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Guideline /

Major Inspections of Mobile Elevating
Work Platforms

Leitfaden /

Hauptinspektionen von Fahrbare
Hubarbeitsbühnen

Guide /

Principales inspections des plates-formes
de travail élévatrices mobiles

1.0 Introduction

1.1 This document outlines a major inspection scheme to validate structural integrity and functionality of critical components of a mobile elevating work platform (MEWP). Such a scheme may be undertaken to determine if a machine is within safe design and use criteria beyond the manufacturer's design life. Design life is defined as the duration determined by the manufacturer for which a structure or a structural component may be used for its intended purpose with recommended maintenance.

1.2 MEWPs are designed and constructed to set criteria as defined by national and international standards dependent on which country/continent they are intended to be first put into service. As the benefits and efficiencies of using MEWPs are recognised by more industries and countries throughout the world, the number of machines in service is continually increasing. The growing demand for second-hand machines and the retention of machines in some rental fleets has led to the use of MEWPs beyond the original design life. It is recognised that there are machines in general use which:

- i) Have been in service for 10 years or more, yet may not have reached their design life with regard to design cycling i.e. usage
- ii) Have reached their design life prior to 10 years because of excessive cycling and/or severe operating environment

1.3 Countries including Australia, Canada and Finland have formally documented a requirement for a "major inspection" in specific circumstances including where a MEWP is to be used beyond its original design life.

2.0 Scope and frequency of inspection

2.1 To fulfil their legal obligations and ensure MEWPs are maintained in good repair and safe working order, owners should implement regular inspection and maintenance programmes in accordance with local, state or federal regulations, legislation, directives, standards and manufacturer's requirements. These may include:

- Pre-use inspection
- Interim, frequent, or periodic inspections
- Six-monthly or annual inspection/examination by a competent person

2.2 Dependent on the frequency of use and severity of the operating environment, planned inspections should be carried out at a frequency to enable the MEWP to be kept in a safe and satisfactory condition. The harsher the operating environment, the more frequent the inspection should be.

2.3 A complete and comprehensive record of all information concerning inspections, maintenance and testing that has a direct bearing on the safety of the MEWP should be kept by the owner. When a machine is sold, any such records should be passed on with the machine and made available to a new owner. These records should be maintained until the machine is permanently removed from service.

2.4 It is proposed that a MEWP should undergo a major inspection within 10 years after having been originally put into service and subsequently every 5 years after that (e.g. 10, 15, 20 years old). If the service history indicates sustained high usage, use in highly corrosive environments or application that typically decreases service intervals, the major inspection should be undertaken prior to the 10th year. The inspection may be undertaken in parts provided that it is wholly completed by the 10th year. A major inspection should be undertaken if service records from the last 5 years of the machine are not available. This should be undertaken on change of ownership and/or on importation into the country if service records are not provided.

2.5 The major inspection scheme is also intended to assist owners in determining if a MEWP is within safe design and use criteria when they:

- a) Acquire a machine with insufficient service, maintenance history and inspection records, or
- b) Suspect a MEWP to have been exposed to exceptional circumstances which may have affected the structural integrity of critical components, thus jeopardising the safe use

2.6 The intent of a major inspection is to ensure the continued safe use of the MEWP past the design life of the machine and for predicted use until the next recommended major inspection (maximum of five years). The introduction of a major inspection does not remove the requirement of the owner to continue with other inspections at the required intervals as detailed in 2.1 and 2.2.

3.0 Entities conducting inspections

3.1 The major inspection should be performed by a competent person or competent body. Such a competent person or body should have acquired through a combination of training, qualification, and experience, the knowledge and skills enabling that person or body to correctly perform the required tasks.

3.2 Persons conducting the major inspections are advised to periodically update their knowledge to ensure they remain competent and aware of any developments relevant to the inspection and maintenance of MEWPs. These may include but are not limited to:

- Amendments to relevant legislation
- Amendments to relevant standards and best practice
- Improvements in inspection regimes and methods
- Developments in machine technology and design
- Updates of manufacturer service and maintenance requirements
- Safety bulletins or service bulletins

3.3 In order to record such learning events and demonstrate Continual Professional Development (CPD), the competent person should maintain a CPD log which will record but not be limited to the following:

- Date of learning event
- Duration of learning event
- Brief description of format and content of the learning event

3.4 The competent person or body should be able to demonstrate competency with the applicable type of MEWP under consideration and have familiarity with:

- The specific model of MEWP
- Manufacturer instructions
- The inspection processes required

3.5 The competent person/body should be aware of any limitation in their abilities and recognise the need to engage a third party where necessary to provide specialist support or services, e.g. recognising metal fatigue, non-destructive testing (NDT).

4.0 Inspection requirements

4.1 Prior to a major inspection taking place, a thorough risk assessment of the workplace and tasks to be performed should be conducted. Consideration should be given to the recommendations provided by the manufacturer in the operating and service manuals as part of the risk assessment process. This will help develop a safe system of work which should be communicated to all involved to ensure the whole inspection will be carried out in a safe manner with minimal risk of injury.

4.2 It is essential to ensure that all structural components are inspected to identify issues that require repair or replacement prior to the machine being put back into service.

4.3 Before inspecting the specific machine, the competent person or body should review the service and maintenance documentation to identify:

- Possible trends in component failure
- Where and when original structural or critical safety related parts have been replaced

4.4 A continuous working record of the service and maintenance history and a record of significant events concerning the safety and operation of the MEWP should be kept and be readily available for inspection. The records should be legible and easily understood. Documentation providing evidence of the checks, adjustments, replacement of parts, repairs and inspections performed and irregularities or damage concerning the unit's safe use should be available for inspection. In addition, records of routine, interim, frequent and/or periodic inspection reports, and completed six-monthly/annual inspection reports should be maintained and made available for examination as required. The records listed above should be transferred with ownership of the MEWP.

4.5 The competent person or body may reduce the intensity of a major inspection accordingly if they are fully satisfied that the service and maintenance records are sufficient to demonstrate that the MEWP has been and is currently part of a thorough and effective inspection/maintenance regime.

4.6 The major inspection should involve examination of those components identified by the manufacturer. The MEWP may need to be dis-assembled with paint, grease and corrosion removed from components to perform a complete and thorough inspection.

4.7 The major inspection should consider but not be limited to:

- i) The safety instructions and manuals for operation and maintenance applicable at the time of inspection
- ii) Controls and emergency stop
- iii) Detailed examination of all wire ropes and chains
- iv) Detailed visual inspection of all structural components
- v) Non-destructive testing of structural components as identified by the manufacturer and other suspect areas for evidence of cracking due to fatigue or excessive stress
- vi) Structural, mechanical, electrical, instrumentation, control and operational anomalies
- vii) Components whose maintenance records indicate repeated failures
- viii) Braking systems
- ix) Work platform levelling systems
- x) Work platform, guardrails and access gate
- xi) Manufacturer's safety upgrades and bulletins
- xii) Secondary and emergency retrieval systems
- xiii) Tolerance checking of wearing components
- xiv) Checks for corrosion and environmental degradation
- xv) Inspection of components which may have been replaced previously
- xvi) The specific safety devices of the MEWP

4.8 It is important to remember that a complete generic major inspection checklist does not exist, nor is it possible for a person to provide/use such a list. Each major inspection will be different and only the competent person/body can determine the extent of the inspections required which will enable them to declare that the MEWP is safe for continued use.

4.9 In some regions, MEWPs are required to undergo overload testing. In determining whether an overload test is required and the nature of any such test, the competent person/body should take into consideration the following:

- That some manufacturers do not recommend overload tests, except in "exceptional" circumstances, and severely limit the magnitude of the test load that may be applied
- That repeated overloads may have a deteriorating effect on the MEWP structure over time
- Any observed structural failures or component compliance issues
- That cracking should be identified during thorough examination prior to the overload test
- That inspection bodies such as the engineering insurers do not recommend it, as there is no defined structural or mechanical benefit

- That some insurance companies may not provide coverage for MEWPs that are known to have been significantly overloaded - including overload testing

5.0 Report and Recommendations

5.1 A major inspection report should be written on completion of each inspection. The report should include:

- Date(s) over which the major inspection took place
- Name and address of owner of machine
- Name of competent person and entity conducting the inspection
- Description of inspection scheme including areas inspected, methods used and tests conducted
- Any deficiencies found affecting the safe use of the MEWP
- Any necessary instructions including time limits, to correct and eliminate deficiencies found affecting the safe use of the MEWP
- The proposed date of the next periodic inspection and major inspection
- Any specific matters that are to be investigated at stated intervals prior to the next major inspection

5.2 Where the major inspection report identifies deficiencies that need addressing prior to the machine going back into service, documented evidence confirming that all such deficiencies identified in the report have been adequately addressed should be made available as part of the on-going machine records of inspection and maintenance.

The recommendations and advice contained in this Guidance Note are based on specifications, procedures and other information that have been collected from the FEM and IPAF from their members. They represent what is, as far as FEM and IPAF are aware, the best available data at the time of publication on the instruction and use of the equipment concerned in the general conditions described and are intended to provide guidance for such use.

The suitability of this Guidance Note must be determined by the judgement of the person applying it in accordance with the conditions in which use is envisaged and subject to all relevant statutory requirements.

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