**SLIDE 1 - DMV LOGO**

Title: North Carolina State Safety Inspection Procedures

Lesson Purpose: To present a standardized method of testing and evaluating the performance and knowledge of Inspector- Mechanics conducting North Carolina State Safety Inspections.

**SLIDE 2 – PERFORMANCE OBJECTIVES**

Student Performance Objectives: At the end of this block of instruction, the student will be able to achieve the following objectives in accordance with the information received during the instructional period.

1. List the nine inspection areas inspector mechanics must check during a safety inspection.

1. Identify eight emission control devices installed by vehicle manufacturers.

1. Determine what emissions control devices are required on a vehicle by using the Emission Control System Applications Manual.
2. Calibrate and utilize a headlight aimer.
3. Calibrate and utilize a window tint meter.
4. Achieve a score of 80% or higher on a Division approved written exam.

Hours: Eight (8)

Instructional Method: Lecture / demonstration / practical exercise

Classroom Environment: Academic classroom/automotive service bay

Materials required: Pen/pencil

 Note paper

 Lesson outline

Safety Inspection/Emission Inspection Regulations

Emission Control System Application Manual

Training Aids: PowerPoint Presentation

 Approved light testing device

 Approve tint meter

 Emission Control Manual

References: North Carolina General Statute, Chapter 20

North Carolina Administrative Code, 19A

Study Assignment: None

Prepared By: J. Loyd Crissman

Assistant Supervisor

 NCDMV License and Theft Bureau

Date Revised: January 2013

Revised By: Brad Brantley

 Assistant Supervisor

 NCDMV License & Theft Bureau

Date Revised: February 2014

Revised By: Michael E. Horne

 Inspector

 NCDMV License & Theft Bureau

Date Revised: August 2015

Revised By: L. Paul Jelley

 Assistant Supervisor

 NCDMV License & Theft Bureau

Date Revised: August 2016

Revised By: L. Paul Jelley

 Assistant Supervisor

 NCDMV License & Theft Bureau

Date Revised: January 2017

Revised By: L. Paul Jelley

 Assistant Supervisor

 NCDMV License & Theft Bureau

Date Revised: January 2018

Revised By: L. Paul Jelley

 Assistant Supervisor

 NCDMV License & Theft Bureau

Date Revised: January 2019

Revised By: L. Paul Jelley

 R.A Rodriguez

 Assistant Supervisor

 NCDMV License & Theft Bureau

Date Revised: December 2019

Revised By: L. Paul Jelley

 R.A Rodriguez

 Assistant Supervisor

 NCDMV License & Theft Bureau

Date Revised: December 2020

1. Introduction

 A. Opening Statement

This block of instruction is designed to provide the necessary skills for the perspective Inspector-Mechanic to obtain certification to properly conduct a North Carolina Safety Inspection in accordance with the rules and regulations outlined in 19A of the North Carolina Administrative Code and North Carolina General Statutes.

**SHOW SLIDE 2**

 B. Reasons

There are approximately 38,000 certified Inspection Mechanics performing state safety inspections at over 6,200 Official Inspection Stations in North Carolina. These inspections, when performed properly, help ensure the safety of vehicles traveling upon our highways by removing unsafe motor vehicles. These unsafe vehicles may not renew their registration until the identified deficiencies are corrected. If these inspections were not required, drivers could be operating

vehicles upon the roads and highways of our state with potential hazards that could jeopardize the safety of themselves and fellow motorists. To prevent this, the State of North Carolina enacted legislation in 1964 requiring motor vehicles registered in this state to be inspected for safety equipment compliance on an annual basis.

**SHOW SLIDE 3**

 C. Course Objective

 At the end of this block of instruction, the student will be able to achieve

 the following objectives in accordance with the information received during

 the instructional period.

 1. List the nine inspection areas inspector mechanics must check during a

 Safety inspection.

 2. Identify safety items required for a NC Safety Inspection.

 3. Determine what emissions control devices are required on a vehicle during

 a safety test by using the Emission Control System Applications Manual.

 4. Calibrate and utilize a headlight aimer.

 5. Test and utilize a window tint meter.

 6. Achieve a score of 80% or higher on a Division approved written exam.

**SHOW SLIDE 4**

II. Body

1. Station Qualifications

1. An Inspection Station is a place of business legally licensed by the Commissioner of Motor Vehicles to conduct inspections of motor vehicles as required by North Carolina General Statute. Each Inspection Station must be equipped with the proper equipment and tools in order to perform inspections, which include the following:

a) One (1) jack or lift with a minimum capacity of two (2) tons.

b) One (1) headlight tester to fit all headlights (mechanical, optical, or wall chart.) (See approved headlight testers, appendix)

c) One (1) workbench

d) One (1) creeper

**SHOW SLIDE 5**

e) One tire tread depth gauge (calibrated in 32nds of inch).

f) One Emissions Control Systems Application Manual or current computerized electronic software.

g) One approved Analyzer with current software.

h) One active dedicated telephone line with jack or internet access for Web Safety.

**SHOW SLIDE 6**

Additional Equipment:

 Inspection stations are not required to conduct inspections on vehicles equipped with after factory window tint. However, if inspections are conducted on these vehicles, the inspection station must have the following optional equipment.

 a) One (1) Approved Window Tint Tester

**SHOW SLIDE 7**

1. Technician Qualifications

To obtain certification to perform North Carolina Safety Inspections the perspective technician **must** meet all of the following requirements for initial and continued certification:

1. Have successfully completed an eight hour course approved by the Division that teaches students about the safety equipment a motor vehicle is required to have to pass a safety inspection and how to conduct a safety inspection using equipment to electronically transmit the vehicle information and inspection results.

2. Have a driver’s license that is valid in North Carolina.

3. Be of good character and have a reputation for honesty be able to successfully pass a background check as required by the Division.

**NOTE: Applicants that are denied licensing because of prior criminal history will have the opportunity to schedule a hearing with the Office of Administrative Hearings to request reinstatement.**

**NOTE: Certifications are valid for (4) years unless otherwise suspended or**

**revoked by the Division.**

**NOTE: An Out of State driver’s license is acceptable if the Inspector-**

**Mechanic resides in another state.**

**SHOW SLIDE 8**

 B. Inspection Fees

 North Carolina General Statute 20-183.7 dictates when a fee applies to an

inspection of a vehicle and the issuance of an electronic inspection

authorization.

1. The fee for performing an inspection of a vehicle applies when an inspection is performed, regardless of whether the vehicle passes the inspection. No taxes or shop fees can be added to the inspection cost
2. The fee for an electronic inspection authorization applies when an electronic inspection authorization is issued to a vehicle.

1. The following fees apply to an inspection of a vehicle and the issuance of an electronic inspection authorization:

Type Inspection Authorization Total

Safety Only $12.75 $ .85 $13.60

Emissions & Safety $23.75 $ 6.25 $30.00

1. The fee for inspecting after‑factory tinted windows shall be ten dollars ($10.00), and the fee applies only to an inspection performed with a light meter after a safety inspection mechanic determined that the window had after‑factory tint.
2. A safety inspection mechanic shall not inspect an after-factory tinted window of a vehicle for which the Division has issued a medical exception permit pursuant to G.S. 20-127(f).

**SHOW SLIDE 9**

 NOTE: All Vehicles that are within the three most recent model years AND have

 LESS THAN 70,000 miles.

 \* All Vehicles newer than 30 years old (Date manufactured)

 \* All Vehicles with Farm Tags.

 \* Electric / Plug in Vehicles. (Does not have the ability to be propelled by gasoline

 Or diesel fuel)

 \* Trailers with a gross weight of 4,000 pounds or more.

 \* Vehicles with a GVWR of more than 8,500 pounds.

Only Vehicles registered in one of the counties listed below will be subject to the emission inspection requirements in addition to safety:

 Alamance Buncombe Cabarrus Cumberland

 Davidson Durham Forsyth Franklin

 Gaston Guilford Johnston Lee

 Lincoln Mecklenburg New Hanover Onslow

 Randolph Rockingham Rowan Wake

 Union

**SHOW SLIDE 10**

C. Inspection Procedure

**19A NCAC 03D .0525 PRE-INSPECTION REQUIREMENTS**

Prior to performing an inspection, the Inspector-Mechanic shall:

1. Have all occupants leave the vehicle.
2. Ask the driver for a registration card and confirm the VIN matches the vehicle being inspected.

3. If the vehicle does not have a license plate, "NONE” shall be indicated. If

 inspected for a dealership, the dealer license number shall be indicated.

 Enter Dealer # followed by “D”

**NOTE: Vehicles may be inspected up to 90 days but not to exceed 90 days prior to the registration expiration.**

 **NOTE:** **Low Speed Vehicles registered for highway use require a safety only**

 **inspection. A low speed vehicle is a four wheeled electric vehicle that the top**

 **speed is greater than 20 mph but less than 25 mph.**

 **NOTE: Modified Utility Vehicle as defined in NC General Statute 20-4.01(27)**

 **requires a Safety Only Inspection.**

**SHOW SLIDE 11**

**NOTE: Driving the vehicle forward into the inspection area is**

**required by the Inspection Mechanic conducting the inspection for a**

**complete and proper inspection to be performed.**

**SHOW SLIDE 11**

D. Vehicle Components

 **The following vehicle components must be inspected during the North**

 **Carolina Vehicle Safety Inspection to ensure that they meet the minimum**

 **requirements.**

**SHOW SLIDE 12**

Safety Equipment Items

**SHOW SLIDE 13**

1. **19A NCAC 03D .0532  BRAKES**

No vehicle brakes shall be approved for an inspection unless the items indicated in this Rule are inspected and the vehicle’s brakes are found to meet the minimum requirements established in G.S. 20-124 and this Rule.

**SHOW SLIDE 14**

a) Footbrakes shall not be approved if:

(1) When applying brakes to moving vehicle, braking force is not distributed evenly to all wheels originally equipped with brakes by the manufacturer.  **(The inspection mechanic must drive vehicle to make this test.  The inspector may check the brakes while driving vehicle forward into the inspection area.)**

**SHOW SLIDE 15**

(2) There is audible indication **(metal on metal)** that the brake lining is worn to the extent that it is no longer serviceable.  **(The wheel must be pulled and the brake lining examined when this occurs.)**

**SHOW SLIDE 16**

(3) Pedal reserve is less than 1/3 of the total possible travel when the brakes are fully applied or does not meet the manufacturer's specification for power brakes or air brakes.

**SHOW SLIDE 17**

(4) The reservoir of the master cylinder is not full.  (Only brake fluid meeting SAE specifications for heavy duty hydraulic brake fluid shall be used when adding or changing brake fluid.)

 **NOTE: The inspection mechanic must remove the reservoir**

 **cap to verify fluid and level unless fill line is visible.**

**SHOW SLIDE 18**

(5) There is a visible leakage or audible seepage in hydraulic, vacuum or air lines and cylinders, or visible cracked, chafed, worn, or weakened hoses.

 **NOTE: Pay close attention to vehicles with oversized tires or rims because they may rub the brake hoses.**

**SHOW SLIDE 19**

(6) The vehicle has any part of the brake system removed or disconnected.

**SHOW SLIDE 20**

(7) The brake pedal moves slowly toward the toe-board (indicating fluid leakage) while pedal pressure is maintained for one minute.

**SHOW SLIDE 21**

1. Inspector-Mechanics are not expected to remove wheels in order to inspect the brakes.  (Except as provided in Sub-item (1)(b) of this Rule.)

**NOTE:** **Inspection mechanic must raise vehicle to get**

 **beneath to check underside.**

**SHOW SLIDE 22**

c) Handbrakes (auxiliary, parking or holding) shall not be approved if:

(1) There is no lever reserve when the brake is fully applied.

**NOTE: Some Chevrolet Trucks/SUVs will have no lever**

**reserve from the factory.**

**SHOW SLIDE 23**

(2) Cables are visibly frayed or frozen, or there are missing or defective cotter pins or broken or missing retracting springs or worn rods or couplings.

**SHOW SLIDE 24**

(3) The operating mechanism, when fully applied, fails to hold the brakes in the applied position without manual effort.

**SHOW SLIDE 25**

(4) When emergency or handbrakes are applied, they fail to hold vehicle.

**NOTE: Emergency brake should be tested by setting**

**the brake with the vehicle running and in gear. Do not**

**depress the accelerator while performing this test.**

**SHOW SLIDE 26**

 **NOTE: The illumination of the “ABS” light does not constitute a**

 **failure, unless the ABS unit is leaking or damaged. If there is an**

 **electrical malfunction of the ABS system the manufacture is required to**

 **use the service brake as a “back-up plan”.**

**SHOW SLIDE 27**

1. **G.S. 20**-**124. Brakes.**
2. (a) Every motor vehicle when operated upon a highway shall be equipped with brakes adequate to control the movement of and to stop such vehicle or vehicles, and such brakes shall be maintained in good working order and shall conform to regulations provided in this section.
3. (b) Repealed by Session Laws 1973, c. 1330, s. 39.

c) (c) Every motor vehicle when operated on a highway shall be equipped with brakes adequate to control the movement of and to

stop and hold such vehicle and shall have all originally equipped brakes in good working order, including two separate means of applying the brakes. If these two-separate means of applying the brakes are connected in any way, they shall be so constructed that failure of any one part of the operating mechanism shall not leave the motor vehicle without brakes.

d) (d) Every motorcycle and every motor-driven cycle when operated upon a highway shall be equipped with at least one brake which may be operated by hand or foot.

e) (e) Motor trucks and tractor-trucks with semitrailers attached shall be capable of stopping on a dry, hard, approximately level highway free from loose material at a speed of 20 miles per hour within the following distances: Thirty feet with both hand and service brake applied simultaneously and 50 feet when either is applied separately, except that vehicles maintained and operated permanently for the transportation of property and which were registered in this or any other state or district prior to August, 1929, shall be capable of stopping on a dry, hard, approximately level highway free from loose material at a speed of 20 miles per hour within a distance of 50 feet with both hand and service brake

applied simultaneously, and within a distance of 75 feet when either applied separately.

(e1) Every motor truck and truck-tractor with semitrailer attached shall be equipped with brakes acting on all wheels, except trucks and truck-tractors having three or more axles need not have brakes on the front wheels if manufactured prior to July 25, 1980. However, such trucks and truck-tractors must be capable of complying with the performance requirements of G.S. 20-124(e).

f) Every semitrailer, or trailer, or separate vehicle, attached by a drawbar or coupling to a towing vehicle, and having a gross weight of two tons, and all house trailers of 1,000 pounds gross weight or more, shall be equipped with brakes controlled or operated by the driver of the towing vehicle, which shall conform to the specifications set forth in subsection (e) of this section and shall be of a type approved by the Commissioner. It shall be unlawful for any person or corporation engaged in the business of selling house trailers at wholesale or retail to sell or offer for sale any house trailer which is not equipped with the brakes required by this subsection. This subsection shall not apply to house trailers being

used as dwellings, or to house trailers not intended to be used or

towed on public highways and roads. This subsection shall not

apply to house trailers with a manufacturer's certificate of origin dated prior to December 31, 1974.

g) The provisions of this section shall not apply to a trailer when used by a farmer, a farmer's tenant, agent, or employee if the trailer is exempt from registration by the provisions of G.S. 20-51. This exemption does not apply to trailers that are equipped with brakes from the manufacturer and that are manufactured after October 1, 2009.

h) From and after July 1, 1955, no person shall sell or offer for sale for use in motor vehicle brake systems in this State any hydraulic brake fluid of a type and brand other than those approved by the Commissioner of Motor Vehicles. From and after January 1, 1970, no person shall sell or offer for sale in motor vehicle brake systems any brake lining of a type or brand other than those approved by the Commissioner of Motor Vehicles. Violation of the provisions of this subsection shall constitute a Class 2 misdemeanor. (1937, c. 407, s. 87; 1953, c. 1316, s. 2; 1955, c. 1275; 1959, c. 990; 1965, c. 1031; 1967, c. 1188; 1969, cc. 787, 866; 1973, c. 1203; c. 1330, s. 39; 1993, c. 539, s. 359; 1994, Ex. Sess., c. 24, s. 14(c); 2009-376, ss. 10, 11.)

**SHOW SLIDE 28**

 **19A NCAC 03D .0533 LIGHTS (Headlights)**

Every vehicle upon a highway within this State Shall be equipped with lighted headlamps and rear lamps as required for different classes of vehicles. As a “Rule of Thumb” for lights being inspected. If the lights were installed by the manufacturer, they are approved by the Commissioner. Fog lamps or auxiliary lamps are not required and are not part of the safety inspection.

**SHOW SLIDE 29**

Headlights shall not be approved if:

a) There are not at least **two** headlamps (at least four on dual headlamp systems which require four units) on all self-propelled vehicles **except that motorcycles and motor driven cycles need only one.**

**SHOW SLIDE 30**

b) The lens produces other than a white or yellow light.

 **NOTE: Colored headlamp bulbs are illegal and constitute as a failure.**

 **SHOW SLIDE 31**

c) Any lens is cracked, broken, discolored, missing, or rotated away

 from the proper position, or any reflector is not clean and bright.

**SHOW SLIDE 32**

d) The high beam-low beam dimmer switch does not operate properly

 or the high beam indicator light does not burn on vehicles

 manufactured after January 1, 1956.

 **NOTE: Low speed vehicles are not required to have a high beam**

 **indicator.**

**SHOW SLIDE 33**

e) Lights can be moved easily by hand, due to a broken fender or loose support, or if a good ground is not made by the mounting.

**SHOW SLIDE 34**

f) Foreign materials (such as shields, half of lens painted) are placed on the headlamp lens that interferes with light beam of lamp.

**SHOW SLIDE 35**

g) Lights are improperly aimed. **A light testing machine or light testing chart must be used to determine if a vehicle’s lights are improperly aimed. Headlamps must be checked during each inspection by use of approved headlight aimer, undamaged on-board aimer or wall chart.**

**SHOW SLIDE 36**

h) Lights project a dazzling or glaring light when on low beam.

 **NOTE: 20-129(b) Headlamps comply with the provisions prohibiting**

 **glaring and dazzling lights if none of the main bright portion of the**

 **headlamp beams rise above 42 inches, 75 feet ahead of the vehicle.**

**SHOW SLIDE 37**

Headlight Aiming

**SHOW SLIDE 38**

Headlight Aiming Video

**SHOW SLIDE 39**

 **Due to the increased intensity and performance of modern**

 **Headlights it is imperative that the headlights on each vehicle be checked.**

 **Headlamps must be checked during each inspection by use of**

 **approved headlight aimer, undamaged on-board aimer or wall**

 **chart.**

 **Failing to properly test the vehicle headlight adjustment could**

 **result in a criminal fine, civil fine or both.**

**SHOW SLIDE 40**

 **G.S. 20**-**131(a) Headlights on a Motor Vehicle**

 The headlamps of motor vehicles shall be so constructed, arranged, and adjusted that, except as provided in subsection (c) of this section, they will at all times mentioned in G.S. 20-129, and under normal atmospheric conditions and on a level road, produce a driving light sufficient to render clearly discernible a person 200 feet ahead, but any person operating a motor vehicle upon the highways, when meeting another vehicle, shall so control the lights of the vehicle operated by him by shifting, depressing, deflecting, tilting, or dimming the headlight beams in such manner as shall not project a glaring or dazzling light to persons within a distance of 500 feet in front of such headlamp. Every new motor vehicle, other than a motorcycle or motor-driven cycle, registered in this State after January 1, 1956, which has multiple-beam road-lighting equipment shall be equipped with a beam indicator, which shall be lighted whenever the uppermost distribution of light from the headlamps is in use, and shall not otherwise be lighted. Said indicator shall be so designed and located that when lighted it will be readily visible without glare to the driver of the vehicle so equipped.

b) (b) Headlamps shall be deemed to comply with the foregoing provisions prohibiting glaring and dazzling lights if none of the main bright portion of the headlamp beams rises above a horizontal plane passing through the lamp centers parallel to the level road upon which the loaded vehicle stands, and in no case higher than 42 inches, 75 feet ahead of the vehicle.

1. (c) Whenever a motor vehicle is being operated upon a highway, or portion thereof, which is sufficiently lighted to reveal a person on the highway at a distance of 200 feet ahead of the vehicle, it shall be permissible to dim the headlamps or to tilt the beams downward or to substitute therefor the light from an auxiliary driving lamp or pair of such lamps, subject to the restrictions as to tilted beams and auxiliary driving lamps set forth in this section.
2. (d) Whenever a motor vehicle meets another vehicle on any highway it shall be permissible to tilt the beams of the headlamps downward or to substitute therefor the light from an auxiliary driving lamp or pair of such lamps subject to the requirement that

the tilted headlamps or auxiliary lamp or lamps shall give sufficient illumination under normal atmospheric conditions and on a level road to render clearly discernible a person 75 feet ahead, but shall not project a glaring or dazzling light to persons in front of the vehicle: Provided, that at all times required in G.S. 20-129 at least two lights shall be displayed on the front of and on opposite sides of every motor vehicle other than a motorcycle, road roller, road machinery, or farm tractor.

1. (e) No city or town shall enact an ordinance in conflict with this section. (1937, c. 407, s. 94; 1939, c. 351, s. 1; 1955, c. 1157, ss. 6, 7.)

**SHOW SLIDE 41**

**Rear Lights shall conform to the requirements of G.S. 20-129(d*).***

a) All original equipped rear lamps or the equivalent are not in working order.

**SHOW SLIDE 42**

b) The lens is cracked, discolored, or of a color other than red.

 **NOTE: The use of repair tape is not acceptable to pass the safety**

 **inspection.**

**SHOW SLIDE 43**

c) They do not operate properly and project white light on the license plate.

 **NOTE: License Plate lights must be white in color and illuminate the tag to be read 50 feet away.**

**SHOW SLIDE 44**

d) They are not securely mounted. \* No magnetic or “temporary”

 mounting is acceptable.

**SHOW SLIDE 45**

 **20**-**129. Required lighting equipment of vehicles.**

1. (d) Rear Lamps. – Every motor vehicle, and every trailer or semitrailer attached to a motor vehicle and every vehicle which is being drawn at the end of a combination of vehicles, shall have all originally equipped rear lamps or the equivalent in good working order, which lamps shall exhibit a red light plainly visible under normal atmospheric conditions from a distance of 500 feet to the rear of such vehicle. One rear lamp or a separate lamp shall be so constructed and placed that the number plate carried on the rear of such vehicle shall under like conditions be illuminated by a white light as to be read from a distance of 50 feet to the rear of such vehicle. Every trailer or semitrailer shall carry at the rear, in addition to the originally equipped lamps, a red reflector of the type which has been approved by the Commissioner and which is so located as to height and is so maintained as to be visible for at least 500 feet when opposed by a motor vehicle displaying lawful undimmed lights at night on an unlighted highway.
2. Notwithstanding the provisions of the first paragraph of this subsection, it shall not be necessary for a trailer weighing less than

4,000 pounds, or a trailer described in G.S. 20-51(6) weighing less than 6,500 pounds, to carry or be equipped with a rear lamp, provided such vehicle is equipped with and carries at the rear two red reflectors of a diameter of not less than three inches, such reflectors to be approved by the Commissioner, and which are so designed and located as to height and are maintained so that each reflector is visible for at least 500 feet when approached by a motor vehicle displaying lawful undimmed headlights at night on an unlighted highway.

1. The rear lamps of a motorcycle shall be lighted at all times while the motorcycle is in operation on highways or public vehicular areas.

**SHOW SLIDE 46**

**Stoplights shall conform to the requirements of G.S. 20-129(g**

 **A stoplight shall not be approved if:**

a) The lens is cracked, discolored or of a color other than red or amber.  Minor cracks on lenses shall not lead to disapproval unless water is likely to short out the bulb.

**SHOW SLIDE 47**

b) It does not come on when pressure is applied to foot brake.

**SHOW SLIDE 48**

c) It is not securely mounted so as to project a light to the rear.

**SHOW SLIDE 49**

 **G.S. 20**-**129. Required lighting equipment of vehicles**

(g) No person shall sell or operate on the highways of the State any motor vehicle manufactured after December 31, 1955, and on or before December 31, 1970, unless it shall be equipped with a stop lamp on the rear of the vehicle. No person shall sell or operate on the highways of the State any motor vehicle, manufactured after December 31, 1970, unless it shall be equipped with stop lamps, ONE ON EACH SIDE of the rear of the vehicle.

**SHOW SLIDE 50**

No person shall sell or operate on the highways of the State any motorcycle or motor-driven cycle manufactured after December 31, 1955, unless it shall be equipped with a stop lamp on the rear of the motorcycle or motor-driven cycle.

The stop lamps shall emit, reflect, or display a red or amber light visible from a distance of not less than 100 feet to the rear in normal sunlight, and shall be actuated upon application of the service (foot) brake. The stop lamps may be incorporated into a unit with one or more other lamps.

In addition to other equipment required by this Chapter, the following vehicles shall be equipped as follows:

**SHOW SLIDE 51**

a) (1) On every bus or truck, whatever its size, there shall be the following:

On the rear, two reflectors, one at each side, and one stoplight.

b) (2) On every bus or truck 80 inches or more in overall width, in addition to the requirements in subdivision (1):

(1) On the front, two clearance lamps, one at each side.

(2) On the rear, two clearance lamps, one at each side.

(3) On each side, two side marker lamps, one at or near the front and one at or near the rear.

(4) On each side, two reflectors, one at or near the front and one at or near the rear.

c) (3) On every truck tractor:

(1) On the front, two clearance lamps, one at each side.

(2) On the rear, one stoplight.

1. (4) On every trailer or semitrailer having a gross weight of 4,000 pounds or more:
2. On the front, two clearance lamps, one at each side.
3. On each side, two side marker lamps, one at or near the front and one at or near the rear.
4. On each side, two reflectors, one at or near the front and one at or near the rear.

(4) On the rear, two clearance lamps, one at each side, also two reflectors, one at each side, and one stoplight.

1. (5) On every pole trailer having a gross weight of 4,000 pounds or more:
2. On each side, one side marker lamp and one clearance lamp which may be in combination, to show to the front, side and rear.
3. On the rear of the pole trailer or load, two reflectors, one at each side.
4. (6) On every trailer, semitrailer or pole trailer having a gross weight of less than 4,000 pounds:

On the rear, two reflectors, one on each side. If any trailer or semitrailer is so loaded or is of such dimensions as to obscure the stoplight on the towing vehicle, then such vehicle shall also be equipped with one stoplight.

1. (7) Front clearance lamps and those marker lamps and reflectors mounted on the front or on the side near the front of a vehicle shall display or reflect an amber color.
2. (8) Rear clearance lamps and those marker lamps and reflectors mounted on the rear or on the sides near the rear of a vehicle shall display or reflect a red color.
3. (9) Brake lights (and/or brake reflectors) on the rear of a motor vehicle shall have red lenses so that the light displayed is red. The light illuminating the license plate shall be white. All other lights shall be white, amber, yellow, clear or red.
4. (10) On every trailer and semitrailer which is 30 feet or more in length and has a gross weight of 4,000 pounds or more, one combination marker lamp showing amber and mounted on the bottom side rail at or near the center of each side of the trailer. (1955, c. 1157, s. 4; 1969, c. 387; 1983, c. 245; 1987, c. 363, s. 1; 2000-159, s. 10.)

**SHOW SLIDE 52**

 **Parking Lights**

Parking lights shall conform to the requirements of G.S. 20-134**.**

 A vehicle shall not be approved if parking lights are not working. Parking lights on the front must be white or amber, on the rear red only.

 **NOTE: A vehicle shall not be approved if parking lights are not**

 **working.**

**SHOW SLIDE 53**

 **Back- Up Lamps**

Any motor vehicle may be equipped with not more than two back-up lamps either separately or in combination with other lamps but any such back-up lamp shall not be lighted when the motor vehicle is in a forward motion nor shall the back-up lamp emit any color other than white.

**A back-up lamp is not a mandatory requirement of the Safety Inspection.**

**SHOW SLIDE 54**

Condensation inside any lenses alone does NOT constitute a failure. Disapprove if there is standing water inside the lens. Reflectors are not required

 equipment on passenger vehicles.

**SHOW SLIDE 55**

 **19A NCAC 03D .0534 HORN**

The horn shall not be approved if:

1. (1) It will not emit a sound audible for a distance of at least 200 feet, or it emits an unusually loud or harsh sound.  Original equipment in working order will meet these requirements.

**SHOW SLIDE 56**

1. (2) It has frayed, broken, or missing wiring; if wiring harnesses are broken or missing; if horn button is not mounted securely and in a

position which is easily accessible to the driver; or if the horn is not securely mounted to the motor vehicle.

**SHOW SLIDE 57**

1. (3) Operation of the horn interferes with the operation of any other mechanism.

**NOTE: Vehicles equipped with sirens shall not be approved**

**unless they are within the class listed in G.S. 20-125(b) as being**

**authorized to­ carry a siren. Musical horns are not accepted as**

**a replacement for the factory horn**

**SHOW SLIDE 58**

15. **G.S. 20**-**125. Horns and warning devices.**

(a) Every motor vehicle when operated upon a highway shall be equipped with a horn in good working order capable of emitting sound audible under normal conditions from a distance of not less than 200 feet, and it

shall be unlawful, except as otherwise provided in this section, for any vehicle to be equipped with or for any person to use upon a vehicle any siren, compression or spark plug whistle or for any person at any time to use a horn otherwise than as a reasonable warning or to make any unnecessary or unreasonable loud or harsh sound by means of a horn or other warning device. All such horns and warning devices shall be

maintained in good working order and shall conform to regulation not inconsistent with this section to be promulgated by the Commissioner.

**SHOW SLIDE 59**

 **19A NCAC 03D .0535 STEERING MECHANISM**

**NOTE:** **The Inspector-Mechanic must ALWAYS raise the vehicle to**

**check the steering mechanism. Pits are OK but, you MUST raise the**

**tires off the floor.**

**SHOW SLIDE 60**

The steering mechanism shall not be approved if:

a) (1) With front wheels in straight ahead position there is more than three inches of free play in steering wheels up to 18 inches in diameter or more than four inches of free play in steering wheels over 18 inches in diameter.  If vehicle is equipped with power steering, the engine must be operating.

**SHOW SLIDE 61**

b) (2) Either front or rear springs are noticeably sagging or broken.

**SHOW SLIDE 62**

c) (3) The front wheels or front end assembly is bent or twisted or bolts, nuts or rivets are loose or missing.

 **NOTE: To fail a vehicle for missing lug nuts or missing studs is the**

 **discretion of the inspection mechanic.**

**SHOW SLIDE 63**

1. (4) Power steering system shows visible leaks, or the power steering belt is loose or worn.

**NOTE: A Rack-N-Pinion steering mechanism with “morning sickness” fails ONLY if tightness or slippage occurs during the inspection.**

**SHOW SLIDE 64**

 **G.S. 20**-**123.1. STEERING MECHANISM**

The steering mechanism of every self-propelled motor vehicle operated on the highway shall be maintained in good working order, sufficient to enable the operator to control the vehicle's movements and to maneuver it safely. (1957, c. 1038, s. 3.)

**SHOW SLIDE 65**

 **19A NCAC 03D .0536 WINDSHIELD WIPER**

Windshield wipers shall not be approved if:

a) (1) The vehicle is not equipped with a windshield wiper or wipers, provided the vehicle has a windshield.

**SHOW SLIDE 66**

b) (2) The wiper or wipers do not operate freely.

c) (3) The wiper controls are not so constructed and located that the driver may operate them.

**SHOW SLIDE 67**

d) (4) The wiper or wipers are not adequate to clean rain, snow and other matter from the windshield.

e) (5) Parts of blades or arms are missing or show evidence of damage.

**SHOW SLIDE 68**

 **G.S. 20**-**127. Windows and windshield wipers.**

A vehicle that is operated on a highway and has a windshield shall have a windshield wiper to clear rain or other substances from the windshield in front of the driver of the vehicle and the windshield wiper shall be in good working order. If a vehicle has more than one windshield wiper to clear substances from the windshield, all the windshield wipers shall be in good working order.

**SHOW SLIDE 69**

 **19A NCAC 03D .0537 DIRECTIONAL SIGNALS**

**NOTE:** **G.S. 20-125.1 requires all vehicles beginning with 1954 models**

**except motorcycles to be equipped with turn signals.**

Vehicles required to have signals shall be inspected and disapproved if:

**SHOW SLIDE 70**

a) (1) Signals are not present and of a type approved by the Commissioner as specified in G.S. 20-125.1. Original directional signals on vehicles manufactured after July 1, 1953, are considered to be of a type approved by the Commissioner.  Such signals shall be those which will allow the operator of the vehicle to clearly

show another operator approaching from a distance of 200 feet from the front or rear his intention to turn the vehicle.

**SHOW SLIDE 71**

b) (2) All lights do not operate properly, or if any lenses are broken, missing, or do not fit properly.

c) (3) Signal lens color is other than red or amber on the rear and other than white or amber on the front.

**SHOW SLIDE 72**

d) (4) Lamps are not securely mounted or wiring and connections are not in good condition.

1. (5) Signals are not visible from front or back due to faulty or damaged

 mounting or due to manner in which mounted.

**SHOW SLIDE 73**

1. (6) Switch is not so located as to be convenient for the driver to operate and so that its operation does not interfere with operation of other mechanisms.

**SHOW SLIDE 74**

 **G.S. 20**-**125.1. Directional signals.**

1. (a) It shall be unlawful for the owner of any motor vehicle of a changed model or series designation indicating that it was manufactured or assembled after July 1, 1953, to register such vehicle or cause it to be registered in this State, or to obtain, or cause to be obtained in this State registration plates therefor, unless such vehicle is equipped with a mechanical or electrical signal device by which the operator of the vehicle may indicate to the operator of another vehicle, approaching from either the front or rear and within a distance of 200 feet, his intention to turn from a direct line. Such signal device must be of a type approved by the Commissioner of Motor Vehicles.

b) (b) It shall be unlawful for any dealer to sell or deliver in this State any motor vehicle of a changed model or series designation indicating that it was manufactured or assembled after July 1, 1953, if he knows or has reasonable cause to believe that the purchaser of such vehicle intends to register it or cause it to be

registered in this State or to resell it to any other person for registration in and use upon the highways of this State, unless such motor vehicle is equipped with a mechanical or electrical signal device by which the operator of the vehicle may indicate to the operator of another vehicle, approaching from either of the front or rear or within a distance of 200 feet, his intention to turn from a direct line. Such signal device must be of a type approved by the Commissioner of Motor Vehicles: Provided that in the case of any

motor vehicle manufactured or assembled after July 1, 1953, the signal device with which such motor vehicle is equipped shall be presumed prima facie to have been approved by the Commissioner of Motor Vehicles. Irrespective of the date of manufacture of any motor vehicle a certificate from the Commissioner of Motor Vehicles to the effect that a particular type of signal device has been approved by his Division shall be admissible in evidence in all the courts of this State.

 **SHOW SLIDE 75**

c) (c) Trailers satisfying the following conditions are not required to be equipped with a directional signal device:

(1) The trailer and load does not obscure the directional signals of the towing vehicle from the view of a driver approaching from the rear and within a distance of 200 feet;

(2) The gross weight of the trailer and load does not exceed 4,000 pounds.

d) (3) Nothing in this section shall apply to motorcycles. (1953, c. 481; 1957, c. 488, s. 1; 1963, c. 524; 1969, c. 622; 1975, c. 716, s. 5.)

**SHOW SLIDE 76**

 **19A NCAC 03D .0538 TIRES**

A vehicle shall be disapproved if:

a) (1) Any tire has cuts or snags that expose the cords.

 **NOTE: Foreign objects in tires and dry rotting that constitute**

 **failure is at the discretion of the inspection mechanic.**

**SHOW SLIDE 77**

b) (2) Any tire has a visible bump, bulge, or knot apparently related to tread or sidewall separation or partial failure of the tire structure including bead area.

**SHOW SLIDE 78**

Tire depth shall be measured by a tread depth gauge which shall be of a type calibrated in thirty-seconds of an inch.  Readings shall be taken in two adjacent tread grooves of the tire around the circumference of the tire.

Readings for a tire with a tread design that does not have two adjacent grooves near the center shall be taken at the center of the tire around the

circumference of the tire.  **Each tire must be completely lifted from the ground for an inspection to be performed.**

 **G.S. 20**-**122.1. Motor vehicles to be equipped with safe tires.**

a) (a) Every motor vehicle subject to safety equipment inspection in this State and operated on the streets and highways of this State shall be equipped with tires which are safe for the operation of the

motor vehicle and which do not expose the public to needless hazard. Tires shall be considered unsafe if cut so as to expose tire cord, cracked so as to expose tire cord, or worn so as to expose tire cord or there is a visible tread separation or chunking or the tire

 has less than two thirty-seconds inch tread depth at two or more locations around the circumference of the tire in two adjacent major tread grooves, or if the tread wear indicators are in contact with the roadway at two or more locations around the circumference of the tire in two adjacent major tread grooves: Provided, the two thirty-seconds tread depth requirements of this section shall not apply to dual wheel trailers. For the purpose of this section, the following definitions shall apply:

(1) "Chunking" – separation of the tread from the carcass in particles which may range from very small size to several square inches in area.

(2) "Cord" – strands forming a ply in a tire.

(3) "Tread" – portion of tire which comes in contact with road.

(4) "Tread depth" – the distance from the base of the tread design to the top of the tread.

b) (a1) Any motor vehicle that has a GVWR of at least 10,001 pounds or more and is operated on the streets or highways of this State shall be equipped with tires that are safe for the operation of the vehicle and do not expose the public to needless hazard. A tire is unsafe if any of the following applies:

**SHOW SLIDE 79**

24.  **19A NCAC 03D .0539 TIRES – DEFINITIONS**

As used in this and the preceding Rule, these terms have the following meaning:

a) (1) Rim is a metal support for the tire or tire and tube assembly on the wheel.  Tire beads are seated on the rim.

b) (2) Bead is that part of the tire which is shaped to fit the rim.  The bead is made of high tensile steel wires wrapped and reinforced by the plies.

c) (3) Sidewall is that portion of the tire between tread and bead.

d) (4) Cord is made from textile, steel wire strands forming the plies or other structure of the tires.

e) (5) Ply is layers of rubber coated parallel cords forming the tire body.

f) (6) Rib is the tread section running circumferentially around the tire.

**SHOW SLIDE 80**

g) (7) Groove is the space between two tread ribs.  A tire shall not be approved if there is less than 2/32 inch tread at two or more locations around the circumference of the tire in two adjacent major tread grooves or if the tread wear indicators are in contact with the roadway at two or more locations around the circumference of the tire in two adjacent major tread grooves.

**SHOW SLIDE 81**

 **19A NCAC 03D .0540 REAR VIEW MIRRORS**

Rear view mirrors shall not be approved if:

a) (1) Loosely mounted.

b) (2) Forward vision of the device is obstructed by mirror assembly.

c) (3) They do not provide a clear view of the highway to the rear.

d) (4) Cracked, broken, have sharp edges or cannot be cleaned such that rear vision is not obscured.

**SHOW SLIDE 82**

e) (5) Very difficult to adjust or they will not maintain a set adjustment.

f) (6) Bus, truck or truck-tractor with a GVWR of 10,001 pounds or more is not equipped with a rear vision mirror on each side.

g) (7) Vehicles manufactured, assembled, or first sold after January 1, 1966 are not equipped with outside rear view mirrors on the driver's side.

**SHOW SLIDE 83**

 If a vehicle is loaded or configured in such a way that the inside mirror is obstructed, a passenger side outside mirror would be required.

The passenger’s outside rearview mirror is NOT required equipment on passenger vehicles if an inside rearview mirror is present.

**SHOW SLIDE 84**

 **G.S. 20**-**126. Mirrors.**

a) (a) No person shall drive a motor vehicle on the streets or highways of this State unless equipped with an inside rearview mirror of a type approved by the Commissioner, which provides the driver with a clear, undistorted, and reasonably unobstructed view of the highway to the rear of such vehicle; provided, a vehicle

so constructed or loaded as to make such inside rearview mirror ineffective may be operated if equipped with a mirror of a type to

be approved by the Commissioner located so as to reflect to the

driver a view of the highway to the rear of such vehicle. A violation of this subsection shall not constitute negligence per se in civil actions. Farm tractors, self-propelled implements of husbandry and construction equipment and all self-propelled vehicles not subject to registration under this Chapter are exempt from the provisions of this section. Provided that pickup trucks equipped with an outside rearview mirror approved by the Commissioner shall be exempt from the inside rearview mirror provision of this section. Any inside mirror installed in any motor vehicle by its manufacturer shall be deemed to comply with the provisions of this subsection.

b) (b) It shall be unlawful for any person to operate upon the

highways of this State any vehicle manufactured, assembled or first sold on or after January 1, 1966 and registered in this State unless such vehicle is equipped with at least one outside mirror mounted on the driver's side of the vehicle. Mirrors herein required shall be of a type approved by the Commissioner.

c) (c) No person shall operate a motorcycle upon the streets or highways of this State unless such motorcycle is equipped with a rearview mirror so mounted as to provide the operator with a clear, undistorted and unobstructed view of at least 200 feet to the rear of the motorcycle. No motorcycle shall be registered in this State after January 1, 1968, unless such motorcycle is equipped with a rearview mirror as described in this section. Violation of the provisions of this subsection shall not be considered negligence per se or contributory negligence per se in any civil action. (1937, c. 407, s. 89; 1965, c. 368; 1967, c. 282, s. 1; c. 674, s. 2; c. 1139; 2002-159, ss. 22(a), 22(b).)

**SHOW SLIDE 85**

**19A NCAC 03D .0541 EXHAUST EMISSION CONTROLS**

Exhaust Emission Controls consist of not only the muffler but the exhaust pipes, the exhaust manifold and in some cases the resonator. All parts of the system working together cause the energy created from the exhaust gases to dissipate and thus, reducing the noise that otherwise would be tremendous.

**SHOW SLIDE 86**

1. (a)  An exhaust emission shall not be approved if the vehicle is a 1968 year model or newer and any of the visible emission control devices placed thereon by the manufacturer are missing, disconnected, made inoperative or have been altered without approval of the Department of Environment, Health, and Natural Resources.

**SHOW SLIDE 87**

2. (b)  If the unleaded gas restrictor on a vehicle manufactured after model year 1967 has been altered or removed a new or reconditioned catalytic

converter and unleaded gas restrictor must be replaced before the vehicle passes inspection.

**SHOW SLIDE 88**

3. **An exhaust system shall not be approved if:**

a) (1) The vehicle has no muffler.

b) (2) The muffler, exhaust or tail pipes have leaking joints.

c) (3) The exhaust or tail pipes have holes, leaking seams or leaking patches on muffler.

d) (4) The tail pipe end is pinched.

e) (5) The exhaust system is equipped with muffler cut-out or muffler by-pass.

f) (6) Any part of the system passes through the passenger

 compartment.

**SHOW SLIDE 89**

1. **G.S. 20**-**128. Exhaust system and emissions control devices.**

a) (a) No person shall drive a motor vehicle on a highway unless such motor vehicle is equipped with a muffler, or other exhaust system of the type installed at the time of manufacture, in good working order and in constant operation to prevent excessive or unusual noise, annoying smoke and smoke screens.

b) (b) It shall be unlawful to use a "muffler cut-out" on any motor vehicle upon a highway.

c) (c) No motor vehicle registered in this State that was manufactured after model year 1967 shall be operated in this State unless it is equipped with emissions control devices that were installed on the vehicle at the time the vehicle was manufactured and these devices are properly connected.

d) (d) The requirements of subsection (c) of this section shall not apply if the emissions control devices have been removed for the purpose of converting the motor vehicle to operate on natural or liquefied petroleum gas or other modifications have been made in order to reduce air pollution and these modifications are approved by the Department of Environment and Natural Resources. (1937, c. 407, s. 91; 1971, c. 455, s. 1; 1983, c. 132; 1989, c. 727, s. 9; 1997-443, s. 11A.119(a); 2000-134, s. 6.)

**SHOW SLIDE 90**

 These devices include:

a) (1) Catalytic converter

**SHOW SLIDE 91**

b) (2) Unleaded gas restrictor

c) (3) Air pump system - There are 2 types of Air Pumps Systems.

**SHOW SLIDE 92**

d) (4) EGR valve - EGR Valves are either vacuum operated or electrically operated.

**SHOW SLIDE 93**

e) (5) PCV valve

**SHOW SLIDE 94**

f) (6) Thermostatic air cleaner

**SHOW SLIDE 95**

g) (7) Evaporative emission system

**SHOW SLIDE 96**

h) (8) Oxygen sensor

**SHOW SLIDE 97**

 **G.S. 20**-**183.8A. Civil penalties against motorists for emissions violations.**

1. (a) Civil Penalties. – The Division must assess a civil penalty against a person who owns or leases a vehicle that is subject to an inspection and who engages in any of the emissions violations set out in this subsection. As provided in G.S. 20-54, the registration of a vehicle may not be renewed until a penalty imposed under this subsection has been paid. The civil penalties and violations are as follows.

 a) Fifty dollars ($50.00) for failure to have the vehicle inspected within four months after it is required to be inspected under this Part.

1. Two hundred fifty dollars ($250.00) for instructing or allowing a person to tamper with an emission control device of the vehicle so as to make the device inoperative or fail to work properly.

c) Two hundred fifty dollars ($250.00) for incorrectly stating the vehicle's county of registration to avoid having an emissions inspection of the vehicle.

**SHOW SLIDE 98**

 Vehicles are required to have emission control devices as installed by the manufacturer to be present, connected and in a visually operative condition.

The Emission Control System Applications Manual, Mitchell on Demand and All Data are examples of sources to determine what the manufacturer installed on most vehicles.

**SHOW SLIDE 99**

 **19A NCAC 03D .0544   SAFETY INSPECTION OF MOTORCYCLES**

 **The Inspector must drive the motorcycle into the inspection bay and the motorcycle must be lifted.**

 **A motorcycle endorsement is not required to complete a safety inspection of a motorcycle.**

**SHOW SLIDE 100**

 **G.S. 20-124 Brakes (Motorcycles)**

 d) Every motorcycle and every motor‑driven cycle when operated upon a

 highway shall be equipped with at least one brake which may be operated

 by hand or foot**.**

**SHOW SLIDE 101**

1. (a) Motorcycle brakes shall fail safety inspection if:

1. (1) When applying brakes to moving vehicle, there is insufficient force to stop the vehicle.

**NOTE: A removed front brake set (1 of 2), usually for racing does not constitute a failure since motorcycles are required to have only 1 front or 1 rear brake operated by hand or foot.**

b) (2)  Brakes are worn in such a manner that there is an uneven braking force.

c) (3) There is an audible or visual indication that the brake lining is worn to the extent it is no longer serviceable.

 d) (4) There is less than one-third reserve in either footbrake or handbrake

 total possible travel when the brakes are fully applied.

**SHOW SLIDE 102**

e) (5) Reservoirs of braking cylinders are not full.

 **NOTE: The Inspection Mechanic is required to remove the master cylinder cap to verify brake fluid level if the level is not visible from the containers outside.**

f) (6) There is a visible leakage of fluid from any brake line or brake component.

g) (7) Handbrake cables are frayed, broken, or frozen or linkage is effective.

**NOTE: A removed front brake set (1 of 2), usually for racing does not constitute a failure since motorcycles are required to have only 1 front or 1 rear brake operated by hand or foot.**

**SHOW SLIDE 103**

 **20-129(c) Headlamps on Motorcycles**

 Every motorcycle shall be equipped with at least one and not more than two

 headlamps which shall comply with the requirements and limitations set forth

 in G.S. 20‑131 or 20‑132. The headlamps on a motorcycle shall be lighted at

 all times while the motorcycle is in operation on highways or public vehicular

 areas**.**

**SHOW SLIDE 104**

2. b) Motorcycle headlamps shall fail safety inspection if:

1. (1) Headlamp does not operate properly.

b) (2) There is more than (2) headlamps connected on a single switch.

c) (3) Headlamp is cracked or has holes which allow entry of water.

d) (4) There is standing water in the headlamp.

e) (5) Headlamp is out of proper aim.

 **NOTE: Motorcycle headlamp modulators are allowed by**

 **Federal Code 49 CFR 571.108**

**SHOW SLIDE 105**

 Harleys, Hondas, and some Kawasaki’s have what appear to be 3 or 4 headlamps.

 The 2 outer lamps are not headlamps; they are driving lamps and do not constitute

 a failure.

 Motorcycles are not required to have high beam headlamps or high beam

 indicators.

**SHOW SLIDE 106**

3. (c) Motorcycle rear lamps shall fail safety inspection if:

a) (1) They do not operate.

b) (2) Light is a color other than red.

c) (3) Light is cracked or broken and allows entry of water.

d) (4) There is standing water in the lens.

e) (5) Lamp is not securely mounted.

f) (6) Wiring is broken or frayed.

**SHOW SLIDE 107**

The use of rear light integrators is allowed (signal on while brake is applied,

one side flashes).

Imported Yamaha’s may be equipped with clear lenses and colored bulbs,

as a “Rule of Thumb” if the light was installed by the manufacturer it meets

 the Commissioner’s requirements.

**SHOW SLIDE 108**

4. (d)  A motorcycle stop lamp shall fail safety inspection if:

a) (1) Lamp does not operate when brakes are applied.

b) (2) Light is a color other than red or amber.

c) (3) Light is cracked or broken or allows entry of water.

d) (4) There is standing water in the lens.

e) (5) Lamp is not securely mounted.

f) (6) Wiring is broken or frayed.

**SHOW SLIDE 109**

5. (e)  A motorcycle license plate light shall fail safety inspection if:

a) (1) Light does not operate.

b) (2) Light does not illuminate the license plate.

1. (3) Light is a color other than white.

**NOTE: License Plates that have been relocated still must**

**illuminate the license plate.**

**SHOW SLIDE 110**

6. (f)  A motorcycle horn shall fail safety inspection if:

a) (1) The horn does not operate.

b) (2) The sound emitted is not audible at 200 feet.

c) (3) The horn is not securely mounted.

d) (4) The button is mounted so that it cannot be easily operated by the driver.

**SHOW SLIDE 111**

7. (g)  Motorcycle tires shall fail safety inspection if:

a) (1) There is less than two thirty-seconds of an inch of tread at two or more locations around the circumference of the tire in two adjacent major tread grooves, or if the tread wear indicators are in contact with the roadway at two or more locations around the circumference of the tire.

b) (2) Cords are exposed at any location on the tire.

1. (3) Sidewall is cut, bulging, damaged or is severely cracked due to

 dry rotting.

**SHOW SLIDE 112**

8. (h)  Motorcycle rear view mirrors shall fail safety inspection if:

a) (1) The mirrors are missing, broken, or cracked.

b) (2) The mirrors are not securely mounted.

1. (3) The mirrors will not hold a setting while vehicle is in operation.

**NOTE: Only one mirror is required.** **There is no requirement on which side it is located.)**

**SHOW SLIDE 113**

9. (i)  A motorcycle exhaust system shall fail safety inspection if:

a) (1) The motorcycle has no muffler.

b) (2) The muffler, exhaust or tailpipe has holes, leaking joints, seams, or patches.

c) (3) The tailpipe end is pinched.

**SHOW SLIDE 114**

d) (4) The exhaust system is equipped with a muffler cut out or bypass.

**SHOW SLIDE 115**

e) (5) The muffler baffles have been removed or damaged to create a straight pipe.

**SHOW SLIDE 116**

10. (j)  A motorcycle steering mechanism shall fail safety inspection if:

a) (1) Front shocks are sagging or broken.

b) (2) Front end assembly is bent or there are damaged or twisted bolts.

c) (3) Front end nuts, bolts, or rivets are loose or missing.

**NOTE: The Inspection Inspector-Mechanic performing the**

**safety inspection of a motorcycle IS NOT REQUIRED TO**

**HAVE A MOTORCYCLE ENDORCEMENT.**

11.ADDITIONAL LIGHTING REQUIREMENTS

 **NOTE: Refer to additional lighting section, G.S. 20-129.1**

 **addressed previously in this lesson plan.**

**SHOW SLIDE 117**

**.0549 Approval and Disapproval of Vehicles - Vehicles shall not be disapproved for any reason other than those specified in General Statute or NCAC.**

**SHOW SLIDE 118 - EXEMPTIONS**

1. **EMISSION CONTROL DEVICE EXEMPTION**

**SHOW SLIDE 119 – REQUIREMENTS**

An Exemption may be obtained when a vehicle fails a safety inspection because of missing emissions control devices by contacting a local DMV Inspector.

Parts Exemption (PEN)

1. Requirement for issuance

Vehicle fails the tamper portion of a vehicle inspection because it does not

have one or more emission control devices as required by the vehicle manufacturer.

2. Procedures for issuance

The customer must have documentation from 3 or more sources indicating that the emission component(s) are no longer made or available for

purchase. Documentation must include signed statements on company

letterhead from dealerships, automotive part stores, or junkyards supporting the claim. At least one of the statements must be from a dealership selling the same make of vehicle.

**SHOW SLIDE 120**

J. **19A NCAC 03D .0551 WINDOW TINTING**

**SHOW SLIDE 121**

1. All stations performing window tinting checks **shall** have a photometer that has been properly tested and approved by the Commissioner of Motor Vehicles. Stations that do not have an approved meter shall not inspect vehicles with applications of after-factory window tinting. Stations are not

required to purchase a light meter in order to perform safety inspections on vehicles without after-factory window tinting.

**SHOW SLIDE 122**

a) (a) The Inspector-Mechanic shall determine if the vehicle has after-factory window tinting prior to beginning the inspection. The Inspector-Mechanic may use an automotive film check card or knowledge of window tinting techniques to determine if a vehicle has after-factory tint applied to any window of the vehicle.

**SHOW SLIDE 123**

b) (b) **If a station determines a vehicle has after-factory window tinting but does not have an approved light meter, the Inspector-Mechanic must inform the customer he is unable to perform the inspection. The station may not charge for any portion of the inspection.**

**SHOW SLIDE 124**

**NOTE: INSTRUCT CLASS TO TAKE OUT THEIR TINT METERS**

2. All windows with applications of after-factory window tinting shall be checked with the approved photometer which is properly calibrated and functioning

**SHOW SLIDE 125**

3. Prior to performing a test on a vehicle, the Inspector-Mechanic shall test the photometer for accuracy by checking the calibration against a reference sample of glass provided by the manufacturer. If the photometer indicates the device exceeds the net light transmission by + or - three (3) percentage points, the unit shall be considered out of calibration and may not be used until properly calibrated.

a) (a) The reference sample must be clean and free of dirt prior to performing the calibration check.

b) (b) If a reference sample has been broken or is missing, the test shall not be performed and the Inspector-Mechanic shall inform the customer he is unable to perform the inspection.

c) (c) The windows to be tested shall be clean and free of dirt or moisture.

**SHOW SLIDE 126**

4. The test shall be performed according to the photometer manufacturer’s recommendations.

**SHOW SLIDE 127**

5. Window tint shall fail safety inspection if:

a) (a) Any window on the vehicle with after-factory tint has a light transmittance of less than thirty-two percent (32%).

b) (b) The tint on any window is red, yellow or amber.

**SHOW SLIDE 128**

c) (c) The tint on the windshield extends more than five (5) inches below the top of the windshield or is below the AS1 line of the windshield, whichever is longer.

d) (d) The light reflectance of the tinted window shall be twenty percent (20%) or less.

**SHOW SLIDE 129**

1. Vehicles with after-factory window tint shall not be tested if they are a vehicle as classified in G.S. 20-127(c).

K. **§ 20-127(c)** **Tinting Exceptions**. – The window tinting restrictions in subsection (b) of this section apply without exception to the windshield of a vehicle. The window tinting restrictions in subdivisions (b)(1) and (b)(2) of this section do not apply to any of the following vehicle windows:

**SHOW SLIDE 130**

1. (1) A window of an excursion passenger vehicle, as defined in G.S. 20‑4.01(27)a.

2. (2) & (3) Repealed by Session Laws 2012-78, s. 8, effective December 1,

2012.

3. (4) A window of a motor home, as defined in G.S. 20‑4.01(27)d2.

**SHOW SLIDE 131**

 4. (5) A window of an ambulance, as defined in G.S. 20‑4.01(27)f.

5. (6) The rear window of a property‑hauling vehicle, as defined in G.S. 20‑4.01(31).

6. (7) A window of a limousine.

7. (8) A window of a law enforcement vehicle.

8. (9) A window of a multipurpose vehicle that is behind the driver of the vehicle. A multipurpose vehicle is a passenger vehicle that is designed to carry 10 or fewer passengers and either is constructed on a truck chassis or has special features designed for occasional off‑road operation. A minivan

and a pickup truck are multipurpose vehicles.

**SHOW SLIDE 132**

9. (10) A window of a vehicle that is registered in another state and meets the requirements of the state in which it is registered.

10. (11) A window of a vehicle for which the Division has issued a medical exception permit under subsection (f) of this section.

**SHOW SLIDE 133**

L.  **Medical Exemption**

1. A person who suffers from a medical condition that causes the person to be photosensitive to visible light may obtain a medical exception permit. To obtain a permit, an applicant shall apply in writing to the Drivers Medical Evaluation Program and have his or her doctor complete the required medical evaluation form provided by the Division. The permit shall be valid for five years from the date of issue, unless a shorter time is directed by the Drivers Medical Evaluation Program. The renewal shall require a medical recertification that the person continues to suffer from a medical condition requiring tinting.

**SHOW SLIDE 133**

2. A person may receive no more than two medical exception permits that are valid at any one time. A permit issued under this subsection shall specify the vehicle to which it applies, the windows that may be tinted, and the permitted levels of tinting. The permit shall be carried in the vehicle to which it applies when the vehicle is driven on a highway.

**SHOW SLIDE 134**

3. The Division shall give a person who receives a medical exception permit a sticker to place on the lower left‑hand corner of the rear window of the vehicle to which it applies. The sticker shall be designed to give

prospective purchasers of the vehicle notice that the windows of the vehicle do not meet the requirements of G.S. 20‑127(b), and shall be placed between the window and the tinting when the tinting is installed. The Division shall adopt rules regarding the specifications of the medical exception sticker. Failure to display the sticker is an infraction punishable by a two hundred dollar ($200.00) fine.

**NOTE: All aftermarket window tinting on a vehicle registered out of**

**state is not required to comply with NC window tinting laws.**

**SHOW SLIDE 135**

4. The Inspector-Mechanic shall collect the fee as specified in G. S. 20- 183.7(a) for performing the inspection.

5.The fee for inspecting window tint may only be charged for vehicles with after-factory tint applied. If the light transmission exceeds 65%, the vehicle shall not be considered to have after-factory tint, and the mechanic shall not charge the fee as specified in G.S. 20-183.7(a).

 **NOTE: The $10.00 window tint fee charge during an inspection is**

 **mandatory.**

 **NOTE: A safety inspection mechanic shall not inspect an after-factory**

 **tinted window of a vehicle for which the Division has issued a medical**

 **exception permit pursuant to G.S. 20-127(f).**

 **NOTE: An UNTINTED clear film which does not obstruct the vision but which reduces or eliminated ultraviolet radiation from entering the vehicle through the windshield.**

**SHOW SLIDE 136**

M. **Safety Analyzer Operating Procedure**

**NOTE: Refer to Safety Analyzer Operating Procedures in Power Point**

**presentation.**

**SHOW SLIDE 136 THRU 165**

**NOTE: HAVE STUDENTS PERFORM PRACTICAL INSPECTION USING ANALYZER**

**SHOW SLIDE 166- PENALTY SCHEDULE**

N. **Penalty Schedule for Licensed Safety/OBD Inspection Stations**

1. Violations of the safety inspection regulations, rules, and procedures may result in the inspector-mechanic, the station, or both receiving the issuance of a civil penalty. In addition, inspector-mechanics may also be cited or arrested for

violations of North Carolina General Statute.

 2. Civil violations are divided into three different levels, each ranging in severity:

**SHOW SLIDE 166 - 168**

* 1. **Type I: Most severe**

**Station:**

The 1st or 2nd offense of a Type 1 violation within 3 years will result in

a civil penalty of $250 and a 180 day suspension.

A 3rd or subsequent Type 1 violation within 3 years will result in a

3 year suspension and the assessment of a $1,000 fine.

**Technician:**

The 1st or 2nd offense of a Type 1 violation within 7 years will result in

 a civil penalty of $100 and a 180 day suspension.

A 3rd or subsequent Type 1 violation within 7 years will result in a 2 year suspension and the assessment of a $250 fine.

Examples of Type 1 Violations:

Issue a safety electronic inspection authorization to a vehicle without performing a safety inspection of vehicle.

Issue a safety electronic inspection authorization to a vehicle after

performing a safety inspection of the vehicle and determining the vehicle

did not pass inspection.

Allow a person who is not licensed as a safety inspection mechanic to

perform a safety inspection for a self-inspector or at a safety station.

Perform a safety-only inspection on a vehicle that is subject to both a

safety and emissions inspection.

Conduct a safety inspection of a vehicle without driving the vehicle and without raising the vehicle and without opening the hood of the vehicle

to check equipment located therein.

Solicit or accept anything of value to pass a vehicle other than as provided

in this Part.

**SHOW SLIDE 169 - 171**

* 1. **Type II: Less Severe**

**Station:**

The 1st or 2nd offense of a Type 2 violation within 3 years will result in a civil penalty of $100.

A 3rd or subsequent Type 2 violation within 3 years will result in a 90 day suspension and the assessment of a $250 fine.

**Technician:**

The 1st or 2nd offense of a Type 2 violation within 7 years will result in a civil penalty of $50.

A 3rd or subsequent Type 2 violation within 7 years will result in a 90 day suspension and the assessment of a $100 fine.

Examples of a Type II Violation:

Issue a safety electronic inspection authorization to a vehicle without driving the vehicle and checking the vehicles braking reaction, foot brake pedal reserve, and steering free play.

Issue a safety electronic inspection authorization to a vehicle without raising the vehicle to free each wheel and checking the vehicles tires, brake lines, parking brake cables, wheel drums, exhaust system, and the emissions equipment.

Issue a safety electronic inspection authorization to a vehicle without raising the hood and checking the master cylinder, horn mounting, power steering and emissions equipment.

Issue a safety electronic inspection authorization to a vehicle with inoperative equipment, or with equipment that does not conform to the vehicle's original equipment or design specifications, or with equipment that is prohibited by any provision of law.

**SHOW SLIDE 171 AND 172**

* 1. **Type III: Least Severe**

**Station and/or Technician:**

The 1st or 2nd offense of a Type 3 violation within 7 years will result in the issuance of a warning letter.

A 3rd or subsequent Type 3 violation within 7 years will result in the assessment of a $25 fine.

**NOTE: A safety inspection mechanic whose license has been suspended or revoked, must retake the inspection-mechanic course(s) and successfully complete the course(s) before the mechanic's license(s) can be reinstated. Failure to successfully complete the course continues the period of suspension until the course is completed successfully.**

Examples of a Type III Violation:

Fail to post a safety inspection station license issued by the Division.

Fail to post all safety information required by federal law and by the Division to be posted.

Issue a receipt that is signed by a person other than the safety

inspection mechanic.

Issue a safety electronic inspection authorization to a vehicle after

having failed to inspect three or fewer of the following: Emergency

 Brake, Horn, High beam indicator, rearview mirror, Outside rearview mirror, Turn Signals, Parking lights, Headlights, Headlights aim, Stoplights, Taillights, License plate lights, Windshield wiper,

Windshield wiper blades, Window tint

**SHOW SLIDE 173**

 **Safety Violations – Other Acts**

It should be noted that NCGS 20-183.7B(d) gives the North Carolina Division of Motor Vehicles the ability to designate other acts or actions that constitute a Type I, Type II, or Type III violation.

Therefore, although a particular action and/or scenario is not listed in the foregoing slides, an act that violates NCAC, NCGS, or Federal Code may still be deemed a violation.

A safety inspection mechanic, whose license has been suspended or revoked, must retake the inspection-mechanic course(s) and successfully complete the course(s) before the mechanic's license(s) can be reinstated. Failure to successfully complete the course continues the period of suspension until the course is completed successfully.

**NOTE: 70, Mile Exemption Calculation:**

3-Year and 70,000 Miles Exemption

* + - 1. In accordance with Session Law 2012-199 / House Bill 585, the state debuted on April 1, 2015 a new emissions exemption pertaining to the North Carolina Inspection and Maintenance program.
			2. Vehicles produced within three years of the current year and have less than 70,000 miles on its odometer are exempt from obtaining an emission inspection.

* + - 1. Vehicles meeting this exemption are still subject to the annual safety inspection.
			2. **How to determine if a vehicle meets the exemption:**
1. **Step 1.** Determine the model year of the vehicle:

Title, Registration Card, or the Emission Control Label

1. **Step 2.** Determine if the vehicle model year falls within the last three most recent years

Begin with the current calendar year as year one (1), then subtract two (2) years. (e.g. 2015, 2014, and 2013)

1. **Step 3.** Determine if the vehicle has less than 70,000 miles

Look on the vehicle dash to determine if the vehicle has 69,999 miles or less (do not forget to look for dash and vehicle cluster change outs)

**NOTE: Review Q/A handout for further guidance on HB 585**

**NOTE: Plug In Definition**

Plug-In Electric Vehicles - North Carolina General Statute defines a plug-in electric powered vehicle as a four-wheeled motor vehicle that meets each of the following requirements:

 1. Is made by a manufacturer primarily for use on public streets, roads, and highways and meets National Highway Traffic Safety Administration standards.

 2. Has not been modified from its original manufacturer specifications with regard to power train or any manner of powering the vehicle.

 3. Is rated at not more than 8,500 pounds unloaded gross vehicle weight.

 4. Has a maximum speed capability of at least 65 miles per hour.

 5. Draws electricity from a battery that has all of the following characteristics:

 a) A capacity of not less than four kilowatt hours.

 b) Capable of being recharged from an external source of electricity

**NOTE: According to NC General Statute, a plug-in electric vehicle is**

**exempt from an emissions inspection.**

Additionally, plug-in electric vehicles that can operate solely on electric power and are capable of recharging the battery from an on-board generation source, and an off-board electricity source, are also exempt from emissions testing requirements.

**SHOW SLIDE 174**

**Autocycle** - An Autocycle is a three-wheeled motorcycle that has a steering wheel, pedals, and seat safety belts for each occupant, antilock brakes, air bag protection, completely or partially enclosed seating that does not require the operator to straddle or sit astride, and is otherwise manufactured to comply with federal safety requirements for motorcycles. An Autocycle for the purpose of a vehicle inspection should be considered a motorcycle and treated the same. Verify by the registration card.

**SHOW SLIDE 175**

 **Mechanic charged with manslaughter.**

**SHOW SLIDE 176**

**The License & Theft Bureau Inspection Program Video**

III. Conclusion

1. During this block of instruction the student has received classroom instruction and a

practical demonstration in the correct method required while conducting a North Carolina Safety Inspection.

1. Student Performance Objectives

1. As we have discussed, the most significant link in the State of North Carolina’s
2. Safety Inspection Program is the certified Inspection Mechanic. Utilizing State Law, Administrative Code and the skills taught during this course, the Inspection Mechanic will be able to identify serious deficiencies that require a failure of the State’s Vehicle Safety Inspection. By identifying equipment problems during the inspection, vehicle owners will be required to have these issues corrected prior to passing the required

annual inspection. The conscientious Inspection Mechanic is the first line of defense

to ensure that vehicles registered in this state and operated upon our streets and

highways meet at least the minimum safety requirements.