NATIONAL ACCELERATOR LABORATORY

ENVIRONMENT, SAFETY & HEALTH DIVISION

Chapter 47: Mobile Elevating Work Platforms

Quick Start Summary

Product ID: 652 | Revision ID: 2353 | Date published: 27 July 2021 | Date effective: 27 July 2021
URL: https://www-group.slac.stanford.edu/esh/eshmanual/references/mewpQuickstart.pdf

1 Who needs to know about these requirements

The requirements of Mobile Elevating Work Platforms apply to workers (as *operators* and *spotters*), *custodians*, supervisors, the MEWP program manager, and Fleet Services. They cover selecting, inspecting, maintaining, and using *mobile elevating work platforms (MEWPs)*.

2 Why

The misuse of MEWPs can result in property damage, severe injury, or death from MEWPs falling over, collapsing, or coming into contact with nearby structures and utility lines or operators falling or being thrown from the MEWP or pinned to structures.

3 What do I need to know

Only workers who are physically and mentally fit and qualified may operate this equipment. Qualification includes thorough training, both classroom and practical, the latter emphasizing experience with specific types of MEWPs. A second person, capable of operating the descent device, must be designated and in visual or contact range when MEWPs are in use. A spotter, who is a qualified operator, is required when the MEWP is operating in an area with minimal clearance or where hazards are present.

MEWPs themselves must meet applicable standards, be maintained and stored properly, and pass an initial inspection, conducted by a custodian, when first brought on-site and a pre-use inspection, conducted by the operator, before each shift.

4 When

These requirements take effect 27 July 2021.

5 Where do I find more information

SLAC Environment, Safety, and Health Manual (SLAC-I-720-0A29Z-001)

- Chapter 47, “Mobile Elevating Work Platforms”

Or contact the program manager.

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ENVIRONMENT, SAFETY & HEALTH DIVISION

Chapter 47

Mobile Elevating Work Platforms

Product ID: 24 | Revision ID: 2352 | Date published: 27 July 2021 | Date effective: 27 July 2021
URL: https://www-group.slac.stanford.edu/esh/eshmanual/pdfs/ESHch47.pdf

1 Purpose

The purpose of this program is to ensure *mobile elevating work platforms (MEWPs)* meet applicable standards, are kept in good working order, and are used safely and properly. It covers selection, inspection, maintenance, and use of MEWPs. It applies to workers (as *operators* and *spotters*), *custodians*, supervisors, the MEWP program manager, and Fleet Services.

2 Roles and Responsibilities

Functional roles and general responsibilities for each under this program are listed below. More detailed responsibilities and when they apply are provided in the procedures and requirements.

The roles may be performed by one or more individuals and one individual may play more than one role, depending on the structure of the organizations involved. Responsibilities may be delegated.

2.1 Operator

- Has a valid California driver's license or a California-recognized license issued by another state or by a foreign jurisdiction of which the operator is a resident if driving on-site (see Traffic and Vehicular Safety: Traffic Safety Requirements)
- Completes required training and demonstrates proficiency in safe MEWP operation
- Is knowledgeable of safety requirements and MEWP operation instructions and adheres to them
- Wears personal protective equipment (PPE) as required
- Inspects MEWP before use
- Reports operating malfunctions or problems to the MEWP custodian immediately and ensures equipment is tagged out of service

2.2 Spotter

- Is a qualified MEWP operator
- Is required when the MEWP is operating in an area with minimal clearance or where hazards are present
- Communicates with the operator on hazards
- Ensures no unauthorized personnel encroach on the work area

2.3 Custodian

- Has a valid California driver's license or a California-recognized license issued by another state or by a foreign jurisdiction of which the operator is a resident if driving on-site (see Traffic and Vehicular Safety: Traffic Safety Requirements
- Completes required training
- Secures MEWPs to prevent unauthorized use
- Conducts initial inspection when MEWP is first brought on-site and after service, maintenance, or repair
- Maintains a supply of blank inspection checklists and operator's manual in a weatherproof container on each MEWP
- Maintains completed inspection checklists for three years
- Ensures MEWPs that do not pass inspection are tagged out and removed from service and reported
- Works with Fleet Services to ensure MEWPs are properly serviced and maintained

2.4 Supervisor

- Assigns training and authorizes workers to operate only MEWPs they are qualified to operate
- Revokes an operator's authorization if he or she violates safety requirements. Operators in violation of safety requirements are not to be allowed to continue the operation of MEWPs until retrained and reauthorized.
- Designates qualified operators to provide on-the-job training
- Designates a qualified operator to act as spotter if required
- Designates a person, who has been instructed by the operator in the operation of the descent device or is a qualified operator, to be in visual or contact range to bring the basket or platform down in the event of equipment failure or operator problem
- Designates MEWP custodians and ensures that they maintain the necessary skills required for custodianship

2.5 Fleet Services

- Performs or arranges for all procurement, maintenance, and servicing of SLAC-owned MEWPs
- Maintains records of repair for each MEMP for a minimum of three years that include the date of the work, a description, and the person or entity that performed the work
- Ensures maintenance records are kept and available upon request

2.6 MEWP Program Manager

- Assists in the interpretation of standards in support of compliance and safety improvement efforts
- Identifies, develops, and maintains appropriate training
- Assists with the qualification and authorization of trainers

- Maintains this chapter and associated documents
- Periodically assesses program
- Ensures that subcontractors have a compliant program

3 Procedures, Processes, and Requirements

These documents describe the detailed requirements for this program and how to implement them:

- MEWP: Operating Requirements (SLAC-I-730-0A21S-008). Describes requirements for use of mobile elevating work platforms
- MEWP: Equipment Requirements (SLAC-I-730-0A21S-058). Describes requirements for mobile elevating work platforms
- MEWP: Inspection Procedures (SLAC-I-730-0A21C-008). Describes process for initial and pre-use inspections of mobile elevating work platforms

These are the forms and tools for this program:

- MEWP: Inspection Checklist (SLAC-I-730-0A21J-011). Form for documenting initial and pre-use inspections of mobile elevating work platforms

4 Training

4.1 Operator

An operator must be authorized by his or her supervisor and complete all required classroom, on-the-job and practical training before using a MEWP.

Courses and equipment-specific operational proficiency evaluation must be completed a minimum of every three years to maintain qualification.

An operator must complete the course(s) appropriate to the type of device he or she will be operating:

- ESH Course 162, Boom Lift Operator Training (ESH Course 162)
- ESH Course 162PRA, Boom Lift Operator Practical Training (ESH Course 162PRA)
- ESH Course 163, Scissor Lift Operator Training (ESH Course 163)
- ESH Course 163PRA, Scissor Lift Operator Practical Training (ESH Course 163PRA)

Course credit from an approved program (such as from a MEWP leasing company) is transferable subject to MEWP program manager review, but a practical evaluation for the equipment to be operated must be taken at SLAC. For course credit, the applicant must have passed a written exam with a score of 70 percent or higher, and course topics must have included, at minimum

- MEWP operational safety, including limitations of use
- Operator duties, including pre-use inspections (equipment and area)

- Maintenance requirements (including battery charging)
- MEWP-specific safety precautions
- Safe working load or capacity (persons and materials) determination
- Barrier and sign requirements
- Condition of and control over work area
- Working safely at heights
- Emergency lowering procedure
- Outriggers and stabilizers
- Checks prior to road travel
- Practical assessment (hands-on operational test)

4.1.1 Fall Protection

Operators who 1) work with articulating boom aerial devices, 2) use fall protection equipment, or 3) access unprotected elevated work surfaces must complete the following course before performing such work. The course must be retaken every three years.

- ESH Course 200, Fall Protection / Authorized Training (ESH Course 200) (every 36 months)

4.2 Custodian

Custodians must complete the classroom or web-based training above for the device in question but are not required to pass a performance evaluation.

5 Definitions

aerial device. Any vehicle-mounted or self-propelled device, telescoping extensible or articulating, or both, which is primarily designed to position personnel

articulating boom lift. An aerial device with two or more hinged boom sections

boom. An elevating member; the lower end of which is so attached to a rotating or non-rotating base that permits elevation of the free or outer end in vertical plane

custodian. A person who is responsible for a MEWP (whether SLAC-owned, rented, or leased)

override. When platform control functions are bypassed by the lower (base) controls

platform. Any personnel-carrying device, such as a bucket, basket, cage, stand, or tub that is a component of a *MEWP*

platform, elevating work. A device designed to elevate a platform vertically (vertical tower, scissor lift)

platform, extensible boom. An aerial device (except ladders) with an extensible boom. Telescopic booms with personnel platform attachments are considered to be an extensible boom platform.

platform, mobile elevating work (MEWP). A general term used for scissor lift, aerial platform, or an extensible or articulating boom aerial device (either self-propelled or vehicle-mounted) used for the purpose of positioning personnel, their tools, and necessary materials to elevated work locations. Not included in this definition are ladder stands, scaffolds, or industrial trucks.

pre-use inspection. A thorough inspection of equipment and area conducted before each shift, before using equipment

spotter. A person designated to monitor conditions for any health or safety impacts

stability. A condition of a work platform in which the sum of the moments tending to overturn the unit is less than the sum of the moments tending to resist overturning

6 References

6.1 External Requirements

The following are the external requirements that apply to this program:

- Title 8, *California Code of Regulations*, "Industrial Relations", Division 1, "Department of Industrial Relations", Chapter 4, "Division of Industrial Safety", Subchapter 7, "General Industry Safety Orders", Group 4, "General Mobile Equipment and Auxiliaries", Article 24, "Elevating Work Platforms and Aerial Devices" (8 CCR 3636–3648)
- American National Standards Institute (ANSI)/Scaffold Industry Association (SIA)
  - ANSI/SIA A92.2, "Vehicle-mounted Elevating and Rotating Aerial Devices" (ANSI/SIA A92.2)
  - ANSI/SIA A92.3, "Manually Propelled Elevating Aerial Platforms" (ANSI/SIA A92.3)
  - ANSI/SIA A92.5, "Boom-supported Elevating Work Platforms" (ANSI/SIA A92.5)
  - ANSI/SIA A92.6-, "Self-propelled Elevating Work Platforms" (ANSI/SIA A92.6)

6.2 Related Documents

SLAC Environment, Safety, and Health Manual (SLAC-I-720-0A29Z-001)

- Chapter 13, "Traffic and Vehicular Safety"
- Chapter 41, "Hoisting and Rigging"
- Chapter 45, "Fall Protection"
- Chapter 30, "Air Quality"
- Chapter 48, "Industrial Trucks"

NATIONAL ACCELERATOR LABORATORY

ENVIRONMENT, SAFETY & HEALTH DIVISION

Chapter 47: Mobile Elevating Work Platforms

Operating Requirements

Product ID: 285 | Revision ID: 2354 | Date published: 27 July 2021 | Date effective: 27 July 2021
URL: https://www-group.slac.stanford.edu/esh/eshmanual/references/mewpReqOperating.pdf

1 Purpose

The purpose of these requirements is to ensure *mobile elevating work platforms (MEWPs)* are operated safely. They cover the use of MEWPs. They apply to workers (as *operators* and *spotters*), *custodians*, and supervisors.

2 Requirements

2.1 Personnel

Only qualified and authorized workers may operate a MEWP.

A person who has been instructed by the operator in the operation of the descent device or is a qualified operator must be designated and in visual or contact range of the MEWP operator to bring the basket or platform down in the event of equipment failure or operator problem.

A spotter, who must be a qualified operator, is required when the MEWP is operating in an area with minimal clearance or where hazards are present. A spotter should be located for the best view and can be on the work platform or on the ground. The spotting function need only be performed during vertical or horizontal movement. The spotter may be the person designated to operate the emergency descent device.

2.2 Pre-use Inspection

Before each shift a pre-use inspection must be conducted (see MEWP: Inspection Procedures).

2.3 Fall Protection

On a vertical-only work platform with guardrails, such as a scissor lift, use of a fall arrest system is not required unless recommended by the manufacturer. In this case, use the manufacturer-installed rated anchorage points within the basket.

Anyone who will be in the basket of a MEWP classified as an *aerial device* (for example an *articulating boom lift*) must use an approved fall restraint or arrest system, and the fall restraint must be connected to an approved anchorage point within the basket.

Equipment designed by the manufacturer for exiting at heights must comply with all pertinent regulations and SLAC requirements.

Important Wearing fall restraint or arrest equipment does not permit the wearer to climb out of the basket onto another surface, stand on the basket's railings, or use planks or other unapproved methods to gain higher elevation.

For details on fall protection systems and requirements, see Chapter 45, "Fall Protection".

2.4 Hazard Control

- Assess if electrical hazards are present. A MEWP used near unprotected or exposed electrical systems must be electrically insulated.

  In addition, work must comply with SLAC electrical work requirements as outlined in Chapter 8, "Electrical Safety", which includes guidance concerning the *limited approach* or *arc flash boundary*. The maximum distance applies.

  All electrical tests must conform to the requirements of the applicable ANSI standard or equivalent direct current voltage test approved by the equipment manufacturer or an equivalent entity.

- Do not use a MEWP during storm conditions of any kind, including high wind, or when equipment or materials are covered with ice or snow.

- Stabilize the MEWP before operating it: ensure that it is on stable, flat, and structurally sound flooring or ground. Unless designed for such use, MEWPs must not be operated on inclined surfaces. The procedure for maintaining stability must be clearly outlined in the special warnings section and the user must not deviate from the manufacturer's instruction. (See MEWP: Equipment Requirements.)

- If traffic is present in the work area, implement traffic control measures such as placing safety cones or barricades or roping the area off.

- In operations producing small debris and chips or using small tools and materials and where persons are required to work or pass under the equipment, make sure there are screens between the toeboards and guardrails. The screen must extend along the entire opening and consist of No. 18 guage US standard wire with 0.5 inch mesh, or equivalent.

2.5 Proper Use

- Assemble, use, and disassemble units following the manufacturer's instructions.

  If the manufacturer is no longer in business and instructions are no longer available, assembly and erection must be performed by a qualified person under the direction of registered professional engineer experienced in the design of elevating work platforms or aerial devices.

- Position outriggers, when used, on pads or a solid surface. All outriggers must be equipped with hydraulic holding valves or mechanical locks at the outriggers.

- Install wheel chocks, if safe to do so, before using an aerial device on an incline.

- Remain inside the protective guardrails of any elevated fixed platform, elevating work platform, or aerial device. Do not sit or stand on railings, or use planks or boards to gain access to a higher elevation or to climb off the MEWP.

- Close the mid and top chains, railing, and gate enclosures before elevating the device.

- Do not belt to an adjacent pole, structure, or equipment while working from an aerial device.
- Do not support the aerial baskets or platform by adjacent structure(s) when workers are on the platform or in the basket while in an elevated position.
- Do not exceed the maximum operating weight capacity (including personnel, equipment, supplies, and tools).
- When the platform is supporting its rated work load by a system of wire ropes or lift chains, or both, do not use a safety factor of the wire rope or chain system of less than 8 to 1 based on ultimate strength.
- Do not move a MEWP while the basket is elevated and occupied unless the equipment is designed for this activity. Such travel must be conducted in accordance with all applicable regulations and standards. Do not travel with the lift in the elevated position. Minor positioning adjustments can be made under the supervison of the spotter.
- Do not use a MEWP as a crane.
- Do not allow unstable objects such as barrels, boxes, loose brick, tools, debris to accumulate on the floor of the MEWP.
- Make sure proper ventilation is provided when operating internal combustion equipment indoors.
- Keep the operator's manual in a weatherproof container on each MEWP.

2.6 No Idling

Diesel-fueled off-road vehicles and equipment, including MEWPs, may not idle for more than five consecutive minutes. The idling limit does not apply to idling

- When queuing
- To verify the vehicle is in safe operating condition, to ensure safe operation of the vehicle, or to bring the machine system to operating temperature;
- For testing, servicing, repairing or diagnostic purposes;
- Necessary to accomplish work for which the vehicle was designed (such as operating a crane).

(See Chapter 30, "Air Quality".)

2.7 Storage / Parking

The person in charge of the MEWP (operator or custodian) must ensure the following:

- The MEWP is parked in its designated space. If there is none, the MEWP must be parked away from high traffic areas.
- The MEWP is secure and stabilized, as necessary, with the basket positioned to prevent unauthorized access to the basket and controls. During inclement weather the basket must be lowered to prevent damage.
- The keys are returned to the MEWP custodian or designated key repository.

3 Forms

The following forms and systems are required by these requirements:

- None

4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- None

5 References

SLAC Environment, Safety, and Health Manual (SLAC-I-720-0A29Z-001)

- Chapter 47, "Mobile Elevating Work Platforms"
  - MEWP: Equipment Requirements (SLAC-I-730-0A21S-058)
  - MEWP: Inspection Procedures (SLAC-I-730-0A21C-008)
- Chapter 8, "Electrical Safety"
- Chapter 30, "Air Quality"
- Chapter 45, "Fall Protection"

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Chapter 47: Mobile Elevating Work Platforms

Equipment Requirements

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1 Purpose

The purpose of these requirements is to ensure *mobile elevating work platforms (MEWPs)* meet applicable standards and are maintained in good working order. They cover design, marking, inspection, maintenance, and modification of MEWPs. They apply to workers (as *operators*), *custodians,* and Fleet Services.

2 Requirements

Any MEWP brought on-site – SLAC-owned, leased, rented, and equipment owned by subcontractors – must be designed and manufactured in accordance with applicable standards (see Section 5, "References") and marked, inspected, maintained, and modified following the requirements below.

2.1 Controls

All controls must be clearly labeled and guarded to prevent accidental operation. MEWP control panels must require dual activation by the operator to activate the directional (horizontal or vertical movement) controls. Time-delay ramping feature activation controls are not permitted.

Authorized controls include the following:

- Joystick equipped with an enable switch that has a time-out function of 10 seconds or less (non-locking or spring loaded)
- Joystick with guarded trigger mechanism
- Joystick with a separate enable switch (continuously pressed)
- Joystick with a pull-up trigger
- Joystick and foot pedal

Controls not on this list must be approved by authorized ESH personnel.

2.1.1 Upper and Lower

Any powered MEWP must have both upper and lower control devices. The upper control device must be in or beside the platform, within easy reach of the operator. The lower control device must be able to lower the platform when the operator is in jeopardy

An emergency stopping device must be provided at both the upper and lower controls.

2.2 Guarding

All rotating shafts, gearing, and other moving parts must be guarded to conform with Group 6 of the General Industry Safety Orders.

2.3 Fall Protection

MEWPs must have the following:

- Toe boards at sides and end that are at least 3.5 inches high
- A hinged trap access door, if applicable
- A platform that must be at least 16 inches wide
- Automatic safety device or system to prevent free fall of the platform the power supply or elevating system fail
- Critical components of the hydraulic or pneumatic system having a bursting strength that exceeds the pressure attained when the system is subjected to the equivalent of 4 times the rated work load. Critical components are those in which a failure would result in a free fall or free rotation of the boom. All non-critical hydraulic components must have a bursting safety factor of at least 2 to 1.

The platform deck must be equipped with a guardrail or other structure around its upper periphery at least 42 inches high, plus or minus 3 inches, with a midrail. (Chains or the equivalent may be substituted where they give equivalent protection.)

Where the guardrail is less than 39 inches high, an approved personal fall protection system as defined in 8 CCR 3207 must be used in accordance with the requirements of 8 CCR 3648(o).

2.4 Marking

A plate or other legible marking verifying that the MEWP is designed and manufactured in accordance with the applicable standard must be conspicuously displayed and bear the following information:

1. Make, model, and manufacturer's serial number
2. Rated capacity, including maximum capacity at the platform's maximum height
3. Platform height, including maximum travel height
4. Maximum recommended operating pressure of any hydraulic or pneumatic system(s)
5. Any applicable operation restrictions and cautions
6. Operating instructions
7. Manufacturer's rated line voltage (dielectric capability)
8. Alternative configurations require, in addition to the above:
   - Chart, schematic, or scale showing capacities of all combinations in their operating positions
   - Caution or restrictions or both of operation of all alternate or combinations of alternate configurations

2.5 Inspection

MEWPs must pass an initial inspection, conducted by a *custodian*, when first brought on-site and a pre-use inspection, conducted by the operator, before each shift (see MEWP: Inspection Procedures).

2.5.1 Non-SLAC Equipment

Before bringing a non-SLAC-owned MEWP on-site, the custodian will verify that the vehicle meets the minimum requirements of this program.

2.6 Maintenance

Custodians in coordination with Fleet Services will establish and follow a program of regular maintenance to ensure that MEWPs remain in safe operating condition. Custodians will ensure maintenance records are kept for a minimum of three years and remain available upon request.

Only employees of Fleet Services or a third-party approved by it are permitted to maintain or repair MEWPs.

2.7 Modification

No modifications or additions to MEWPs will be performed without written authorization from the manufacturer.

3 Forms

The following forms and systems are required by these requirements:

- None

4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- The custodian will ensure inspection records are kept for a minimum of three years and made available upon request.
- Fleet Services will maintain records of repair for each MEMP for a minimum of three years that include the date of the work, a description, and the person or entity that performed the work

5 References

SLAC Environment, Safety, and Health Manual (SLAC-I-720-0A29Z-001)

- Chapter 47, "Mobile Elevating Work Platforms"

  - MEWP: Operating Requirements (SLAC-I-730-0A21S-008)
  - MEWP: Inspection Procedures (SLAC-I-730-0A21C-008)
- Chapter 45, "Fall Protection"

Other Documents

- Title 8, *California Code of Regulations*, "Industrial Relations", Division 1, "Department of Industrial Relations", Chapter 4, "Division of Industrial Safety", Subchapter 7, "General Industry Safety Orders", Group 1, "General Physical Conditions and Structures", Article 1, "Definitions", Section 3207, "Definitions" (8 CCR 3207)
- Title 8, *California Code of Regulations*, "Industrial Relations", Division 1, "Department of Industrial Relations", Chapter 4, "Division of Industrial Safety", Subchapter 7, "General Industry Safety Orders", Group 4, "General Mobile Equipment and Auxiliaries", Article 24, "Elevating Work Platforms and Aerial Devices" (8 CCR 3636–3648)
- American National Standards Institute (ANSI)/Scaffold Industry Association (SIA)
  - ANSI/SIA A92.2, "Vehicle-mounted Elevating and Rotating Aerial Devices" (ANSI/SIA A92.2)
  - ANSI/SIA A92.3, "Manually Propelled Elevating Aerial Platforms" (ANSI/SIA A92.3)
  - ANSI/SIA A92.5, "Boom-supported Elevating Work Platforms" (ANSI/SIA A92.5)
  - ANSI/SIA A92.6, "Self-propelled Elevating Work Platforms" (ANSI/SIA A92.6)

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Chapter 47: Mobile Elevating Work Platforms

Inspection Procedures

Product ID: 289 | Revision ID: 2356 | Date published: 27 July 2021 | Date effective: 27 July 2021
URL: https://www-group.slac.stanford.edu/esh/eshmanual/references/mewpProcedInspect.pdf

1 Purpose

The purpose of these procedures is to ensure that a *mobile elevating work platform (MEWP)* is safe to operate before it is used. They cover initial inspections, when the MEWP is first brought on-site and immediately after service, maintenance, or repair, and pre-use inspections before each shift. They apply to workers (as *operators*) and *custodians*.

2 Procedures

2.1 Initial

Step	Person	Action
1.	Custodian	Conducts initial inspection when MEWP is first brought on-site and after service, maintenance, or repair, using the MEWP: Inspection Checklist or a device-specific checklist
2.	Custodian	If MEWP does not pass inspection ▪ Tags it DANGER – DO NOT OPERATE ▪ Removes it immediately from service ▪ Contacts Fleet Services for repair
3.	Custodian	Keeps checklist for a minimum of three years and makes available upon request

2.2 Pre-use

Step	Person	Action
4.	Operator	Before using checks that MEWP has been inspected before each shift, and if no inspection has been done, conducts one using the MEWP: Inspection Checklist or a device-specific checklist ▪ If MEWP passes inspection, places completed checklist in a weatherproof enclosure on the MEWP, where it must remain throughout the shift, and skips to step 7. ▪ If the MEWP does not pass inspection, tags it DANGER – DO NOT OPERATE, removes it immediately from service, and contacts the custodian

Step	Person	Action
5.	Custodian	Checks that MEWP has been properly tagged out and contacts Fleet Services for repair
6.	Custodian	Conducts initial inspection after repair
7.	Operator	Performs work and returns completed checklist to MEWP custodian once work or shift is completed
8.	Custodian	Keeps checklist for a minimum of three years and makes available upon request

3 Forms

The following forms and systems are required by this procedure:

- MEWP: Inspection Checklist (SLAC-I-730-0A21J-011). Form for documenting initial and pre-use inspections of mobile elevating work platforms

4 Recordkeeping

The following recordkeeping requirements apply for this procedure:

- The custodian will keep inspection checklists for a minimum of three years and make them available upon request.
- Fleet Services will maintain records of repair for each MEMP for a minimum of three years that include the date of the work, a description, and the person or entity that performed the work.

5 References

SLAC Environment, Safety, and Health Manual (SLAC-I-720-0A29Z-001)

- Chapter 47, "Mobile Elevating Work Platforms"
  - MEWP: Operating Requirements (SLAC-I-730-0A21S-008)
  - MEWP: Equipment Requirements (SLAC-I-730-0A21S-058)

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Chapter 47: Mobile Elevating Work Platforms

Inspection Checklist

Product ID: 288 | Revision ID: 2357 | Date Published: 27 July 2021 | Date Effective: 27 July 2021
URL: https://www-group.slac.stanford.edu/esh/eshmanual/references/mewpChecklistInspect.pdf

Mobile elevating work platforms (MEWPs) must be inspected by either the *custodian* or *operator* before each shift and by the custodian when first brought on-site and immediately after service, maintenance, or repair (see MEWP: Inspection Procedures [SLAC-I-730-0A21C-008]). This checklist is to be completed to document the inspection. The completed checklist is to be kept in a weatherproof enclosure on the MEWP, where it must remain throughout the shift, and delivered to the custodian at the end of the shift. The custodian keeps it for three years from date of inspection.

Contact name:		MEWP type:		Date/time:	
Contact number:		Model #:		Shift:	
Inspected by:		Vehicle #:			

1 Equipment Inspection

Inspection Item	Result	Comment	Reported to (name)
Manufacturer's operations manual is stored on MEWP	☐ Pass ☐ Fail		
Safety decals are in place and readable	☐ Pass ☐ Fail		
Control panel is clean and all buttons/switches are clearly visible (no paint over spray, etc.)	☐ Pass ☐ Fail		
All safety indicator lights work	☐ Pass ☐ Fail		
Motion alarms are functional	☐ Pass ☐ Fail		
All guardrails are sound and in place, including basket chains and gate door	☐ Pass ☐ Fail		
All switch and mechanical guards are in good condition and properly installed	☐ Pass ☐ Fail		
On models with extension platforms, work platform extension slides in and out freely with safety locking pins in place to lock setting	☐ Pass ☐ Fail		
Work platform and extension slides are clean, dry, and clear of debris	☐ Pass ☐ Fail		
Free of defects such as cracked welds, fuel leaks, hydraulic leaks, damaged control cables or wire harness	☐ Pass ☐ Fail		
Operating and emergency controls are in proper working condition, including EMO button or emergency stop	☐ Pass ☐ Fail		
Both upper and lower controls are adequately protected from inadvertent operation	☐ Pass ☐ Fail		
Drive controls function properly and are accurately labeled (up, down, right, left, forward, back)	☐ Pass ☐ Fail		
Emergency lowering function operates properly	☐ Pass ☐ Fail		

Sample form, see URL at top of page

Inspection Item	Result	Comment	Reported to (name)
Lower operating controls successfully override the upper controls	☐ Pass ☐ Fail		
Upper drive controls interlock mechanism is functional (foot pedal, spring lock, or two hand controls)	☐ Pass ☐ Fail		
Tires and wheels are in good condition, with adequate air pressure (if pneumatic)	☐ Pass ☐ Fail		
Braking devices are operating properly	☐ Pass ☐ Fail		
Battery and hydraulic equipment in good condition	☐ Pass ☐ Fail		
Grounding strap is in place and operational	☐ Pass ☐ Fail		

2 Work Area Survey

Survey work area for potential hazardous operating conditions and ensure hazards are mitigated.

Floor/ground conditions: drop offs, holes, uneven surfaces, sloped floors, unstable ground, other:	☐ Present	☐ Not present
Housekeeping: debris, floor obstructions, cords, construction materials, supplies, other:	☐ Present	☐ Not present
Hazardous energy: electrical power cables or panels, chemical/gas/drain lines, utilities, other:	☐ Present	☐ Not present
Overhead obstructions: tight working conditions, adjacent structures, pipe racks, beams, ceiling grids, other:	☐ Present	☐ Not present

Sample form, see URL at top of page

851>Cal/OSHA Implementation Plan: Mobile Elevated Work Platforms

This form is for documenting changes to a program and the program's supporting resources (ESH Manual chapter or similar program description, training courses, databases, and so on) resulting from the adoption of the model Revolutionary Working Group (RWG) contract (see below) and the associated DOE variance from 10 CFR 851, "Worker Safety and Health Program". The purpose is to ensure consistent, concise descriptions of the resulting changes. The form is to be completed by the program manager and sent to the DOE as a cover sheet with the revised documents. The general process is as follows:

1. Program manager completes form
2. Changes to program resources made and reviewed following normal revision processes
3. DOE sent draft form and revisions
4. Changes to program resources published
5. DOE sent final form and revisions

1 Introduction

The RWG model contract and 10 CFR 851 variance are intended to simplify and improve the implementation of worker safety and health requirements by tailoring the laws, regulations, and standards that apply while achieving a level of protection equivalent to the requirements of 10 CFR 851. This mostly entails replacing federal Occupational Safety and Health Administration (OSHA) regulations (29 CFR 1910 and 1926) with Cal/OSHA regulations (8 CCR) as external requirements to be complied with but may also involve other laws and regulations and either different versions of industry standards than those cited in 10 CFR 851 or entirely different standards. (One purpose of this form is to capture the specific changes in external requirements for each program.) (For more information on this effort, see the variance application in 851>Cal/OSHA resources.)

2 Plan

Field Number	Field Name	Field
1.	Program name	Mobile Elevating Work Platforms
2.	Program manager	Johnson, Greg W.
3.	LBNL counterpart	Kincaid, Mike (SME list) (LBNL Phonebook)
4.	Program documents	*The following is a list of existing program documents, to be reviewed by the program manager to determine which will need to be revised to reflect 851>Cal/OSHA changes.* ▪ ESH Manual Chapter 47: Mobile Elevating Work Platforms ▪ MEWP: Quick Start Summary ▪ MEWP: Operating Requirements ▪ MEWP: Equipment Requirements ▪ MEWP: Inspection Procedures ▪ MEWP: Inspection Checklist
5.	Training courses	*The following is a list of existing training courses, to be reviewed by the program manager to*

Field Number	Field Name	Field
		determine which will need to be revised to reflect 851>Cal/OSHA changes. *Course materials are available for review.* ▪ ESH Course 162, Boom Lift Operator Training (ESH Course 162) ▪ ESH Course 162PRA, Boom Lift Operator Practical Training (ESH Course 162PRA) ▪ ESH Course 163, Scissor Lift Operator Training (ESH Course 163) ▪ ESH Course 163PRA, Scissor Lift Operator Practical Training (ESH Course 163PRA) ▪ ESH Course 200, Fall Protection / Authorized Training (ESH Course 200)
6.	Other program resources	*The following is a list of existing program resources, to be reviewed by the program manager to determine which will need to be revised to reflect 851>Cal/OSHA changes.* ▪ No
7.	Current external requirements	*The following is a list of current external requirements for this program, as identified in the program documents above.* ▪ Title 8, California Code of Regulations, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 7, “General Industry Safety Orders”, Group 1, “General Physical Conditions and Structures”, Article 2, “Standard Specifications and Auxiliaries”, Section 3209, “Standard Guardrails” (8 CCR 3209) ▪ Title 8, California Code of Regulations, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 7, “General Industry Safety Orders”, Group 1, “General Physical Conditions and Structures”, Article 2, “Standard Specifications and Auxiliaries”, Section 3210, “Guardrails at Elevated Locations” (8 CCR 3210) ▪ Title 8, California Code of Regulations, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 7, “General Industry Safety Orders”, Group 1, “General Physical Conditions and Structures”, Article 4, “Access, Work Space, and Work Areas” (8 CCR 3270–3280) ▪ Title 8, California Code of Regulations, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 7, “General Industry Safety Orders”, Group 4, “General Mobile Equipment and Auxiliaries”, Article 24, “Elevating Work Platforms and Aerial Devices” (8 CCR 3636–3648) ▪ American National Standards Institute (ANSI)/Scaffold Industry Association (SIA) A92.2-2001, “Vehicle-mounted Elevating and Rotating Aerial Devices” (ANSI/SIA A92.2-2001) ▪ American National Standards Institute (ANSI)/Scaffold Industry Association (SIA) A92.3-1990, “Manually Propelled Elevating Aerial Platforms” (ANSI/SIA A92.3-1990) ▪ American National Standards Institute (ANSI)/Scaffold Industry Association (SIA) A92.5-1992, “Boom-supported Elevating Work Platforms” (ANSI/SIA A92.5-1992) ▪ American National Standards Institute (ANSI)/Scaffold Industry Association (SIA) A92.6-1999, “Self-propelled Elevating Work Platforms” (ANSI/SIA A92.6-1999) *The following is a list of current external reference/guidance documents.* ▪ None
8.	Proposed external requirements	*List all the external requirements that will apply to this program. To determine, start by looking up existing external requirements in 851>Cal/OSHA resources (variance, gap analysis, and contract) and finding replacements (for example a specific section in 29 CFR 1910 to a specific section in 8 CCR or a current version of an industry standard).Where Cal/OSHA requirements are less stringent than those of 10 CFR 851, check with Jeremy Sawyer on which to use.* ***Enter “no***

Field Number	Field Name	Field
		changes" if none.
		▪ Title 8, California Code of Regulations, "Industrial Relations", Division 1, "Department of Industrial Relations", Chapter 4, "Division of Industrial Safety", Subchapter 7, "General Industry Safety Orders", Group 4, "General Mobile Equipment and Auxiliaries", Article 24, "Elevating Work Platforms and Aerial Devices" (8 CCR 3636–3648)
		▪ American National Standards Institute (ANSI)/Scaffold Industry Association (SIA) A92.2, "Vehicle-mounted Elevating and Rotating Aerial Devices" (ANSI/SIA A92.2)
		▪ American National Standards Institute (ANSI)/Scaffold Industry Association (SIA) A92.3, "Manually Propelled Elevating Aerial Platforms" (ANSI/SIA A92.3)
		▪ American National Standards Institute (ANSI)/Scaffold Industry Association (SIA) A92.5, "Boom-supported Elevating Work Platforms" (ANSI/SIA A92.5-1992)
		▪ American National Standards Institute (ANSI)/Scaffold Industry Association (SIA) A92.6, "Self-propelled Elevating Work Platforms" (ANSI/SIA A92.6)
9.	Proposed substantive changes	*Describe (list) the substantive changes to be made in the program, based on the new external requirements.* ***Enter "no changes" if none.***
		• 3640(d) Records. Records of inspections and repairs shall be maintained for at least three years and be made available to the Division upon request. ▪ Add to SLAC Chapter 47 MEWP Quick Start Summary, Section 2.3 Custodian, Section 2.5 Fleet Services ▪ Modify SLAC Chapter 47 Inspection Procedures, Section 2.1 Procedures
		• 3640(d)(1) Records of inspections shall document the date of inspection, and any deficiencies found, the corrective action recommended and identification of the persons or entities performing the inspection. ▪ Add to SLAC Chapter 47 Mobile Elevating Work Platforms, Section 2.5 Fleet Services
		• 3640(d)(2) Records of repairs shall include the date of any such repair, a description of the work accomplished and identification of the persons or entities performing the work. ▪ Add to SLAC Chapter 47 Mobile Elevating Work Platforms, Section 2.5 Fleet Services
		• 3642(a) The platform deck shall be equipped with: A guardrail or other structure around its upper periphery that shall be 42 inches high, plus or minus 3 inches, with a midrail. (Chains or the equivalent may be substituted where they give equivalent protection.) Where the guardrail is less than 39 inches high, an approved personal fall protection system as defined in Section 3207 of these Orders shall be used in accordance with the requirements of Section 3648(o) of this Article. ▪ Add to SLAC Chapter 47 Operating Requirements, Section 2.3 Fall Protection
		• 3642(d)

Field Number	Field Name	Field

Any powered elevating work platform shall have both upper and lower control devices. Controls shall be plainly marked as to their function and guarded to prevent accidental operation. The upper control device shall be in or beside the platform, within easy reach of the operator. The lower control device shall have the capability to lower the platform where the operator's safety is in jeopardy

- Add to SLAC Chapter 47 Equipment Requirements, Section 2.1 Controls

- 3642(e)
  An emergency stopping device shall be provided at the upper controls of elevating work platforms.
  - Add to SLAC Chapter 47 Equipment Requirements, Section 2.1 Controls
- 3642(f)
  Elevating Work Platforms shall include:
  3642(f)(1)
  Toe boards at sides and end which shall not be less than 3 ½ inches high.
  3642(f)(2)
  A hinged trap access door, if applicable.
  3642(f)(3)
  A platform whose minimum width shall not be less than 16 inches.
  - Add to SLAC Chapter 47 Equipment Requirements, Section 2 Requirements (May need to add sub-section for equipment requirements.
- 3643
  Guarding of moving parts.
  All rotating shafts, gearing, and other moving parts shall be guarded to conform with Group 6 of the General Industry Safety Orders.
  - Add to SLAC Chapter 47 Equipment Requirements, Section 2 Requirements
- 3645(b)
  Procedure for maintaining stability must be clearly outlined in the special warnings section [see 3638(c)]. The user shall not deviate from the manufacturer's instruction.
  - Add to SLAC Chapter 47 Operating Requirements, Section 2.4 Hazard Control (3rd bullet point)
- 3646(a)
  No employee shall ride, nor tools, materials, or equipment be allowed on a traveling elevated platform unless the following conditions are met:
  3646(a)(1)
  The travel seed at Maximum Travel Height does not exceed 3 feet (0.9m) per second.
  3646(a)(2)
  Self-propelled units shall be equipped with electrical or other interlock means which will prevent driving them with the platform height greater

Field Number	Field Name	Field
		than the Maximum Travel Height or at speeds greater than permitted at Maximum Travel Height. 3646(a)(3) The surface upon which the unit is being operated is level with no hazardous irregularities or accumulation of debris which might cause a moving platform to overturn. ▪ Add to SLAC Chapter 47 Operating Requirements, Section 2.5 Proper Use • 3646(b) Units shall be assembled, used and disassembled in accordance with the manufacturer's instructions. ▪ Add to SLAC Chapter 47 Operating Requirements, Section 2.5 Proper Use • 3646(g) Employees climbing or descending vertical ladders shall have both hands free for climbing. Note: Employees should remove foreign substances, such as mud or grease from their shoes. ▪ Add to SLAC Chapter 47 Operating Requirements, Section 2.5 Proper Use • 3646(j) In operations involving production of small debris, chips, etc., and the use of small tools and materials, and where persons are required to work or pass under the equipment, screens shall be required between toeboards and guardrails. The screen shall extend along the entire opening, shall consist of No. 18 guage U.S. Standard wire ½ in mesh, or equivalent. ▪ Add to SLAC Chapter 47 Operating Requirements, Section 2.4 Hazard Control • 3648(a) Aerial baskets or platforms shall not be supported by adjacent structure(s) when workers are on the platform or in the basket while in an elevated position. ▪ Add to SLAC Chapter 47 Operating Requirements, Section 2.5 Proper Use • 3648(d) Belting of to adjacent pole, structure, or equipment while working from an aerial device shall not be permitted. ▪ Add to SLAC Chapter 47 Operating Requirements, Section 2.5 Proper Use -or- Section 2.3 Fall Protection • 3648(g) When elevating personnel with the vehicle stationary the braking system must be set. ▪ Add to SLAC Chapter 47 Operating Requirements, Section 2.5 Proper Use • 3648(h) Provided they can be safely installed, wheel chocks shall be installed before

Field Number	Field Name	Field
		using an aerial device on an incline. ▪ Add to SLAC Chapter 47 Operating Requirements, Section 2.5 Proper Use • 3648(i) When used, outriggers shall be positioned on pads or a solid surface. All outriggers shall be equipped with hydraulic holding valves or mechanical locks at the outriggers.]
10.	Additional proposed substantive changes	*Describe (list) the substantive changes to be made in the program, in addition to those based on the new external requirements. For example, those due to stakeholder input, other reviews and audits, operating experience.* ***Enter "no changes" if none.*** • 3638(e)(1) If manufacturer is no longer in business and instructions are no longer available, assembly and erection shall be performed by a qualified person under the direction of registered professional engineer experienced in the design of elevating work platforms or aerial devices. • 3638(g) All electrical tests shall conform to the requirements of the applicable ANSI standard or equivalent d.c. voltage test approved by the equipment manufacturer or equivalent entity. • 3639(a) Where the platform is supporting its rated work load by a system of wire ropes or lift chains, or both, the safety factor of the wire rope or chain system shall not be less than 8 to 1 based on ultimate strength. • 3639(b) All critical components of a hydraulic or pneumatic system used in a work platform shall have a bursting strength that exceeds the pressure attained when the system is subjected to the equivalent of four times the rated work load. Critical components are those in which a failure would result in a free fall or free rotation of the boom. All noncritical hydraulic components shall have a bursting safety factor of at least 2 to 1. • 3639(c) Automatic safety devices or systems shall be provided to prevent free fall of the work platform should a failure of the power supply or elevating system occur.]
11.	Affected program documents	*List program documents affected by the changes above.* ***Enter "no changes" if none.*** ▪ ESH Manual Chapter 47: Mobile Elevating Work Platforms

Field Number	Field Name	Field		
		▪ MEWP: Quick Start Summary ▪ MEWP: Operating Requirements ▪ MEWP: Equipment Requirements ▪ MEWP: Inspection Procedures ▪ MEWP: Inspection Checklist		
12.	Affected training courses	*List training courses affected by the changes above.* ***Enter "no changes" if none.*** ▪ [ESH Course 162, Boom Lift Operator Training (ESH Course 162) ▪ ESH Course 162PRA, Boom Lift Operator Practical Training (ESH Course 162PRA) ▪ ESH Course 163, Scissor Lift Operator Training (ESH Course 163) ▪ ESH Course 163PRA, Scissor Lift Operator Practical Training (ESH Course 163PRA) ▪ ESH Course 200, Fall Protection / Authorized Training (ESH Course 200]		
13.	Other affected program resources	*List other program resources affected by the changes above.* ***Enter "no changes" if none.*** ▪ [No Changes]		
14.	Comments/Questions/Issues	*Add any comments or questions regarding applicable requirements or changes.* [Add text]		
15.	Status	☒ Initial draft (proposed changes)	☒ Draft (for DOE review)	☒ Final (published changes)
16.	Date completed	09/04/20	1/13/2021	7/27/2021