

UNITED STATES MARINE CORPS  
Logistics Operations School  
Marine Corps Combat Service Support Schools  
Training Command  
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AOM 6801

**STUDENT OUTLINE**

**PERFORM LIMITED TECHNICAL INSPECTION**

**LEARNING OBJECTIVES:**

1. Terminal Learning Objective: Given a tactical wheeled vehicle, the appropriate technical manuals, and a Limited Technical Inspection Motor Transport Form (NAVMC 10284), perform a limited technical inspection to determine the overall condition of the vehicle, per information contained in the references provided. (6.7.3)

2. Enabling Learning Objectives: Given a tactical wheeled vehicle, the appropriate technical manuals, and a Limited Technical Inspection-Motor Transport Form (NAVMC 10284), per information contained in the references provided, perform a limited technical inspection to determine the condition of a/an:

- a. Engine, (6.7.3a)
- b. Exhaust system, (6.7.3b)
- c. Cooling system, (6.7.3c)
- d. Electrical system, (6.7.3d)
- e. Transmission, (6.7.3e)
- f. Transfer, (6.7.3f)
- g. Propeller shafts, (6.7.3g)
- h. Axles, (6.7.3h)
- i. Differential assembly, (6.7.3i)
- j. Brakes, (6.7.3j)
- k. Steering system, (6.7.3k)

- l. Wheel/tires, (6.7.3l)
- m. Frame, (6.7.3m)
- n. Springs/shock absorbers, and (6.7.3n)
- o. Body/hood. (6.7.3o)

**OUTLINE:**

**1. LIMITED TECHNICAL INSPECTION PROCEDURES**

a. NAVMC 10284

(1) In a previous lesson, you were told that NAVMC Form 10284 is used as a guide by maintenance personnel to perform a limited technical inspection on motor transport equipment without disassembly of any component or item unless specific orders are provided by appropriate authority.

(2) NAVMC 10284 also serves as a record of the condition of a vehicle at a specific point in time. The condition of the vehicle as stated on the form will indicate what repairs are required to return the vehicle to full operating condition.

(3) As a mechanic, you may be required to conduct an LTI to determine the condition of a specific system or assembly; for example, the front suspension system. However, to give you a better understanding of the techniques used to conduct an LTI, we will inspect the entire vehicle.

(4) During your initial training in the Automotive Organization Maintenance Course, you learned how to operate different types of trucks which provided you an understanding of how they should properly function.

(5) Later in your training, you learned how to inspect automotive components, systems, and assemblies to determine their serviceability.

(6) In reality, you have already learned how to perform an LTI on a motor transport vehicle; but, until now, you have not been required to conduct one.

(7) Normally, when the mechanic receives the LTI form, the top portion is already filled out. If you do have to complete the top portion, you'll find that it's pretty simple. You can get most of the information from the vehicle record folder and the data plates on the vehicle.

(8) Look at group 02 of the NAVMC 10284 being shown and the copy you have been provided. We know that the M1123 vehicle does not have a clutch. In a case like this, we would draw a line through that item and place N/A in the columns, meaning not applicable, as I have done on the media.

(9) Look at all the groups on your copy of the NAVMC 10284 and line through each item that does not apply to the M1123 vehicle and enter N/A. Let's do this now.

- 03 - Carburetor
- 03 - Turbocharger
- 03 - Flame Heater
- 06 - Distributor
- 11 - Intermediate Axle
- 12 - Air system
- 13 - Tracks
- 14 - Hydraulic system
- 20 - Winch
- 27 - Armament
- 29 - Fifth Wheel
- 30 - Dump Hoist
- 31 - Wrecker Boom

(10) Now let's look at group 18 which simply says "glass." Placing a check in the repair block doesn't tell you much. If both windshields are broken, you would so indicate in the remarks column. To do so, write "18" the group number, and beside it enter left and right windshield broken. By doing this, you know the repair costs will include the price of both windshields.

(11) You'll also notice the NAVMC 10284 has a cost column. If, as part of your inspection, your supervisor wants you to come up with repair costs. You can give your technical research section the NSN of the required parts from the parts manual for the vehicle you are inspecting and they will tell you what they cost or, you can use your knowledge of supply procedures and research the NSN as you have been taught. Costs will always be required by the intermediate maintenance (3rd Echelon) activity.

(12) Look at the top of the column where it says "MI/TI TO BE MADE". During your previous training, you were told that a Modification Instruction (MI) is a specific change in the design or assembly characteristics of equipment, assemblies, subassemblies, components, or parts, and is applied to improve the equipment functioning, maintainability, reliability, or safety. Technical Instructions (TI) normally do not require any reporting or recording.

(a) How would you know if a MI or TI is applicable to the vehicle you are inspecting? The SL-1-2, you will recall, is in a database format that contains all the information you will need to determine what modifications and technical instructions have been published by the Marine Corps that relate to the type of vehicle you are inspecting.

(b) To find out which MI's and TI's have been applied, you should do a physical check if it is a modification you can see. If not, your only other recourse is to rely on the vehicle record folder.

(13) Under "OTHER SHORTAGES", you would enter any missing items not otherwise shown on the LTI, which will affect the classification and serviceability of the vehicle you are inspecting.

(14) An example, of an entry under "MAJOR DAMAGE OBVIOUSLY DUE TO OTHER THAN FAIR WEAR AND TEAR" would be damage to the vehicle that was caused by an accident or through abuse by the operator of the equipment.

(15) The remaining items in the right hand column would be completed by your supervisor.

b. Vehicle Inspection Procedures. When performing a limited technical inspection, don't let the word "Limited" get you off target. An LTI is a detailed inspection; even if the LTI is limited in purpose to the inspection of only one vehicle system, such as the drive train. The actual inspection of the drive train components would be a very detailed inspection. It would be limited only in the sense that there would be no disassembly of components involved.

(1) If possible, begin the LTI with a road test. The road test will tell you a lot about the condition of the vehicle being inspected. Don't forget to perform the "Before," "During" and "After" PMCS, using the operator's manual to guide you.

(a) How does the engine perform? Does it appear to be underpowered? Is it knocking and belching blue smoke? These conditions would indicate a requirement for internal engine repairs.

(b) What about the drive train? Do the transmission and transfer assemblies shift correctly and smoothly? Can you hear clucking noises that indicate defective universal joints? Does the differential emit a howling noise when not under a load?

(c) Were you able to slow and stop the vehicle without it pulling to one side? Did the steering wheel bind? Was there excess free play in the steering wheel?

(d) Remember, I'm not telling you anything new. You have learned all of these inspection techniques in the vehicle instructional modules that you have been through.

(2) After the road test, refer to the Maintenance Allocation Chart located in organizational maintenance manuals for the vehicle being inspected. The MAC of each manual is listed in the same groups as the LTI form to make sure that all groups of the vehicle are inspected. You must use the TM to systematically inspect the vehicle and the LTI form to record your findings. Let's start in the engine compartment. This is a look and touch type inspection.

(a) Is the serpentine belt in place? Is the alternator securely mounted? Is there evidence of fuel or oil leaks? Is the air cleaner complete and tight? Is the engine wiring harness frayed? Remove the oil dipstick and look at the color of the oil. Is it milky? That's an indication of water. Put a drop or two between your thumb and forefinger. Did you feel any dirt or grit? Did you see any leaks? Is the oil pan dented to such a degree that it cannot hold a sufficient amount of engine oil to adequately lubricate the engine?

(3) What should we look for when inspecting the cooling system? Are the radiator hoses and clamps tight? Are the hoses soft or bulging? Is the radiator tank or core leaking? Are the cooling fins clogged? Are the pulleys chipped? Are the belts tight? Is the fan loose? Are the blades bent?

(4) Bent, cracked, broken, and missing parts are fairly easy to detect. Loose parts, normally fasteners, will show signs of wear around the head of the fastener or around the nut.

(5) As you walk around the vehicle, check the tires for cuts, gouges, cracks, and excessive wear. Are there any loose or missing lug nuts? Is the towing connection working properly? Are the fenders bent, dented, secure? Is the paint chipped? Do the doors and windows operate freely? Any broken or cracked glass? Is the brush guard in place? Is the grill or bumper damaged? Are there any tears or holes in the canvas? Are you starting to get the message? An LTI requires a great deal of technical knowledge and diligence.

(6) How about the suspension system? Is the vehicle leaning to one side? This could be the result of a weak or broken spring. Are the shock absorbers leaking?

(7) Are the lights working properly. To prevent climbing in and out of the cab, have an assistant operate the switches and controls while you

check all the lights. Is one headlight pointing up and the other pointing down? Do the brake lights work?

(8) To inspect the undercarriage, we need to go under the vehicle. Any leaks around the engine, transmission, transfer, or differentials? Are the propeller shafts bent? Any signs of wear? Are the universal joints worn? How does the muffler look? Any evidence of leaks? Are all the hangers in place? Is there too much slack in the parking brake cable?

(9) I could continue on, but hopefully I have made my point about some of the techniques used to conduct an LTI. Remember, a limited technical inspection is a very detailed inspection. It is only limited in the sense that major components are not disassembled during the inspection. Are there any questions about the procedures used to inspect automotive components, systems, or parts?

**REFERENCES :**

TM 9-2320-280-20-1

TM 9-2320-280-20-2

TM 9-2320-280-20-3

NAVMC 10284