

Chapter 12

Equipment Inspection, Operation, Preventive Maintenance and Repair

12.0 Introduction

Activity Description

Equipment plays an important role in accomplishing the majority of maintenance activities. Each employee is responsible for the proper care and operation of the equipment he/she uses. General appearance and maintenance of equipment reflects the operator's attitude, approach to the job and a positive image for MDT.

The systematic care and maintenance of vehicles/equipment extend the service life and prevent major repairs, as well as prevent down time.

The majority of equipment is leased from the Equipment Bureau and the cost of using and repairing the equipment is paid through rental rates by each Area and is part of their annual budget.

Purpose

The purpose of the equipment program is to design and provide safe and reliable equipment to meet the needs of the Department's users in a cost effective manner. Proper care will preserve and extend the useful life of equipment.

Equipment Purchase and Replacement

Replacement equipment and additional new equipment is purchased every two years after being authorized by the Legislature. This process begins with requests from each Maintenance Area (and other MDT users) submitted to the Equipment Committee. The Committee, which consists of a representative from each District, prioritizes requests based on mileage, hours and age of existing equipment.

Safety and Training

Before operating equipment, employees need to review safety, training and operation manuals. Supervisors need to ensure training is available for employees. In addition, supervisors need to ensure employees comply with approved methods and guidelines.

Documentation

Using the Operator Usage Report, employees are responsible for recording vehicle/equipment usage, repair requests and preventive maintenance activities.

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Environmental Best Management Practices

Disposal of lubricants, motor oil, filters, rags, anti-freeze and other used materials should be in an appropriate manner.

Resources

Preventive Maintenance Program Manual or Handbook

Equipment Management System (EMS) Manual

MDT Equipment Training Manuals

Manufacturer's Vehicle Operator Manual

MDT Safety Policy and Procedures Manual

Material Safety Data Sheets (MSDS)

12.1 Equipment Preventive Maintenance Program (MMS 9401)

Activity Description

This activity includes routine maintenance, service and inspection of equipment.

Purpose

The purpose of this activity is to provide systematic care, service and inspection of equipment to ensure a serviceable condition and to detect and correct failures before they become major repairs, thereby extending serviceable life.

Timing of Maintenance

Three (3) pre-determined scheduled maintenance activities apply to each piece of equipment:

- **PM Daily** – This is the daily responsibility of the operator of each vehicle or piece of equipment for pre and post operation. For example, check fluid levels, belt tension, tire pressure, cutting edges and so on. Refer to the equipment operator's daily checklist in the Preventive Maintenance Handbook.
- **PM Level I** – This is a required service for equipment on regular intervals and is the responsibility of the operator under the direction of the immediate supervisor. For example, change oil and filters, check lube levels in gearboxes, check tires and inspect wheels. Refer to the schedule in the Preventive Maintenance Manual for the specific equipment class for timing intervals and list of detailed responsibilities.
- **PM Level II** – These are scheduled major services performed by the Area shops on all vehicles and equipment.

Shop superintendents annually inspect each piece of equipment for condition and report observations to the Equipment Bureau.

Scheduled maintenance intervals may be shortened under severe operating conditions or other considerations.

Materials

Cutting edges are purchased yearly through contract and are delivered to the areas. Oils, lubricants, filters and other supplies are purchased locally through the Stockperson.

Safety and Training

Employees should review Material Safety Data Sheets (MSDS) to learn about products used and to make themselves aware of safety and health precautions and required personal protective equipment.

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Special Precautions

- Attention should be given in using safety equipment when working under or around any equipment such as dump box supports, jack stands and wheel chocks.
- Block plows when changing cutting edges. When possible, use tow people.

Environmental Best Management Practices

Dispose lubricants, motor oil, antifreeze, filters, rags and other used materials in an appropriate manner as approved by the Environmental Protection Agency (EPA) and MDT regulations.

Procedures

Refer and perform the list of items for scheduled maintenance as outlined in the Preventive Maintenance Manual.

12.2 Equipment Operation

Activity Description

This activity is the safe and appropriate operation of MDT equipment.

Purpose

The purpose of this activity is to ensure equipment is operated within design limits, to prevent abuse and to contribute to a safe work environment.

Specialized Equipment

Operating some types of equipment requires specialized training and/or licenses such as bridge inspection trucks, cranes, and crawlers. Special consideration should also be given to transporting and maintaining this type of equipment.

Safety and Training

Before operating equipment, employees need to review safety, training and operation manuals for specific requirements. Supervisors need to ensure training is available for employees. In addition, supervisors need to ensure employees comply with approved methods and guidelines

Special Precautions

Drivers/operators are responsible for safe and conscientious use of equipment.

The following practices for equipment use can be unsafe, abusive or illegal:

- Overloaded or improperly loaded trucks
- Excessive speed
- Unsafe backing procedures
- Shifting without a clutch
- Towing private vehicles or improper towing of other equipment.
- Equipment modifications without proper approval
- Exceeding height and width restrictions for transported loads
- Improper methods for securing loads for transport
- Storing loaded trucks for extended periods
- Failure to monitor cutting edge wear
- Excessive debris or trash in truck and equipment cabs
- Unauthorized or personal use of equipment

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12.3 Equipment Repairs (MMS 9401)

Activity Description

This activity includes the minor equipment repair performed by maintenance personnel in the field.

Purpose

The purpose of this activity is to ensure safe, efficient and continuous operation of equipment.

Timing

Safety devices, such as headlights, windshield wipers, amber lights or back-up alarms, should be repaired or addressed immediately.

Maintenance employees may do minor repairs, such as, but not limited to these items:

- Light bulb replacements
- Sander chain adjustments
- Fan belts
- Flat tires
- Sander spinners
- Mirror replacements
- Flasher units replacements
- Sander light replacements
- Maintenance of plows, sanders and dump boxes by sand blasting and painting.

Area Shop Superintendent should be informed before doing this kind of work. Similar repairs not listed may also be done, but should be approved by the shop superintendent prior to making the repair.

Safety and Training

Identifying and performing minor and safety repairs in a timely fashion helps to ensure safety to the operator and the traveling public. Use appropriate equipment and protective clothing. Use appropriate lifting, blocking and lug nut tightening procedures.

Procedures

1. Identify the problem.
2. Is immediate repair needed?
3. Has this type of repair been approved?
4. If so, make the minor repair.
5. If not, contact shop superintendent to schedule repair.

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Emergency Procedures

13.0 Introduction

The Department routinely has to respond to emergency and disaster situations that maybe natural, technological or chemical. Immediate response may need to be taken to ensure the integrity of the Department's infrastructure, protect the environment, and/or life and property. The cause of action may or may not be technically defined as or declared an emergency by Gubernatorial or Presidential declaration, or by other state or federal emergency statutes under the Endangered Species Act, Stream Protection Act or Clean Water Act. The mission of the Department is to protect the traveling public and the environment.

Description

Natural and manmade disaster/emergencies happen. The Department will respond with appropriate manpower and equipment to mitigate damages to roadways, roadsides, structures, etc. to prevent loss or further damage and to protect the safety of the traveling public. The most common disaster/emergency responses will be floods, wildfires, storms, and hazardous materials spills.

Purpose

The intent is to be prepared to respond to natural disasters and manmade emergencies in an organized manner within identified roles and responsibilities.

Timing of Maintenance

Reporting of Incidents, Accidents, Emergencies and Hazmat Incidents

When reporting incidents, accidents, emergencies, HAZMAT to Area office:

- Be as concise as possible.
- Identify location use route and reference post.
- Do not use local jargon.
- Describe the incident (what, when, and how), causalities, road damage, traffic control or detour.
- Request what staff or other responses are needed at this time.
- Refer to the Standard Emergency Procedures and Guidelines in the Event of a Disaster, Natural or Man Made, Revised 1999, when developing an emergency plan.

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For natural disasters/emergencies a first inspection to determine the extent of potential or actual damages, notification of appropriate staff of the situation to determination the most appropriate actions.

For hazardous materials spills **DO NOT** attempt to make a determination of the spilled materials unless it can be done safely. If there is any question contact the Area Maintenance Office and they will notify the appropriate County Disaster and Emergency Services Coordinator.

The Department may provide support to the local incident commander typically traffic control, communications, etc. The Department may assist in containment, if safe to do so, to prevent further environmental or property damage. The Department is not responsible for the containment or cleanup of the materials.

Specialized Equipment

Traffic control devices

Safety and Training

Training is periodically provided on notification procedures and responses to disasters/emergencies and hazardous materials spills.

Hazardous material training provides basic knowledge of the health hazards and emergency procedures related to hazardous materials incidents.

Environmental Best Management Practices

Environmental best practices include:

- Cooperating with the Environmental Services District Biologist and/or the MFWP Regional Biologist and other resource agencies as appropriate.
- Repairing any damage to fishery or water resources caused by MDT Maintenance responses to the emergency.
- Avoiding additional impacts to wetlands or streams where possible.
- Providing, if possible, adequate erosion control or bank stabilization necessary to keep materials from entering watercourses.
- Identifying and planning for slide debris disposal at appropriate sites. Appropriate sites for long and short-term material disposal will be identified and cleared for any potential wetland or sensitive impact and mapped.
- Remedial actions for emergencies will include bioengineering and fish friendly design, where practicable for stability and safety.

Procedures

The Department will respond to emergencies and natural disasters that affect the roadway surface, shoulder, roadside and structures or the safety of the traveling public.

Appropriate MMS cost center will be established. MDT will generally have already responded to an emergency or disasters before there is a Gubernatorial or the Presidential declaration. The cost center is the means of documenting what was done, and where to secure funding reimbursement if there is a declared disasters or from a third party i.e. trucking companies, railroads, etc. for hazardous materials spills.

Do not attempt to determine materials spills unless it can be done safely – leave the determination to the experts.

Hazardous materials spills are the responsibility of the Local County Disaster and Emergency Coordinator. They will generally become the active incident commander.

Spill containment, if requested by the local incident commander, the Department may attempt to confine hazardous materials spills if they are not life threatening.

The Department will not engage in clean-up activities unless directed by the Maintenance Chief or higher authority within the department.

Resources

MDT Standard Emergency Procedures and Guidelines In The Event of a Disaster,
Natural or Manmade
Emergency Resource Guidebook

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