ensure their safety. The state's fleet of school buses is kept safe through the work and dedication of thousands of employees of local education agencies (LEAs). The North Carolina Department of Public Instruction (DPI) Transportation Services section works in partnership with these LEAs, providing consultation on school bus transportation and administering the resources needed for school bus operations.

This manual provides requirements and guidance related to the fleet of school buses and service vehicles. It includes:

- Vehicle Purchase, Replacement and Disposal
- Preventive Maintenance
- Vehicle Inspection

Vehicles

The State Board of Education is given statutory authority to fund public school transportation operations and the replacement of vehicles. Specifically, it is the responsibility of the State Board of Education to periodically

"...adopt such rules and regulations with reference to the construction, equipment, color, and maintenance of school buses. No school bus shall be operated for the transportation of pupils unless such bus is constructed and maintained as presented in such regulations."

North Carolina General Statute 115C-240(c)

The statute assures that public school buses throughout the State are built to the same standards and are uniform in appearance. DPI Transportation Services works in partnership with the Department of Administration, Division of Purchase and Contract, to establish a statewide term contract for vehicles meeting the specifications developed by a statewide Vehicle Specifications Committee. At any time, the latest version of this document standardizes the construction and equipment to be included on North Carolina school buses. This authority does not extend to private contractors that may provide school bus transportation to a local LEA. School buses operated by private contractors should meet all federal motor vehicle safety standards (FMVSS's) applicable to school buses. Similarly, school buses and activity buses owned by an LEA which are not subject to state replacement must also meet all FMVSS's for school buses or multi-function school activity buses.

The purchase of an initial school bus or service vehicle is the responsibility of the LEA. These vehicles are then replaced at state expense after having reached specified mileage or time criteria. (G.S. 115C-249) In order to be eligible for state replacement, a vehicle must be used only for purposes allowed by general statute and must be maintained as prescribed in this manual. Funds generated from the sale of surplus vehicles are returned to the state fund used to purchase new (replacement) vehicles.

Because the State is responsible for replacing 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. In general, items that are included in subsequent year specifications may be retrofitted to older model buses. Additional equipment may be added to school buses as described on page 15 "Alterations and Modifications to School Buses" of this 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:

- Vehicle replacement status and basic identifiers (e.g. warranty date, VIN)
- Preventive maintenance and inspection scheduling
- Inventory management for repair parts, fuel and tires
- 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 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 essential in order for the preventive maintenance program to function properly and to be cost efficient. The prescribed school bus garage operational procedures should be followed as closely as possible.

While state funds are allocated for the replacement and maintenance of school buses, it is the responsibility of the LEA to provide facilities and equipment. This is outlined in General Statute 115C-249 (Purchase and Maintenance of School Buses). Section (e) reads as follows:

"It shall be the duty of the county board of education to provide adequate buildings and equipment for the storage and maintenance of all school buses and service vehicles owned or operated by the board of education of any local school administrative unit in such county. It shall be the duty of the tax-levying authorities of such county to provide in its capital outlay budget for the construction or acquisition of such buildings and equipment as may be required for this purpose."

Additional information concerning NC school bus transportation can be obtained online at www.ncbussafety.org.

Questions regarding the contents of this manual should be directed to DPI Transportation Services at 919.807.3570 (www.ncbussafety.org/contact.html).

PREVENTIVE MAINTENANCE PROCEDURES

Preventive Maintenance Overview

The following program must be documented by proper completion of all currently required preventive maintenance forms. Documentation of maintenance is essential to conducting an effective, safe and cost-efficient maintenance program and in justifying budget needs and allocations.

With the exception of fuel trucks and wreckers, where preventive maintenance is based on time, most vehicles have mileage-based preventive maintenance. As such, accurate odometer operation and timely entry of mileage into BSIP are essential to the success of the preventive maintenance program.

The performance of this maintenance program must be in accordance with all safety rules and regulations prescribed by the Occupational, Safety and Health Administration, the State Board of Education, and the local education agency.

All brake repairs shall be checked for operating safety and efficiency by using a Tapley Brake Meter or equivalent meter. The percent of brake efficiency shall be recorded for future reference.

Each mechanic should be provided a copy of the Preventive Maintenance Manual.

For pre-2007 engines, 15W40, CI-4 / CI-4+ engine oil, or current manufacturer recommendations, SHALL BE USED IN ALL DIESEL engines. Gasoline service vehicles should use the manufacturer recommended oil.

This vehicle service is to be recorded on a BSIP-generated DP02 Repair Order by the technician performing the service.

Factors that affect oil contamination are as follows:

1. Cold running engine (use at least 185 degree thermostat)
2. Faulty air filtration system
3. Poor operating engine (rich fuel mixture)
4. Weather conditions

Oil Analysis - A proper oil analysis program allows technicians to make more informed maintenance decisions. The timely equipment condition information provided through oil analysis results can help users decrease maintenance expenses through component life extension, extended oil drains, and breakdown avoidance. A garage should keep a large supply of Oil Analysis Kits on hand. Always use recommended procedures when drawing an oil sample in order to ensure accurate results. A copy of the analysis results should be kept in the PM file of the particular bus sampled. If analysis results require that oil be changed, a DP01 work order should be generated under the heading BUS # (Mileage) Unscheduled Oil Change per sample results.

Access to service and maintenance manuals is required to be available at each school bus garage for each year model vehicle. The manuals, CD or website will be made available by the bus manufacturer.

Scheduling

The transportation director or other designated employee shall review BSIP screen ZIP24 (Select variant DPI_PM) each workday morning. The daily work schedule should be adjusted accordingly dependent upon what vehicles are displayed. One advantage of reviewing the screen daily is that it allows each county to service all vehicles before they exceed the preventive maintenance mileage maximum of the specific maintenance plan for the bus.

Early Display - All vehicles will appear for preventive maintenance 1000 miles before they reach the maximum mileage allowed between preventive maintenance services. Vehicles due 30-day inspections will appear ten (10) days before they exceed the maximum days allowed between inspections. Each school bus and activity bus must be inspected each thirty-calendar day period to meet state statutes. NOTE: BSIP will continue to count days over an extended holiday period.

Goals – The primary goal is to perform each scheduled inspection and preventive maintenance activity on time for each vehicle. BSIP provides notification prior to the due-mileage of a PM. A 1000 mile window ensures preventive maintenance service can be performed before the scheduled due-mileage for each bus is reached. Inspections should always be performed on or prior to the due date if the vehicle is in operation.

Vehicles Displayed - Only active vehicles that are being used should appear on the ZIP24 Screen. For sale, sold or cannibalized vehicles should be reported to the BSIP helpdesk for removal. The help desk will also deactivate the plans for local vehicles (other than activity buses) upon request.

Factors - The preventive maintenance program is supported by an automated scheduling system. The computer system schedules vehicles for preventive maintenance based on mileage that has been entered into BSIP.

Preventive Maintenance Scheduling - PMs are scheduled at intervals determined by the PM Plan. Scheduled Packaging determines what interval to be scheduled. Please note that PERFORMING PMs EARLY or LATE WILL NOT AFFECT THE SCHEDULE OF THE NEXT PM

Screen Display – A screen shot of the ZIP24, variant DPI_PM is shown below:

Maint. item text	Order	Due packg.	Sort field	CntrRdg	NPCR	TotCtrRdg	Differe...	Work Order Status	MntPlan	Equipment
6008-7012: Light Duty T...	62000717950	6K 12 24		73836	72977	73836	859-	REL PRT NMAT ...	81809	62019477
6008-4003: Medium Dut...	62000724160	6K 12 24 48		95270	95001	95270	269-	REL PRT NMAT ...	81685	62017424
6008-0193: Bus PM	62000747313	5K 15		15185	15000	15185	185-	REL PRT NMAT ...	118799	62109500
6008-0190: Bus PM	62000744754	5K 10 15 30		90078	90000	90078	78-	REL PRT NMAT ...	81629	62015980
6008-0185: Bus PM	62000729974	6K 12		82377	82397	82377	20	REL PRT NMAT ...	81624	62017479
6008-0200: Bus PM	62000744755	5K 10		19930	20000	19930	70	REL PRT NMAT ...	118806	62109507
6008-0183: Bus PM	62000747585	6K 12		76863	76994	76863	131	REL PRT NMAT ...	81622	62018479
6008-0201: Bus PM	62000747346	5K 10		9829	10000	9829	171	REL PRT NMAT ...	123543	62127501
6008-0177: Bus PM	62000744756	6K 12 24 48		93925	94131	93925	206	REL PRT NMAT ...	81596	62017481
6008-0196: Bus PM	62000749715	5K 10 15 30		29746	30000	29746	254	REL PRT NMAT ...	118802	62109503

PMs due in order of mileage

Preventive Maintenance Plans

Technicians should refer to OEM service maintenance manuals for specific preventive maintenance procedures.

New Vehicle Service

The success of any preventive maintenance program is determined by a number of factors. One of the initial factors, and possibly one of the most important, is the proper servicing of new vehicles prior to placing them into daily service. Without proper new vehicle servicing, the durability, service, and vehicle life will be adversely affected.

The technician shall complete the New Vehicle Service Work Order during the new vehicle preventive maintenance service prior to the bus being placed in service. This order is created in BSIP for new vehicles and can be accessed via IW38 with an order type of DP07. The information requested for each item shall be completed. After the inspection is finished, the form shall be reviewed by the shop foreman/transportation director and filed in the Individual Vehicle Maintenance History file along with technician's signature and entered in the computer.

NOTE: The technician is required to initial each service as it is performed as well as record all test results indicated on the new vehicle service work order. Instructions for accessing the New Vehicle Service Work Order in BSIP can be found at www.ncbussafety.org/BSIP/TransactionProcedures.html.

PM Task List

For each vehicle on a mileage based Preventive Maintenance plan a PM work order (DP02) is due in BSIP every 5,000 miles. These orders are created approximately 1000 miles in advance of the due mileage and can be accessed in BSIP using the ZIP24 transaction with the DPI_PM variant. The type of work to be performed depends on the vehicle's model year, mileage, and make. PM plans are altered as needed to address model-specific issues that may require additional attention. As such, all items on a PM, as long as they are applicable to that vehicle, should be performed as listed on the work order printed from BSIP.

The tasks lists are also available under MAINTENANCE at www.ncbussafety.org/vehicles.html

Most of the tasks have been taken from manufacturer's service recommendations. It is extremely important for each technician to become familiar with these manuals. If it is questionable on how the operation should be performed, this manual should be reviewed to ensure the correct service as prescribed by the manufacturer. One manual is usually sent with each bus.

OFFICE PROCEDURES

Required Maintenance Record Documentation

The following are maintenance record forms and other related documents, which are required to manage and document the school vehicle maintenance program. These forms are to be properly and thoroughly completed and filed appropriately. DPI Transportation Services staff members will review these records during the annual inspection and other times as needed. Occasionally these forms are updated to accommodate changing needs, however, sample forms have been provided in (APPENDIX G). These forms are also available at WWW.NCBUSSAFETY.ORG under the reports & forms section.

- TD-18 – Equipment Repair
- TD-18B – Fuel, DEF and Lubricant Issue Ticket
- TD-18W – Warranty Repair of Equipment
- TD-21 – Inventory Receipt (ME21N)
- TD-27 – Spare Vehicle Assignment Log
- TD-28D – Bus Driver Sign-In Sheet
- TD-28R – Reported Defects Log
- TD-28S – Service Call Log

Filing

All of the file folders listed in this section are essential for proper documentation of the vehicle maintenance program. An explanation of each folder listed below is presented in following sections.

Individual Vehicle History File – The Individual Vehicle History file should contain information that should be kept for the life of the vehicle. Examples include:

1. Line Setting Sheets
2. Warranty Information
3. Vehicle recall documentation
4. Major repair (warranty and non-warranty) documentation
5. Major damage documentation (e.g. flood, fire, crash)
6. Other information deemed necessary by the LEA

Individual Vehicle Inspection File - The Individual Vehicle Inspection file should include all monthly inspections. The Inspections should be filed with the most current record filed in the front of the file.

Individual Vehicle Preventive Maintenance (PM) File - The Individual Vehicle Maintenance file should include all completed preventive maintenance work orders. The maintenance orders should be filed with the most current record filed in the front of the file.

Note: A county may elect to combine the Inspection and PM files for each bus, with documents filed chronologically or separated front and back with, for example, PM's in the front and Inspections in the rear.

Individual Vehicle Repair Order File - The Individual Vehicle Repair Order file should include all complete repair orders. The Orders should be filed with the most current record filed in the front of the file.

Individual Vehicle Work Order (TD-18) File - The Individual Vehicle Work Order file should include all incomplete work orders. The file should be reviewed when a vehicle comes to the shop and the work orders should be completed while the vehicle is in the shop. (NOTE: the shop foreman or personnel responsible to manage the maintenance of the vehicles usually maintain this file)

Vehicle Accident File - The Vehicle Accident File should include all accident reports. The Accident Reports should be filed so that they can be easily located by date and by vehicle.

Discarded Equipment File – This file should include documentation of all equipment sold (surplus buses and trucks, scrap metal, scrap tires. For vehicle sales, it is useful to include a copy of the payment check and vehicle title and retain that copy in this file.

Inventory Received file – Because of the variety of invoices received (unit pricing, total pricing, tax, freight, etc.) it is essential that proper pricing of individual items received in inventory be calculated prior to entry in BSIP. The TD-21 worksheet (paper or electronic) helps to facilitate proper data entry. Calculations or inventory receipts should be retained in paper or electronic (spreadsheet) files.

Fuel Issues File – A chronological file of all paperwork associated with issuing fuel from the fueling station or from fuel trucks must be maintained.

School Bus Driver Sign-in Sheet – A system through which school bus drivers can report vehicle defects on a daily basis is a critical part of proper maintenance. Hard copy or electronic forms containing the key information required on the TD-28D (Bus Driver Sign-in Sheet) must be maintained. Original files must be available at the LEA transportation office.

Service Call Logs – A system for logging incoming emergency maintenance calls (breakdowns) must be in place. Hard copy or electronic forms containing the key information required on the TD-28S Form (Service Call Log) must be available at the LEA transportation office.

E-Mail Communications – Regular communication from the Department of Public Instruction is sent to school transportation employees via an email list. Critical messages are assigned a numerical reference – for example, “DPI Message # 117 – Transportation Allotments Increased.” E-mail messages with DPI Message Numbers should be filed together in numerical order for future reference and to help prevent missed messages.

Data Entry Procedures

Entering maintenance data in BSIP is required to ensure proper documentation of required maintenance, labor charges and parts assignments. Because of the impact on vehicle mileage documentation, fuel issues should be entered in the system first. Following fuel issues, vehicle inspections should be entered, followed by preventive maintenance and, finally, “TD-18” maintenance work orders and inventory receipts.

Maintenance Activity Types

BSIP requires activity types to be associated with each work order. The following table indicates the different activity types and the kind of work order that should be coded to each.

Code	Description	Examples
2	Recall, Safety	Any recall that is related to a safety issue. <i>Examples: brake valve recall, handrail recall,</i>
3	Recall, Other	All other recalls not related to a safety issue. <i>Examples: roof hatch leak recalls, etc.</i>
4	Emergency	All unscheduled breakdowns or emergencies <i>Examples: road calls, wrecker calls, accidents</i>
5	Inspections	A work order where no repair was performed. <i>Examples: Annual DMV Inspection, technician diagnosing, but not repairing, a problem.</i>
7	Scheduled Correction	Any work which is scheduled for repair (even if the repair is performed immediately upon finding the problem). <i>Examples: All PM,s, a bus that is scheduled to have an engine replaced. A bus that is scheduled to have the brakes replaced prior to the brakes failing, a bus scheduled to be painted, a bus scheduled to have a wheel alignment. etc.</i>
8	Up Fit	Adding or removing equipment that the vehicle did not originally have
11	Strip 4 Sale	Any work required to sell the vehicle. Examples: Painting over or removing lettering, disabling or removing the stop arm.
12	Warranty	Any repairs made under warranty. Work done at the manufacturer, at the LEA's shop, by the manufacturer personnel or shop LEA personnel.
14	Wreck Repair	Any Repairs made due to an accident

Cause Codes

BSIP allows a code to be associated with the CAUSE of each work order. The following table indicates the different activity types and the kind of work order that should be coded to each.

Code	Causes	Examples
1	Breakdown	Any unscheduled repairs made due to a breakdown of a component at school or shop. Include only defects found by the technician or reported by anyone other than the driver. <i>Examples: Flat tires, malfunctioning lights, heaters, wipers, horn, broken glass, etc.</i>
2	Consumption, Fuel	Any repairs made for the sole purpose of increasing MPG. <i>Examples: Changing the air filter for the sole purpose of increasing MPG. Tune-ups for the sole purpose of increasing MPG.</i>
3	Consumption, Oil	Any repair made for the sole purpose of decreasing oil consumption. <i>Examples: Replacing gaskets or seals on the engine for the sole purpose of reducing oil consumption.</i>
4	Driver's Report	Any unscheduled repair made at school or shop that are reported by the driver. <i>Examples: Flat tires, malfunctioning lights, heaters, wipers, horn, broken glass, etc.</i>
5	Routine Inspections	All monthly inspections (30-Day Inspections)

Code	Causes	Examples
6	Lubrication	Any lubrication outside of PM
7	Pre-Delivery	All new vehicle Prep. All work involved in preparing a vehicle for first time use.
8	All PM's	All PM'S <i>Examples (05,06,07,08)</i>
9	Rework	Any Repairs made to components that were not repaired correctly the first time.
10	Road Call	Service Call: Any call for service on a route that requires travel to the vehicle before the vehicle can continue on the route; or if the vehicle can not be repaired and has to be towed to shop for repairs. <i>Example: Flat tires, inoperable warning lights, engine malfunction, stuck vehicle on route, vehicles out of fuel on route, etc.</i>
11	Routine	Catch -All Use for routine maintenance. <i>Examples: Summer repairs, inflating tires, checking fluids, fueling buses, etc.</i>
21	Capital Improvement	Addition of any equipment that will increase the value of the vehicle. <i>Example: Addition of an air conditioner, upgraded seats, must be DPI approved additions.</i>
22	Conversion	Not Used
23	Modification	Any approved modifications that will not increase the value of the bus. <i>Examples: Upgrade Crossing Arm, Roof Hatch, Strobe Lights, etc.</i>
24	Special Study	Any repairs or adjustments to equipment involved in a pilot study or research data study.
32	Accident, Reported	Any activities due to a reported accident. <i>Examples: Investigation, wrecker service, etc.</i>
33	All recalls	Repairs made due to safety recall or any other recall. <i>Examples: Repairs made due to safety recalls or any other recalls by request of the manufacture.</i>
34	Statutory Inspection	Annual DMV Inspections
35	Any Modification Required by law.	Any modification that is required to be made due to a law or code. Example: FMVSS Modification (crossing arm).
36	Theft	Any repairs made due the theft of the vehicle.
37	Vandalism	Any repairs made due to the act of vandalism. <i>Examples: Cut seats, broken glass, due to the act of a person cutting or destroying.</i>
38	Warranty	Any time or repairs associated with a component being repaired under warranty of the vehicle.
39	Natural Causes	Any repairs made due to act of nature. <i>Examples: Fallen trees, floods, storm, wind damage, etc.</i>
41	Abuse of Equipment	Any repairs due to Driver abuse of equipment. <i>Examples: Twisted drive shafts, broken axles, etc.</i>

Transportation Records Disposal

The following information is taken from the State of North Carolina Department of Cultural Resources, Division of Historical Resources, Archives and Records Section.

Accident Reports and Tort Claims File - Copies of accident reports, plaintiff's affidavits, and notices of tort claims. (See G.S. §143-300.1)

Disposition Instructions: Destroy in office 7 years after settlement of claim.

Annual Transportation Reports File - Summary reports listing the activities of a local education agency's transportation department. Reports include number of days fleet was in operation, total number of miles buses were driven, number of buses operated, salaries paid to drivers and other transportation personnel, number of personnel employed, list of local expenditures, transportation policy questionnaires, inventory data, and other related information. Copies of report are sent to the central office and the Department of Public Instruction.

Disposition Instructions: Destroy in office after 3 years.

Bus Inspection Reports File - Inspection reports of school buses or school transportation service vehicles.

Disposition Instructions: Destroy in office after 3 years.

Contract Transportation for Children w/ Disabilities and Other Contracted Services File - Records concerning contracted transportation services for children with disabilities or other pupils, or other groups. File includes contracts, bus driver routes, salary schedules, refund reports, school bus passenger reports, annual transportation reports, inspection reports, and other related records.

Disposition Instructions: Destroy in office after 3 years if no litigation, claim, audit, or other official action involving the records has been initiated. If official action has been initiated, destroy in office after completion of action and resolution of issues involved.

Cost of Transportation File - Records concerning the operation, maintenance, replacement, and insurance of school buses or other school transportation service vehicles. File includes requisitions, expenditure reports, and other related records.

Disposition Instructions: Destroy in office after 3 years and when released from all audits, whichever occurs later.

School Bus Inventory and Maintenance File – Fleet maintenance records compiled from the Business Systems Information Portal (BSIP) that concern the maintenance of school buses or school transportation service vehicles. File includes 30-day inspection worksheets, oil filter reports, fuel receipts, preventative maintenance charge tickets, bus fleet inventories, and other related records.

Disposition Instructions: Destroy in office after 3 years if no litigation, claim, audit, or other official action involving the records has been initiated.

School Bus Routes File - Records concerning routes taken by school buses. File includes descriptions of routes, passenger lists, bus run reports, and other related records.

Disposition Instructions: Destroy in office after 3 years.

Seat Belt File - Records concerning the use and installation of seat belts and other restraint systems in school buses. File includes consent forms and similar records showing student's name, bus number, date system requested, type of system requested, and signatures of school's principal and student's parent and/or guardian.

Disposition Instructions: Destroy in office when superseded or obsolete.

State Vehicle Fleet Management System (BSIP) (Electronic) File - BSIP is a electronic data processing record used by the local education agency to track inventory and maintenance of school buses or school transportation service vehicles. Preventative maintenance information and inventories of buses are entered into this electronic file.

DISPOSITION INSTRUCTION: General guidelines for disposing of machine readable and electronic data processing records may be found in STANDARD-4. MACHINE READABLE AND ELECTRONIC RECORDS. BSIP inventory and maintenance information should be retained in electronic form for 3 years after applicable inventories and maintenance reports are produced and then erased or deleted.

Transportation Information Management System (TIMS) (Electronic) File - TIMS is an electronic data processing record concerning the management of school transportation services. Bus scheduling and routing information, students' addresses, bus maintenance schedules, mileage of buses, and other related data are entered into this electronic file.

Disposition Instructions: General guidelines for disposing of machine readable and electronic data processing records may be found in STANDARD-4. MACHINE READABLE AND ELECTRONIC RECORDS. TIMS data and statistics should be retained in electronic form for 3 years after applicable statistical reports are produced and then erased or deleted.

Transportation Records File - Records documenting school bus maintenance and use. File includes number of hours driven, refund and materials received report, and transportation charge. File also includes summaries, reports, transportation audits, and similar records generated by the Transportation Management System (TIMS) and/or received from the N.C. Department of Public Instruction.

Disposition Instructions: Destroy in office after 3 years or when superseded, obsolete, or administrative value ends, whichever occurs first.

Vehicle Inspections File - Records concerning inspections as required by the Department of Transportation, Division of Motor Vehicles, Enforcement Section. File includes inspection certificates, monthly summary lists, and receipts and statements for vehicle inspection certificates.

Disposition Instructions: Transfer original records to the Department of Transportation, Division of Motor Vehicles, Enforcement Section when generated. Destroy duplicates in office after 18 months and when released from all audits, whichever occurs later.

BUS GARAGE PROCEDURES

Fleet Assignments and Management

According to General Statutes 115C-241:246, the LEA superintendent or designee has the responsibility for assigning students to buses, assigning buses to schools, establishing routes, etc. In general, the transportation director is responsible for maintaining a current list of school buses in operation on a daily basis and the assignments of those buses. G.S. 115C-240(d) requires that all LEAs use the Transportation Information Management System (TIMS) or an equivalent system for routing. LEAs are also required to use DOT's Business Systems Improvement Portal (BSIP) for fleet maintenance. These systems should be maintained on a timely basis to ensure real-time accuracy of fleet assignments and status.

Extra Bus Schedule Documentation - When a school bus is not available for regular service due to maintenance or accident, a spare bus may be used in its place. This is the only time that a spare bus may be used. Careful documentation on the allocation of spare buses must be kept, including the location, bus numbers and dates out/in. The TD-27 (Spare Bus Assignment Form) fulfills this requirement.

Garage Procedures - Proper garage operation is essential to a cost effective preventive maintenance program. The maintenance programs presented in this manual requires that the operation of the school bus garage be conducted in the manner described below.

The following procedures should be utilized at the garage:

- The garage shall be kept in a clean, workable, safe condition at all times.
- A designated parking area should be available for vehicles awaiting maintenance or repair.
- Regularly scheduled maintenance (PM and 30-day inspection) is flagged in BSIP and work orders are automatically generated. When a vehicle is brought to the bus garage for other non-scheduled maintenance, a work order should be initiated in BSIP (or prepared on a hard copy TD-18) and held by the supervisor in charge of maintenance until assigned to a technician.
- A technician driving a vehicle at any time should consider it to be a road test. They should always be alert and aware of any defects. Any defects detected shall be reported and added to a repair order.
- It is essential for broken odometers to be repaired immediately whenever they are detected as malfunctioning. Correct vehicle mileage is essential for the proper scheduling of the preventive maintenance program by the computer. LEA's should get a speedometer shop to set new odometer mileage reading to old odometer reading (if possible).

Selected Repair Guidelines

The following recommendations should supplement the procedures provided by the original equipment manufacturer (OEM):

- When performing preventive maintenance on brakes, it is recommended that one person adjust all brakes.
- When the brakes are relined, the brake drums shall be turned (if needed) and not to exceed manufacturers drum wear specifications and the wheel cylinders/calipers rebuilt (if needed). The repairing technician shall record the brake lining thickness at the thickest point above the rivet head, in the proper place on the work order when performing a major service work order. A tread depth gauge measured in thirty-seconds shall be used to measure rivet depth.
- All S-cam shall be checked per OEM specifications.
- Automatic transmissions, engines and differentials replaced by stock units and left to be rebuilt later, shall be stored in a designated area and tagged with the number of the bus from which removed and the apparent defects or symptoms. Rebuild all major components and sub-assemblies to the manufacturers recommended specifications.
- The responsibility for maintaining safe tires on school buses (regular and spare) will be assigned by the foreman and/or supervisor. This does not relieve other employees of responsibility. Any employee who detects an unsafe tire (just as any other defect), on any vehicle maintained by the school bus garage, becomes responsible for changing the tire or repairing that defect, or informing the foreman or director that such action is needed. The determining factor of when to change a tire will be when it has worn to the point where the thinnest tread has only 4/32" on steering axle and 2/32" on rear axle of tread depth remaining (radial tires). Proper front-end alignment is essential to cost effective tire life. When installing tires on vehicles, new tires are required to be installed on the front axle. Rear dual tires shall be matched for size to within a maximum of 1/4" diameter of each other if possible. New tires are required on the front axle of all school buses.
- All tires and wheels to be repaired should be washed (weather permitting) before being taken to the tire shop.
- All new tires and newly delivered recap tires should be balanced after mounting and before being placed on a vehicle or in the storage rack.
- Used batteries shall be washed and cleaned properly prior to placing in the battery room (or designated area) for recharging or storage. A ventilated location is required to recharge batteries.
- As needed, add antifreeze that meets OEM specifications to the cooling system of each bus. Antifreeze protection should be maintained according to OEM recommendation. (50/50 Mixture)
- Engine coolant DCA level test kits shall be used to determine if maintenance of the cooling system is needed.
- Perform the annual North Carolina motor vehicle inspection required by G.S. 20-183.3(a) and attach the proper sticker to the assigned windshield location. This is may be performed only by certified N.C. inspectors at approved garages.

Personnel Utilization

An important factor in the effectiveness of a preventive maintenance program is the ability and willingness of all transportation personnel to work together with one goal in mind: a cost efficient and safe preventive maintenance program. The assignment of personnel to specific daily job duties is essential for the preventive maintenance program presented in this manual to be successful.

Regular Maintenance and Related Information

In general, maintenance activities are categorized as scheduled or unscheduled. Schedule maintenance activities include all preventive maintenance (PM) and 30-day inspections. Unscheduled maintenance is usually initiated by a defect found during the inspection or results from a report from the driver.

Reporting of defects by drivers:

- Bus Drivers are required to sign in each day where the bus is parked (e.g. using form TD-28D) to report any defect or problem detected during the pre-trip/post-trip inspection or identified while the bus was running.
- Immediately upon arrival of all buses, a designated person should call, fax or e-mail the bus garage giving a report of mechanical problems on the TD-28D (bus driver sign in) form. Other processes may be used; however, all reported problems shall be addressed on a daily basis.
- The transportation director shall assure that a process is in place to address reported defects and make needed repairs.
- In the event critical repairs cannot be made before the bus needs to run again, a spare bus should be assigned to run in its place.
- Personnel assigned to repair problems reported on the TD-28D shall turn in the list of defects with notation and corrections along with the TD-18 repair order.
- The foreman and/or director should check the repair order against the TD-28D form.

Typically, basic maintenance, fueling and observations are conducted during the day at the bus parking area (bus lot, bus garage or school) and more involved maintenance activities are conducted at the bus garage. Depending on the LEA, these tasks may be conducted by fuel truck drivers or technicians, as assigned by the transportation director.

- Fuel vehicles according to a regular schedule (fuel dispensed must be charged to the nearest tenth of a gallon on form TD-18B Fuel Issue Ticket)
- Obtain odometer readings for each vehicle fueled
- Check oil, water, tires and under-hood observation
- Analyze and repair defects or problems reported by bus drivers each day
- Perform 30-day inspections prior to scheduled due-date
- Perform scheduled preventive maintenance prior to scheduled due-mileage
- Perform unscheduled maintenance
- Perform other maintenance tasks assigned by the transportation director / supervisor

The transportation director should ensure that staff know proper safety procedures to be followed when conducting maintenance procedures. For instance, any time someone is working under a bus, chock blocks are to be used.

Service Vehicle Maintenance and Operation

The transportation director is responsible for the proper use, care and maintenance of all school garage service vehicles. This includes pickup trucks (or vans), fuel dispensing trucks, tire trucks, and wreckers. All service vehicles are recommended to be inspected each 30 days in the same manner as school buses and activity buses and annually in accordance with the Division of Motor Vehicles regulation G. S. 20-183.3(a).

All school garage service vehicles are to be maintained in good operating condition and in a safe state of repair. Interior upholstery must be maintained for the safety and comfort of the driver. (Seat cover cannot be ripped, torn or holes worn through.) Body repair and repainting of service vehicles should be conducted as needed and service vehicles should be cleaned inside and out at least once a month.

Vehicle Body Repair & Repainting

While the appearance of school buses and service vehicles may not always directly affect safety, it does affect the public's perception of the safety and mechanical condition of the school bus fleet. Driver attitudes and care of their assigned vehicles are influenced considerably by the appearance of those vehicles. Vehicles shall be repaired and repainted as needed. If a county does not have in-house painting facilities, contracted painting should be used.

Utilization of Surplus Equipment

In some cases, rather than being sold, a bus may be classified as salvage by DPI Transportation Services. With the approval of the regional area transportation consultant, parts may be used from school buses which have been identified for salvage. Parts cannot be removed from any route bus (E2RB,RC,RR,LC), spare bus (ESS), parked bus (ESP), for sale bus (E4), credit bus (E0B), OR sold bus (E6) under any circumstances. **PARTS CAN ONLY BE REMOVED FROM SALVAGE (STATUS EZ) BUSES.**

Parts removed from other vehicles without proper authorization shall be reinstalled by the school bus garage staff.

To obtain a listing of salvage buses, utilize BSIP screen IE36. Select a variant, such as DPI_EZ, that will select Status Included = EZ and Fleet Object Type 6000.

Permission to use major components (Engine, transmission, differential) must be requested prior to installation on a regular bus. Contact a DPI area transportation consultant for the procedures required to utilize major components from a salvage vehicle.

Sale of All Other Surplus Items

Sale of all other surplus items generates revenue for the replacement of service vehicles or is returned to the LEA. Proper procedures must be followed and paperwork submitted using the appropriate form. Forms related to recycling, disposal and sale of surplus items are on the NCBUSSAFETY.ORG web page under “NC Reports and Forms – State Reporting Forms”. Additional guidance on the disposal of property is also shown on that page.

Discarded Materials, Equipment & Supplies

Obsolete Parts and Scrap Metal - Obsolete parts (those that cannot be returned to the vendor) and scrap metal may be sold through State Surplus Property or locally. Following are three options related to this activity.

1. Contact your DPI field consultant to write up a lot of surplus parts or scrap metal for sale through state surplus. Revenue goes into the service truck replacement fund.
2. Include these surplus items in a local sale conducted by the school system. Revenue goes to the LEA. A detailed list including inventory numbers and quantities must be generated in order to remove the inventory from BSIP and report on TD-1. Other documentation must be mailed or emailed to DPI Transportation Services.
3. If you have access to a scrap metal dealer offering current market price for metal, scrap metal may be sold directly. Notify your DPI field consultant of this activity. The check must be made out from the dealer to the Department of Public Instruction. Revenue goes into the service truck replacement fund.

Scrap Tire Casings - 130A-309.09A. Local government solid waste responsibilities. (a) “...Each unit of local government shall implement programs and take other actions that it determines are necessary to address deficiencies in service or capacity required to meet local needs and to protect human health and the environment....”

1. Once the director of transportation declares tires to be no longer useful to the LEA, designate the casings to be scrap and contact the State Surplus Property contractor to pick up the scrap tires. Revenue goes to the service truck replacement fund. NOTE: Some tires may have more value than others to the surplus contractor. LEAs may NOT choose an option below for the more valuable tires and expect the surplus contractor to pick up just the tires with little value in the resale market.

If the LEA has more casings than needed, the transportation director may determine that those casings still have value. State law permits several types of sales.

1. Contact a DPI field consultant to write up a lot of tires for sale through state surplus. Revenue goes to the service truck replacement fund.
2. Return the casings to a vendor with which the LEA does business in exchange for fair market value and receive an account credit. All such transactions must be documented and retained in files for inspection by local auditors and DPI consultants. Such a transaction is considered a “private negotiation and sale” according to Article 12 of Chapter 160A of the North Carolina General Statutes and requires local board of education approval.

Provided the original tire was purchased with state funds, it is allowable to transfer the casings to another county school bus garage for the purpose of being recapped. This may only be done with the written approval of a DPI Transportation Services staff member. A copy of the approval must be maintained in the files documenting the transaction.

APPENDIX C – State Laws and Policies

PUBLIC SCHOOL LAW G.S. 115C-248 and 115C-317

§ 115C-248. Inspection of school buses and activity buses; report of defects by drivers; discontinuing use until defects remedied.

(a) 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 mechanical defects, or other defects which may affect the safe operation of such bus. A report of such inspection, together with the recommendations of the person making the inspection, shall be filed promptly in the office of the superintendent of such local school administrative unit, and a copy thereof shall be forwarded to the principal of the school to which such bus is assigned.

(b) It shall be the duty of the driver of each school bus to report promptly to the principal of the school, to which such bus is assigned, any mechanical defect or other defect which may affect the safe operation of the bus when such defect comes to the attention of the driver, and the principal shall thereupon report such defect to the superintendent of the local school administrative unit. It shall be the duty of the superintendent of the local school administrative unit to cause any and all such defects to be corrected promptly.

(c) If any school bus is found by the principal of the school, to which it is assigned, or by the superintendent of the local school administrative unit, to be so defective that the bus may not be operated with reasonable safety, it shall be the duty of such principal or superintendent to cause the use of such bus to be discontinued until such defect is remedied, in which event the principal of the school, to which such bus is assigned, may permit the use of a different bus assigned to such school in the transportation of the pupils and employees assigned to the bus found to be defective.

(d) The superintendent of each local school administrative unit, shall cause each activity bus which is used for the transportation of students by such local school administrative unit or any public school system therein to be inspected for mechanical defects, or other defects which may affect the safe operation of such activity bus, at the same time and in the same way and manner as the regular public school buses for the normal transportation of public school pupils are inspected. A report of such inspection, together with the recommendations of the person making the inspection, shall be filed with the principal of the school which uses and operates such activity bus and a copy shall be forwarded to the superintendent of the local school administrative unit involved. It shall be the duty of the driver of each activity bus to make the same reports to the principal of the school using and operating such activity bus as is required by this section. If any public school activity bus is found to be so defective that the activity bus may not be operated with reasonable safety, it shall be the duty of such principal to cause the use of such activity bus to be discontinued until such defect is remedied to the satisfaction of the person making the inspection and a report to this effect has been filed in the manner herein prescribed. Nothing in this subsection shall authorize the use of State funds for the purchase, operation or repair of any activity bus. (1955, c. 1372, art. 21, s. 8; 1961, c. 474; 1975, c. 150, s. 2; 1981, c. 423, s. 1.)

§ 115C-317. Penalty for making false reports or records.

Any school employee of the public schools other than a superintendent, principal, or teacher, who knowingly and willfully makes or procures another to make any false report or records, requisitions, or payrolls, respecting daily attendance of pupils in the public schools, payroll data sheets, or other reports required to be made to any board or officer in the performance of his duties, shall be guilty of a Class 1 misdemeanor and the certificate of such person to teach in the public schools of North Carolina shall be revoked by the Superintendent of Public Instruction. (1955, c. 1372, art. 17, s. 6; 1959, c. 1294; 1981, c. 423, s. 1; 1993, c. 539, s. 885; 1994, Ex. Sess., c. 24, s. 14(c).)

North Carolina State Board of Education – Policy Manual

Priority: Twenty-First Century Systems

Category: Transportation

Policy ID Number: TCS-H-011 Current Policy Date: 04/01/2010

Policy Title: Policies governing School Bus and Activity Bus Inspections

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.

Effective date: August 1, 2011

APPENDIX G

Sample Forms

Spare Bus Assignments – TD-27

Updated 04/17/2006

Spare Bus#	Bus# Spare is Replacing	Reason	Date Assigned	Temporary Location of Spare	Date Returned to Garage
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