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 DEPARTMENT OF THE ARMY TECHNICAL BULLETIN
 

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 STANDARDS FOR NON-MECHANICAL ITEMS  
 INCORPORATED ON OVERHAULED OR REPAIRED  
 USAMECOM END ITEMS OF EQUIPMENT
 

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 Headquarters, Department of the Army, Washington, D. C.  
 6 July 1970
 

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## Section I. INTRODUCTION

**1. Purpose.** a. This bulletin provides specific standards for non-mechanical items, applicable to U.S. Army Mobility Equipment Command (USAMECOM) managed end items, overhauled or repaired at depot maintenance activities or contract repair facilities.

b. The standards cited herein are developed as level of acceptance of materiel released from depot Director of Maintenance to acceptance by the depot Director of Product Assurance.

c. These standards cite a measure of condition for attaining the required level -of serviceability and reliability of materiel without causing the performance of unnecessary maintenance operations.

**2. Scope.** a. Standards contained herein apply to all USAMECOM managed major end items overhauled or repaired at Army Materiel Command (AMC) depot maintenance activities or contract repair facilities except for those items where standards are established in a published USAMECOM Depot Maintenance Work Requirement (DMWR) or in lieu of a DMWR the applicable Department of the Army Technical Manual (DATM). If there is any conflict between DMWR's or DATM's, and this TB, the standards of this TB will govern.

b. Provisions of this bulletin do not apply to equipment being overhauled/rebuilt for shipment to Military Assistance Program (MAP)/Modern Army Supply System (MASS) recipients unless specifically prescribed by the MAP/MASS transaction for the materiel.

c. Wear limits, fits and tolerances for mechanical assemblies and subassemblies are not contained in this bulletin. Mechanical assemblies and subassemblies will be overhauled in accordance with the standards provided in the applicable DMWR's, DATM's/or directive from USAMECOM.

d. Request for deviations from this bulletin with detailed supporting justification, shall be directed to Commanding General, U.S. Army Mobility Equipment Command, ATTN: AMSME-M, 4300 Goodfellow Boulevard, St. Louis, Missouri 63120.

**3. General.** No standard ever written can possibly cover all contingencies and eliminate the application of experience and common sense. Heavy reliance on sound judgement and the experience of the inspector, journeyman, mechanic and the shop supervisor is a must if this or any other program is to succeed. There must be full cooperation between Quality Assurance and Maintenance personnel at all levels.

**4. Reporting of Equipment Publication Improvements.** The reporting of errors, omissions and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to Commanding General, U.S. Army Mobility Equipment Command, ATTN: AMSME-MP, 4300 Goodfellow Boulevard, St. Louis, Missouri 63120.

## Section II. OVERHAUL STANDARDS

**5. Accessories.** This includes life rafts, life preservers, tools, lines, trouble lights, signal lights, anchors, ground rods, and fuel lines.

**Note. Rust, cracks, breaks, or deterioration that would affect serviceability is not acceptable.**

**6. Air Cleaner.** Includes hoses, breathers, and visual indicators. Base of air cleaner shall form a tight fit on top of carburetor or air tube. Oil reservoir or dry type filter body gaskets and visual indicators shall be in good condition. Air cleaner may have several small dents; but not in excess of 3/8 inch deep, and shall not restrict the free flow of air nor will the dents cause seepage of air to by-pass the cleaner into the engine. Air cleaner hose may be slightly frayed at the ends or discolored, but shall be free of cracks, cuts, and air leakage.

**7. Battery, Storage.** Storage batteries shall be clean with no indication of leakage, broken case, loose terminals or parts. The electrolyte or activating agent shall be at the proper level and within specific gravity limitations. Specific gravity of electrolyte after full charges shall be 1.270 minimum in each cell. The battery shall be the correct size, type and capacity for the intended application. Above standards apply to activated batteries received with equipment for repair.

**8. Battery, Non-Storage.** Dry cells and other nonstorage type batteries shall be fresh and capable of performing their intended function.

**9. Battery Carrier and Cables.** Cables shall not be corroded, cracked, or deteriorated in any manner that will adversely affect strength. Bolts and nuts are acceptable if not corroded or damaged to the extent they cannot be properly tightened. Cables with worn or frayed insulation are acceptable if securely taped with plastic or neoprene tape. Battery carrier and holddowns shall be removed, when removable, and cleaned of all rust and foreign matter. Parts shall be neutralized and painted with black acid resisting paint.

**10. Belts, V.** V-belts shall be in place, tensioned correctly and not cracked or worn excessively. They shall not bottom in pulleys. Fifty percent of belt tension adjustment shall be available for all matched sets and/or single belt application. Tension adjustment shall be in accordance with the applicable DMWR, DATM or manufacturer's manual.

**11. Belts, Conveyor.** Belts shall be correctly installed, properly tensioned and show no signs of excessive wear.

**12. Brooms.** Split, rotten or damaged core; excessively worn fibers or metal brushes are not acceptable. Broom fibers shall be properly secured to core and shall have a minimum of 75 percent of new fiber length.

**13. Cable Assemblies.** Cables of improper size or lay, or cable impregnated with sand or other foreign material are not acceptable. Cables with rust, kinks, splices, frayed ends, broken strands, or damaged eyelets and clamps are not acceptable. Length of cables shall not be less than 90 percent of original length. Winch cables shall not be less than 75 percent of original length.

**14. Canvas.** a. This includes sides, cab-tops and windows. All canvas items shall be waterproof, colorfast, flexible, durable, and free from rot, mildew, loose grommets, or other visual damage. Tie ropes (cotton or sisal) shall be spliced through grommets and loose ends shall be bound to prevent fraying. Hog rings may also be used to secure ropes through grommets. Reinforcements and patching shall be of same material and similar shades. Patches and reinforcements will be securely sewn and shall have a neat appearance. Slight discoloration between sections is acceptable provided all canvas is sound.

b. Windows shall not be broken and not more than 20 percent of the total area shall contain scratches or discoloration which restricts vision. Workmanship on repaired or fabricated items shall be a quality which produces material free from any defects which could affect function or appearance.

c. Canvas shall be properly fitted, moisture and mildew proofed with preservative compound. This does not apply to treated material received through procurement or supply channels. All items so treated shall be marked MFP (moisture and fungus proofed) in letters at least 1 inch high. All snaps, eyelets, grommets, etc., shall be secure and free from any damage which impairs fastening characteristics. All web straps shall be fitted with tips. and all attached parts such as buckles, slides, snaps, etc., shall be free from damage. Straps which are encrusted with paint are not acceptable. Leather straps shall be processed with neat's-foot oil and web straps shall be processed as canvas items.

**15. Compass.** The compass shall not be fogged, broken, etched or have dirty lens, prisms, dials, missing cross wires, damaged graduation on vertical and/or vernier horizontal circles, micrometer circles, missing, broken or damaged indicating hands, pointers, pivots.

**16. Controls.** This includes hydraulic, electrical, mechanical and air operated. Controls shall not be bent or cracked; springs shall be in place and control linkage properly adjusted and tightened in accordance with manufacturer's specification.

**17. Controls and Instrument Panels.** This includes meters, contact relay, solenoids, switches, warning lights, instruments and other operating components of controls. All controls and instruments shall be functionally checked. Unsealed instruments and gages which are damaged or defective shall be repaired or replaced. Leaking air or hydraulic components are not acceptable. Dial, glass or plastic surfaces shall be free of scratches or discoloration that would impair instrument reading from any angle. Instruments and gages shall be free of moisture, dirt, rust and other foreign material. Hermetically sealed gages or instruments shall be replaced when glass or case is cracked or when gage is found defective.

**18. Cooling System, Amphibious.** a. Radiator shall be cleaned, and tested at 2 to 4 pounds air pressure above radiator pressure cap rating.

b. Keel Cooler. Pressure test at 50 p.s.i. air.

c. Heat exchanger, Torque Converter. Pressure test at 15 p.s.i. air.

d. Heat exchanger, Engine Oil. Pressure test at 15 p.s.i. air.

**19. Cooling System Mobile and Stationary Equipment.** a. The radiator shall be cleaned and tested, at 2 to 4 pounds air pressure above radiator pressure cap rating. External surfaces and fins shall not show damage that affects the serviceability of the unit. Radiator core tubes shall not be blocked. Radiator caps shall maintain specified pressure.

b. Air deflectors and shroud shall not be cracked or distorted. Single dents not in excess of 1/4 inch deep and covering an area greater than 1 square inch and not more than 2 dents in any 6 inch square area are acceptable. Dents must not obstruct or interfere with performance or fit. Dents resulting in a clearance of less than 1/2 inch for the fan blades shall be removed.

c. Reconditioned radiator shall be painted with 1 thin coat of black or olive drab lacquer.

**20. Cooling System (Air).** a. Shrouding, Cylinder Block and Head Fins.

(1) The shrouding shall be free of bends, cracks or breaks and shall be securely mounted.

(2) The fins on the cylinder block and head shall be unpainted and free of foreign material which impedes satisfactory heat radiation.

b. Intake Air Screen and Fan Flywheel.

(1) Intake air screen shall be unclogged and free of breaks.

(2) Fan flywheel shall be free of cracked or broken vanes.

c. Engine Air Shrouds and Cooling Fins. Air shrouds shall be securely mounted and have no air leaks. Cooling fins shall not be broken or clogged by foreign materials.

d. Cylinder Cooling Fins. Cylinder cooling fins shall be free of breaks, corrosion and foreign materials which would impede heat dissipation.

e. Shutters. Air shutter shall be securely mounted and free of foreign materials. If thermostat operated, shutter shall be fully opened when operating temperature is reached and fully closed when engine is cold. Radiator shutters shall be free of dents that result in malfunction and shall be free of cracks and be properly aligned. Automatic operation shall be in accordance with applicable DMWR-DATM or manufacturer's manuals. Manual shutters shall operate correctly, if so equipped.

**21. Cushions and Seats.** Seat supports, risers and brackets shall be free from cracks, distortion, corrosion, and unsound welds. Adjuster assemblies shall be complete and free from any damage or misalignment which restricts movement or prevents positive locking. Seat frames shall operate without binding at pivot points. Damage, other than minor dents in sheet metal panels and slight sag (1/4 inch or less) in cushion supports shall be repaired. Spring assemblies shall not be broken or deformed and shall be corrosion free. Pads are acceptable when dry, resilient, and free of mold or other forms of deterioration. Seat covers shall be considered serviceable if free of oil, grease, paint, heavy stains, rot or loose seams. Patching of seat covering is not acceptable. All seat cushions and seat backs in individual equipment shall be of like material and similar shades.

**22. Cutting Edge.** This includes cutting edges, end bits, scarifier, and bucket teeth. These items shall have 50 percent of their service life remaining. Reversible cutting edges shall have one new edge. Cutting edges showing wear in excess of 50 percent on the initial side shall be reversed. End bits shall be reversed, rebuilt, or replaced to be compatible with the cutting edge. Rebuilt scarifier and bucket teeth are acceptable.

**23. Data Plates.** a. Data plates shall be located in the area adjacent to the manufacturer's plate and shall be stamped, or if necessary, replaced to provide a record of overhaul.

b. The data will be stamped with 1/8 inch letters and shall include the following:

(1) Initials of facility performing overhaul and job order number.

(2) Date of overhaul.

(3) Total operating time since new.

*Note.* Hourmeter shall *not* be turned back.

c. In the event overhaul or modification data have exceeded stamping space on the data plate, the plate shall be replaced and all pertinent data shall be transferred to the new plate. Replacement data plates shall be in accordance with MIL-P-514.

*Note.* Stamping directly on the surface of mounted data plates of any component or assemblies is prohibited.

d. When equipment is received for overhaul and total hours since last overhaul are not available, every effort shall be made to obtain this information.

**24. Electric Motors.** This includes generator assemblies (other than engine accessories), switches, receptacles, instrument and interior lights. Switches shall not be burned, corroded or show signs of wear.

Wiring terminals shall be clean and tight. Entire circuits shall be checked for frayed, missing, burned, chafed, broken, cracked, bare, cut or deteriorated wiring. Connections shall be tight and free from dirt, rust and corrosion. All electrical wiring shall be circuit tested. Insulation shall be oil, fungus and waterproof. All electrical wiring shall be properly mounted. Repairs shall be made in a neat manner, resulting in good appearance. Plastic or neoprene tape may be used for repairs. No electrical connections, wiring or components shall be painted unless otherwise specified. Electric motors and generator assemblies shall not show excessive end play, excessive vibration, worn brushes or worn commutator. Frames shall not be cracked or broken. Wiring and cables shall be free of dirt, grease and oil.

**25. Electrical System.** This includes the following parts and engine accessories: starter, alternator, switches, lights, horn, instruments, circuit breakers, gages, relays, wiring, plugs, commutators, armatures, collector-ring, brushes, pigtailed, brushholders, insulators, field coils and insulation of all rotating equipment; throttle or controller contacts, air operated contactors, reverser, relays, voltage and load regulators and interlocks of the control circuit should be in good condition and free of any obvious defects. Apply a Dielectric, Insulation or Megger Test when applicable. Generator (alternator), regulator, and battery cables shall be tagged as to system voltage and polarity. Starter, generator and alternator brushes shall be replaced if damaged or worn to less than 75 percent of original length. Wiring and components shall be treated with varnish, MIL-V-173 or epoxy. Sealing compound, MIL-S-8516C shall be packed into openings between wire and connector plugs that may admit water or salt air.

**26. Exhaust System.** Muffler and tail pipes shall be free of cracks, leaks, holes (other than drain), scaly rust, loose baffles, and shall not be bent or distorted to the extent that it restricts flow of exhaust gases. Single dents, not in

excess of 3/8-inch deep and not more than 2 dents in any 6 inch square area are acceptable. Vertical exhaust pipes shall be protected by raincap or trap.

**27. Fuel Tanks (Vehicular).** Fuel tanks shall be free of leaks, cracks, rust, contamination or corrosion.

Filter element (if used) and cap with gasket must be complete. Vent shall be open. Strainer shall be clean.

Distortion in the form of waves, sags, and bulges shall not exceed 3/16 inch per 1 foot. Single dents not in excess of 3/8 inch depth with not more than 1 per 10 inch square area are acceptable. Reclaimed steel tanks shall be cleaned with inhibited hydrochloric acid (MIL-M-13528) and coated with aromatic fuel resistant lacquer (MIL-M-6047).

**28. Glass.** An airtight seal shall be provided between panes of double glazed windows. Minor discoloration which extends not more than 2 inches from edge of glass is acceptable on side and rear windows and on right half of windshield, discoloration on the left side of windshields is not acceptable. Slight scratches not more than 3 inches from edge of glass and scattered hairline scratches in other areas, except in drivers or operators immediate vision, are acceptable. Cracks are not acceptable. Metal frames surrounding windows and windshield glass shall be free from rust and shall grip glass firmly. Minor pitting or etching of frames is acceptable but all rust shall be removed. Only approved safety glass shall be used. Mirror glass shall not be discolored as to impair vision to the degree that objects within 50 yards to the rear are indistinct. Metal body and mounting parts shall not be damaged.

**29. Hatch.** Operate to assure proper opening and closing. Inspect seals. The hatch and cargo ramp sealing areas shall prevent any water from entering the amphibious equipment compartments.

**30. Hourmeter, Speedometer, Tachometer.** a. Hourmeter. Hourmeter shall not be turned back or reset to zero at time of overhaul. The hourmeter shall function properly; dial, glass or plastic shall be free of cracks, scratches, and discoloration which from any angle impairs reading. Unserviceable hourmeters shall be repaired or replaced. Operating hours shall be entered in log book in accordance with TM 38-750 at time of repair.

b. Speedometer. Inspect to assure satisfactory operation. The speedometers shall function without erratic pointers. Odometer shall not be reset to zero at time of end item overhaul. Dial, glass or plastic shall be free from scratches, cracks or discoloration which from any angle impairs reading. Mileage data shall not be stamped on the vehicle data plate. Unserviceable speedometers shall be repaired or replaced.

c. *Tachometer.* Tachometer shall function properly. Dial glass or plastic shall be free from scratches, cracks or discoloration which from any angle impairs reading. Unserviceable tachometers shall be repaired or replaced.

**31. Marine Drive.** Operate in full intended manner, if possible, in water, to assure that unit performs as intended. Assure that the marine drive extends and retracts properly. Propeller and nozzle shall be free of cracks, bends or distorted condition. Hydraulic hoses shall be new or in like new condition.

**32. Modification Work Orders (MWO).** All applicable MWO's shall be applied to assemblies, subassemblies or end item at time of overhaul, regardless of the degree of disassembly required. MWO plates shall be firmly affixed to the end item or component to indicate that all current MWO's have been applied.

**33. Painting Standards**

*Note.* Painting, beyond prescribed standards, shall not be performed to enhance appearance only.

a. *Preparation.*

(1) Surfaces to be painted shall be free from corrosion, dirt, grease and scaly paint.

(2) Welds and adjacent areas shall contain no loose scale or slag.

(3) All wood parts which have not been previously treated shall receive at least one coat of surface sealer before painting.

(4) All surfaces that are to remain free of paint shall be properly protected before painting. Masking tape shall not be applied to optical (or similar) surfaces which may be adversely affected by adhesives. A suitable barrier (e.g., paper) shall be utilized between the surfaces being protected and the adhesive tape used for masking. Surfaces that will not be marred by adhesive may be masked off by application of tape directly to the surface. Protective coating such as grease may also be applied directly to the surfaces being masked off.

(5) There shall be no overspray on glass or clear plastic. Care shall be taken to minimize overspray on rubber boots, rubber hoses, seat cover, canvas, belts and numbered electrical harnesses.

(6) There shall be no overspray on informational components such as instruction plates, off-on switches, decals, control panels, dome lights, fire extinguisher bottles, etc.

(7) There shall be no overspray in the engine compartment with emphasis on protecting the engine, transmission, auxiliary generator and engine accessories, except in inaccessible areas.

(8) All internal and external threads used for adjusting shall be covered with grease (GAA) before painting.

(9) Remove all masking tape after paint is dry. Surfaces which are stripped of paint by removal of the masking shall be touched up in compliance with applicable directives.

(10) Grease fittings shall be free of paint.

b. *Painting.*

(1) All exposed metal and wood surfaces normally painted shall be cleaned, pretreated, primed and finish painted, in accordance with TB 740-93-2. Surfaces shall be free of runs and sags and will present a good appearance. Luster and color shall conform to AR 746-5.

(2) The finish coat shall be reasonably smooth with a dry film thickness of at least 0.001 inch.

(3) Overspray is permissible in inaccessible areas.

(4) When spot painting of 10 percent or more becomes necessary, the item shall be completely repainted.

(5) Organizational and non-standard markings shall not be permitted. Standard markings and color shall be as required by TB's or as stated in the contract or work order.

(6) Engine exterior surfaces shall be painted in accordance with MIL-E-15090B (light gray enamel) (amphibious only).

(7) Color Coding. Oil lube, hydraulic oil, antifreeze and water systems/piping shall be color coded for identification in accordance with FED SPEC TT-E-489D or tape resistant to fuels (amphibious only).

(8) Stenciling. Paint shall conform to FED SPEC TT-E-489D and be located as indicated on drawing of, or end item (amphibious only).

(9) Paint on weather seals around door glass and windshields is acceptable if evenly applied. Seals that are heavily coated with paint, evidenced by chipping, or cracking, and generally unattractive in appearance are not acceptable.

**34. Frame and Towing Attachments.** This includes pintles, towing hooks, lifting and tiedown eyes, clevises, centering devices, cables and turnbuckles. These items shall be free of rust, cracks and breaks, or other obvious defects. Operating parts shall function properly. Pintles are acceptable if properly cleaned, oiled, and operate freely. End play in excess of A/4 inch is not acceptable. Wear on pintle shaft or bushing or both to the maximum of 1/8 inch is acceptable. Measurement shall be made with pintle in against brackets at end of bushing or collar. Towing shackles and lifting eyes shall be securely mounted and free of breaks, bends, cracks, excessive wear or damage. Pins shall be properly installed.

**35. Pneumatic Ponton Floats.** Floats shall be in good serviceable condition with all bulkheads intact

and tested in accordance with MIL-P-11386E. Emergency repair kit shall be complete. Skirts, straps and connecting eyes shall be properly laced. The floats shall be completely deflated, properly rolled and laced in carrying cases.

**36. Propeller (Amphibious).** Clean, inspect, repair and test. Clean propeller to remove all corrosion. Buff smooth with fine sand paper. The shaft and propeller keyway and taper hub shall be checked for fit with prussian blue. Straighten propeller blades with lead hammer and pitch blocks. Fill broken edge of blades using acetylene torch and rod in accordance with propeller type of material and data. Propeller shall be statically balanced within 1/2 ounce-inch per 10 pounds of propeller weight.

**37. Radio Interference Suppression.** All electrical connections and contact points on components that may emit a static charge or electrical disturbance shall be properly connected or securely grounded, to insure that such interference will be satisfactorily suppressed. This refers to generators, starters, magnetos, regulators, breaker points, relay contacts, spark plugs, ground connections, etc. The suppression techniques shall be in accordance with the electrical diagram for the end item and TB ENG 68 "Radio Interference Suppression, Techniques for Engineer Equipment."

**38. RAMP (AMPHIBIOUS).** Operate to assure proper opening and closing. Inspect seals. No rip or tears shall be present. The ramp sealing area shall prevent water from entering the amphibious equipment.

**39. Seals and Gaskets.** Gaskets and seals (does not include metallic ring-type seals) which show evidence of leakage or which have been disturbed during repair or overhaul, shall be replaced. Metallic ring-type seals which do not show damage or evidence of leakage may be reused providing the mating wear surfaces are reinstalled in the same location. Cork and felt gaskets shall be used one time only.

**40. Sheetmetal Requirements.** a. *Amphibious Equipment.* This includes cab, hatches, deck, sides and enclosures of hull. Sheetmetal shall be free of cracks or breaks. Doors, hatches and other closures and associated hardware must fit and function properly. Amphibian aluminum sheetmetal distortion in the form of dents, sags, and bulges shall not exceed 3/8 inch over a minimum distance of 18 inches.

b. *Construction Equipment.*

(1) *Light gage.* This includes truck and crane cabs, hoods, and fenders, tractor hoods and tool boxes, snow plow and sweeper bodies, etc. Sheetmetal with cracks or breaks is not acceptable. Cracks and breaks shall be welded and ground smooth. Welded patches are acceptable provided the welding is ground smooth and

the overall contour is not changed. Normal distortion caused by forming or spot welding operations is acceptable. Rust pitting which does not reduce the metal thickness more than 50 percent in any area is acceptable. Sheetmetal used as structural members or stiffeners with rust pitting which does not reduce the metal thickness more than 30 percent in any area is acceptable. Sheetmetal distortion in the form of waves, sags, or bulges will not exceed 3/16 inch per foot. Single dents not in excess of 1/8 inch deep and covering an area greater than 1 inch square with not more than 1 per 12 inch square area are acceptable.

(2) *Heavy gage.* This includes bumpers, tractor fenders, brush guards, track guards, decking and floor plates, etc. Sheetmetal with cracks or breaks is not acceptable. Cracks and breaks shall be welded and in noticeable areas ground smooth. Welded patches are acceptable provided the welding is ground smooth in noticeable areas and the overall contour is not changed. Sheetmetal distortion in the form of waves, sags, or bulges shall not exceed 3/8 inch per 18 inches. Single dents not in excess of 5/16 inch deep and covering an area greater than 2 inches square with not more than 2 per 18 inch square area are acceptable.

(3) *Earthmoving Attachments.* This includes dozer blades, moldboards, scoop buckets, dump bodies, etc. Also includes crankcase guards. Sheetmetal with cracks or breaks is not acceptable. Cracks and breaks shall be welded. Patches are acceptable provided the overall contour is not changed. (Welding and patching must not retard the flow of material). Minor dents-or distortion which does not affect operation or replacement of cutting edges and end bits are acceptable. Distortion in the form of waves, sags, or bulges shall not exceed 1 inch per foot. Single dents not in excess of 1 inch deep and covering an area greater than a 2 inch square are acceptable. Overall appearance and component application must be considered.

c. *Trucks, Vanes and Trailers.* Reference b(1) and (2) Above.

**41. Tires and Tubes (PNEUMATIC).** The following criteria are to be used as a guide when determining the serviceability of tires and tubes when the end item is repaired or overhauled and returned to stock. (Does not include items designated for MASS or MAP.) All tires shall have a good appearance considering the conditions listed below. Tires shall be of the size, type, and ply rating specified in the current DATM pertinent to the vehicle on which they are mounted. All tires shall be matched by type, similar tread design (mud and snow, cross-county, etc.) size, and degree of wear. Tires mounted on driving axles shall have the same tread design per axle.

Dual tires, driving tires, and tires on all wheel drive vehicles shall be measured after mounting on rim and properly inflated. When dual tires have the permissible difference in measurement, the larger (diameter) tire shall be mounted on the outside. Permissible differences are as follows:

| Outside diameter of tire | Permissible difference |                  |
|--------------------------|------------------------|------------------|
|                          | In diameter            | In circumference |
| Under 30 inches          | 1/4 inch               | 3/4 inch         |
| From 30 to 40 inches     | 3/8 inch               | 1-1/8 inch       |
| Over 40 inches           | 1/2 inch               | 1-1/2 inch       |

Tires worn irregular but not worn beyond the minimum tread depth shall be mounted on the rear driving wheels. Tires are not acceptable if any of the following conditions are found:

- a. Less than 50 percent of original tread depth across face of tire remaining.
- b. Deterioration to degree that rubber is dead or brittle.
- c. Tread or ply separation.
- d. Checks, cracks, or cuts that will impair serviceability.

- e. Loose cords or splices.
- f. Treads which are cut, chunked, cupped, or cracked to a degree that will impair the serviceability.
- g. Broken or damaged beads.
- h. Sidewalls that are damaged in any manner that will affect the serviceability of the tire.
- i. Nail holes or cuts not properly repaired.

Serviceability of tires, relative to end item application will be considered when determining their replacement. Tubes are not acceptable if any of the following conditions are found:

- (1) More than 6 patches on tubes under 900 size.
- (2) More than 10 patches on tubes 900 size and over.
- (3) Length of damage exceeds 4 inches.
- (4) Weather or age checked.

Valve stems shall be of required contours and free of damaged threads or eroded areas extending through more than 20 percent of the stem wall thickness.

**42. Tires, Solid, Rubber.** Refer to TM 9-2630-200 14 for inspection and replacement requirements.



**APPENDIX  
REFERENCES**

|  |                     |
|--|---------------------|
| Color and Marking of Army Materiel .....           | AR 746-5            |
| Enamel, Alkyd, Gloss .....                         | FED SPE C TT-E-489D |
| Acid, Hydrochloric, Inhibited, Rust Removing ..... | MIL-A-13528         |
| Enamel, Equipment, Light-Gray .....                | MIL-E-15090B        |
| Lacquer, Aromatic Fuel Resistant .....             | MIL-L-6047          |
| Plate Identification, Instruction and Marking      |                     |
| Blank .....  | MIL-P-514           |
| Ponton, Float, Pneumatic, Three Tube, Half         |                     |
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The Adjutant General*


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