

Powered Industrial Trucks

The guideline is applicable to employees using powered industrial trucks for materials handling. The trucks may be powered by an electric motor or internal combustion engine. Powered industrial trucks include, but are not limited to, fork lifts, tow motors, lift rolls, motorized pallet jacks, order pickers, platform rider trucks, high lift straddle trucks and other pedestrian/rider-controlled lifts.

Excluded from these requirements are golf carts, tractors, and equipment that are designed to move earth or drive on public roads.

Regulations

[MIOSHA General Industry Standard PART 21, POWERED INDUSTRIAL TRUCKS](#)

[ANSI/ITSDF B56.1-2020 V \(Revision of ANSI/ITSDF B56.1a-2018\)
SAFETY STANDARD FOR LOW LIFT AND HIGH LIFT TRUCKS](#)

Training

PIT operators must be retrained every three years or when operators are observed performing unsafe acts, new equipment is acquired, or working conditions change that could affect the safe operation of the truck.

When you need operator training (certification/re-certification), contact EHS to be included in upcoming training sessions by third-party or trainers on campus. Training records need to be forwarded to EHS for file.

Upon completion of training/retraining, operator permit is issued. Keep the permit on their person or available nearby when they are operating any of the equipment they are authorized to operate. They must be able to present a permit if MIOSHA requests it.

Inspections

- Daily (Appendix A):

At the start of each shift, the operator of a powered industrial truck or a qualified employee shall perform daily checks of the equipment as required by the employer.

An operator shall promptly report any defect on the powered industrial truck to the employer.

Daily check logs need to be kept for at least 1 year.

- Annual:

EHS arranges the periodic fork/vehicle inspection of listed PITs by third-party. Contact EHS to include your PIT on the list. When separate inspection is performed (e.g. inspection associated with repair work), forward inspection report to EHS to file.

Mobile Elevated Work Platforms (MEWPs)

This guideline is applicable to employees using a personal lift, scissor lift, or boom lift, including truck mounted lifts.

Regulations

[MIOSHA General Industry Standard PART 58, AERIAL WORK PLATFORMS](#)

[ANSI/SAIA A92.22 – 2021 MOBILE ELEVATING WORK PLATFORMS \(MEWPS\)](#)

[ANSI/SAIA A92.24 – 2018 Training Requirements for the Use, Operation, Inspection, Testing and Maintenance of Mobile Elevating Work Platforms \(MEWPs\)](#)

Training

MEWP operators must be retrained every three years or when operators are observed performing unsafe acts, new equipment is acquired, or working conditions change that could affect the safe operation of the truck.

When you need operator training (certification/re-certification), contact EHS to be included in upcoming training sessions by third-party or trainers on campus. Training records need to be forwarded to EHS for file.

Upon completion of training/retraining, operator permit is issued. Keep the permit on their person or available nearby when they are operating any of the equipment they are authorized to operate. They must be able to present a permit if MIOSHA requests it.

Inspections

Daily (Appendix B):

At the start of each shift, the operator of a powered industrial truck or a qualified employee shall perform daily checks of the equipment as required by the employer.

An operator shall promptly report any defect on the MEWPs to the employer.

Daily check logs need to be kept for at least 1 year.

Annual:

EHS arranges the annual inspection of listed MEWPs by third-party. Contact EHS to include your MEWPs on the list. When separate inspection is performed (e.g. inspection associated with repair work), forward inspection report to EHS to file.

Cranes

This guideline is applicable to all University personnel, researchers, and students who are designated to operate cranes, hoists, and rigging equipment for the purpose of work, research, and academics.

Regulations

[MIOSHA General Industry Standard PART 18, OVERHEAD AND GANTRY CRANES](#)

Training

Overhead and Gantry Crane operators must be retrained every three years or when operators are observed performing unsafe acts, new equipment is acquired, or working conditions change that could affect the safe operation of the truck.

When you need operator training (certification/re-certification), contact EHS to be included in upcoming training sessions by third-party. Training records need to be forwarded to EHS for file.

Upon completion of training/retraining, operator permit is issued. Keep the permit on their person or available nearby when they are operating any of the equipment they are authorized to operate. They must be able to present a permit if MIOSHA requests it.

Inspections

Daily (Appendix C):

At the start of each shift, the operator of a powered industrial truck or a qualified employee shall perform daily checks of the equipment as required by the employer.

An operator shall promptly report any defect on the cranes to the supervisor

Daily check logs need to be kept for at least 1 year.

Annual:

EHS arranges the annual inspection of listed Cranes by third-party. Contact EHS to include your cranes on the list. When separate inspection is performed (e.g. inspection associated with repair work), forward inspection report to EHS to file.

Appendix A

Daily Inspection Checklist for Powered Industrial Trucks (sample)

Daily Inspection Checklist for Powered Industrial Trucks

Gas/Propane/Diesel Forklift

This inspection should be conducted prior to each shift

Operator _____ Truck # _____

Model _____ Date _____

	OK	Comments
KEY OFF Procedures		
Inspect Vehicle		
• Overhead guard		
• Hydraulic cylinders		
• Mast assembly		
• Lift chains and rollers		
• Forks		
• Tires		
• LPG tank and locator pin		
• LPG tank hose		
• Gas gauge		
Check engine oil level		
Examine the battery		
Check the hydraulic fluid level		
Check the engine coolant level		
KEY ON Procedures		
Check gauges		
• Oil pressure indicator lamp		
• Ammeter indicator lamp		
• Hour Meter		
• Water temperature gauge		
Test the safety equipment		
• Steering		
• Brakes		
• Front, tail and brake lights		
• Horn		
• Seat Belts		
Check the operation of the load-handling attachments		
Check the transmission fluid level		

Comments _____

If any item does not pass the inspection, turn off the PIT, tag it with a "Do Not Operate" tag, and report problems to your supervisor.

Daily Inspection Checklist for Powered Industrial Trucks

Electric Forklift

This inspection should be conducted prior to each shift

Operator _____ Truck # _____

Model _____ Date _____

	OK	Comments
KEY OFF Procedures		
Inspect Vehicle		
• Overhead guard		
• Hydraulic cylinders		
• Mast assembly		
• Lift chains and rollers		
• Forks		
• Tires		
Examine the battery		
Check the hydraulic fluid level		
KEY ON Procedures		
Check gauges		
• Hour Meter		
• Battery discharge indicator		
Test the safety equipment		
• Steering		
• Brakes		
• Front, tail and brake lights		
• Horn		
• Seat Belts		
Check the operation of the load-handling attachments		

Comments _____

If any item does not pass the inspection, turn off the PIT, tag it with a "Do Not Operate" tag, and report problems to your supervisor.

Appendix B

B.1

Daily Inspection Checklist for Mobile Elevated Working Platform ([sample](#))

Mobile Elevating Work Platform (MEWP) Pre-Use Inspection

Department				MEWP make/model:			
MEWP type:	scissor lift	<input type="checkbox"/>	personnel lift	<input type="checkbox"/>	MEWP ID:		
	aerial lift	<input type="checkbox"/>	telescoping lift	<input type="checkbox"/>	Hour meter reading:		
	boom lift	<input type="checkbox"/>	articulating lift	<input type="checkbox"/>			
Inspection conducted by (operator/inspector):					Date Click to enter date		

Power Off Checks	O K	No	N/A	Power On Checks	O K	No	N/A
1. Wheels and tires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22. Unit starts and runs properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Lights/strobes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	23. Instruments/gauges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Mirrors/visibility aids	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24. Warning lights/audible alarms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Engine/engine compartment:				25. Fuel/charge level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a. Belts/hoses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	26. Horn/audible warning device(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Cables/wires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27. Function controls:			
c. Debris	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	a. Boom/jib/lift arms – raise/lower/extend/retract	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Battery/batteries				b. Turret rotate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a. Terminals tight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	c. Drive - forward/reverse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Clean/dry/secure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	d. Steer – left/right	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Hydraulics:				e. Platform – tilt/rotate/extend	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a. Cylinders/rods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	f. Stability enhancing devices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Hoses/lines/fittings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	g. Function – enable (deadman) devices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Fluids:				28. Emergency/auxiliary controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a. Engine oil Level Leaks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	29. Safety interlocks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Engine coolant Level Leaks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	30. Braking – stops & holds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

c. Hydraulic oil	Level	Leaks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	31. Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Fuel/battery	Level	Leaks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	General	O K	No	N/A
8. Data/capacity plate			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	32. Mfr. operating manual stored on MEWP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Counterweight/Counterweight bolt(s)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	33. Safety decals/warnings/placards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Cover panels			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	34. Misc. parts – loose/missing/broken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Boom valley/under platform – leaks/debris			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Work Area Inspection	O K	No	N/A
12. Accessory plugs and cables			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	35. Drop-offs or holes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Boom/lift arms – general condition/wear			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	36. Bumps and floor/ground obstructions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Power track – lines/hoses			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	37. Debris	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Safety prop functional ??????????			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	38. Overhead obstructions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Platform– guardrails/toeboard/anchorage/gate			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	39. Energized power lines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Weather-resistant storage compartment/manuals			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	40. Hazardous locations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Control markings visible			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	41. Ground surface and support conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Other:			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	42. Pedestrian/vehicle traffic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Other:			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	43. Wind and weather conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Other:			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	44. Other possible hazards:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Report any problems found to supervisor. ALWAYS lock/tag-out unsafe equipment.

Item #	Comments/Action Items

B.2

MEWP Classifications

MEWP Group and Type Classifications

Group A
Platform stays within
tipping line of the lift



Group B
Platform can be
positioned beyond
tipping line of the lift



Type 1
Can only travel with
the platform in the
stowed position



Type 2
Operator can control
travel, with the
platform elevated,
from the chassis



Type 3
Operator can control
travel, with the
platform elevated,
from the platform



Appendix C

Overhead Crane and Hoist Inspection Checklist ([Sample](#))

This Overhead Cranes/Hoists Inspection Checklist contains **frequent** inspection requirements, **periodic** inspection requirements, and wire rope/chain inspection information for overhead cranes and hoists.

- Complete a **pre-operation inspection** using the frequent checklist items on the inspection checklist prior to crane/hoist use.
- The operator or other designated person conducts the inspection.
- Cranes/Hoists in regular use must have a documented inspection checklist at least **monthly** using the **frequent inspection**.
 - Cranes/Hoists idle for *1 to 6 months* must have a documented **frequent inspection** before use.
 - Cranes/Hoists idle for *more than 6 months* must have a documented **periodic inspection** before use (refer to instructions below).
- Deficiencies identified during the pre-operation inspection must be addressed before use.
- Inspectors must sign and date the inspection log or checklist to confirm completion.
- Inspectors must keep a record of all frequent and periodic inspections for one year.

Periodic inspections must be completed by qualified personnel. Overhead cranes and hoists in regular use must have a periodic inspection at least **annually**.

Any overhead cranes/hoists with deficiencies identified during an inspection must be tagged “out of service,” repaired, or corrected before use. All active cranes should have regular preventive maintenance performed in accordance with the manufacturer’s recommendations.

Overhead Crane and Hoist Inspection Checklist

Type of crane: _____

Crane capacity (tons): _____ Hoist capacity (tons): _____

Location: _____

Item	Inspection Frequency: * = required		Part of Crane/Hoist to be Inspected	Inspect for:	Equipment Condition:		
	Frequent (once per month)	Periodic (more than 6 months)			OK	Faulty	N/A
1	*	*	Controls and operating mechanisms (includes pendant)	Improper adjustments, excessive wear, and unusual noises; ensure all controls function properly and each performs as marked.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	*	*	Lines, Tanks, Valves, and Other Parts in Air or Hydraulic Systems	Deterioration or leakage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	*	*	Hooks	Deterioration or cracks; hooks must be thrown away immediately if: a) Throat opening is more than 15% in excess of normal throat opening or; b) Hook tip is more than 10° twist from the plane of the unbent hook. c) safety latch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Item	Inspection Frequency: * = required		Part of Crane/Hoist to be Inspected	Inspect for:	Equipment Condition:		
	Frequent (once per month)	Periodic (more than 6 months)			OK	Faulty	N/A
4	*	*	Chains and End Connections	Excessive wear, twist, stretch or distortion of links beyond manufacturer's specs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	*	*	Safety Devices, Belt-Chain Gear Guards	Improperly adjusted, missing, or broken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	*	*	Outriggers	Locking devices and general condition foundation and cribbing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	*	*	Fire Extinguisher (readily accessible)	Missing or discharged	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	*	*	Pre-operational test; upper limit switch operating properly	Verify proper operation of the upper limit and lower limit devices under no-load conditions. Listen for unusual sounds when operating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		*	Boom and Crane Structure	Bent or twisted parts broken welds, cracks, dents, deformation, heavy rust	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10		*	Bolts and Rivets	Loose or missing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11		*	Sheaves and Drums	Excessive wear, cracks			

Item	Inspection Frequency: * = required		Part of Crane/Hoist to be Inspected	Inspect for:	Equipment Condition:		
	Frequent (once per month)	Periodic (more than 6 months)			OK	Faulty	N/A
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12		*	Pins, Bearings, Shafts, Rollers, Gears, Locking and Clamping Devices	Excessive wear, distortion, cracks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13		*	Brake System	Excessive wear or improper operation of brake system parts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14		*	Indicators (Load, Wind, Boom Angle)	Significant inaccuracy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15		*	Chain Drives, Sprockets	Excessive wear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16		*	Electrical Apparatus	Deterioration of wiring, worn or dirty controls, poor connections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Wire Rope/Chain Inspection Checklist

Item	Inspection Frequency: * = required		Part of Crane/Hoist to be Inspected	Inspect for:	Equipment Condition:		
	Frequent (once per month)	Periodic (longer than 6 months)			OK	Faulty	N/A
1	*	*	Reduction in diameter	Remove wire rope from service if reduction from nominal diameter is greater than 5%.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	*	*	Broken wires	4 broken wires in 1 strand, or 12 broken wires in all strands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	*	*	Flat spots	On outer wires where wires <2/3 normal thickness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	*	*	Distortion – Core failure	Severe kinking, crushing bird caging, displaced wires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	*	*	Chain links Wear/distorted	Gouges, nicks, corrosion, weld spatter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	*	*	Chain links stretched	Chain length > 1.5 – 2.5 % longer (powered versus manual) than unused	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	*	*	Heat damage	From any cause	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	*	*	Wires at end connections	Corroded or broken wires at end connections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Item	Inspection Frequency: * = required		Part of Crane/Hoist to be Inspected	Inspect for:	Equipment Condition:		
	Frequent (once per month)	Periodic (longer than 6 months)			OK	Faulty	N/A
9	*	*	End connections	Corroded, cracked, bent, worn or improperly applied end connections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	*	*	Wire rope/chain operation	Not noisy; no binding and feeds smoothly; chains are lubricated per original equipment manufacturer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Inspector notes:

Note: Any deficiencies should result in taking the crane out of service and the crane should not resume service until the deficiencies are addressed. Keep all records on file for 1 year after inspection date.

