



**COMPANY
HEALTH & SAFETY
PROGRAM**

Issue: A
Date: 4/20/2009
Rev: 4
Date: 11/15/17
Authorized: *MJM*

**Title: Construction Equipment & Crane
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1.0 PURPOSE

The purpose of this section is to provide guidelines for use of construction equipment that will:

1. Assist in maintaining a safe working environment;
2. Govern operator use of equipment; and
3. Ensure proper care and maintenance of equipment.

It is the policy of PPP to permit, within company authority, only trained and authorized employees to operate equipment or machinery.

2.0 SCOPE

This section includes PPP's procedures for equipment inspection, operator training, operator authorization, maintenance, and equipment record keeping. Equipment covered by this section includes:

1. Mobile cranes;
2. Boom trucks;
3. Powered industrial trucks (forklifts);
4. Aerial work platforms;
 - a. Boom lifts
 - b. Scissor lifts
5. Suspended personnel platforms (manbaskets); and
6. Utility carts/trucks.

Every construction equipment operator is in charge of a valuable and, if not handled properly, potentially dangerous piece of equipment. They must be aware of what the equipment can do, and of equipment limitations. These guidelines address general usage requirements. PPP



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highly stresses adherence to operator manuals and manufacturer recommendations .

3.0 INDEX TO SECTION

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 - 9.0 **General Requirements for Mobile Equipment**
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4.0 MOBILE CRANE AND BOOM TRUCK INSPECTION PROCEDURES

PPP's authorized operators of mobile cranes and boom trucks are allotted time prior to each shift of work to perform a thorough inspection of the equipment. They shall use PPP Form: S.EISL.1, Equipment Inspection/Service Log, as an inspection checklist and documentation of necessary repairs. Inspection of components that are designated as weekly shall be done at the beginning of each workweek, and those designated as monthly shall be done at the beginning of each month. The inspection/service log shall be maintained by the operator throughout the workweek and turned in to the PPP project supervisor at the end of the week. The project supervisor shall maintain a file of inspection records on the job-site for the duration of the project.

Safety devices are required to be on all equipment and must be in proper working order before operations begin. If any of the devices are not in



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proper working order the equipment must be taken out of service and operations must not resume until the device is working properly again. Examples of safety devices may include: crane level indicator, boom stops, jib stops, foot pedal brake locks, horns, etc.

Annual inspections of PPP owned mobile cranes and the hoisting machinery of PPP owned boom trucks shall be conducted by a certified mobile crane inspector. The inspector shall utilize an OSHA/ASME compliant Annual Inspection Checklist, which may be obtained from the PPP safety director. Completed original inspection reports shall be sent to the PPP safety director. Copies of equipment's most recent annual report shall be maintained both with the equipment and on file at the site office. The PPP safety director will provide copies of inspection reports to the PPP vice president of operations. The VP of operations maintains a computer log of PPP owned crane and boom truck inspections, which he utilizes to keep required inspections current, and PPP in compliance with government regulations.

Annual inspection of the vehicle portion of a boom truck shall be performed at a dealership, by a qualified mechanic. Inspections will address the requirements of 49 C.F.R, 396, Appendix G. The same procedure shall be followed regarding the vehicle inspection paperwork as with the hoisting machinery paperwork.

Rated Load Tests-Employer shall keep and maintain written reports on rated load tests showing the test procedures and confirming the adequacy of any repairs or alterations.

Running ropes- A thorough inspection of all ropes in use shall be made at least once a month and a certification record which includes the date of inspection, the signature of the person who performed the inspection and an identifier for the ropes shall be prepared and kept on file where readily available. All inspections shall be performed by an appointed or authorized person. Any deterioration, resulting in appreciable loss of original strength shall be carefully observed and determination made as to whether further use of the rope would constitute a safety hazard.

All rope which has been idle for a period of a month or more due to shutdown or storage of a crane on which it is installed shall be given a thorough inspection before it is used. This inspection shall be for all types of deterioration and shall be performed by an appointed or authorized



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person whose approval shall be required for further use of the rope. A certification record which includes the date of inspection, the signature of the person who performed the inspection, and an identifier for the rope which was inspected shall be prepared and kept readily available.

PPP project supervisors shall be responsible to assure that rented equipment comes with appropriate inspection documentation. The job-site inspection document procedures for rental equipment shall be the same as for PPP owned equipment.

4.1 MOBILE CRANE AND BOOM TRUCK OPERATOR TRAINING

PPP authorizes only trained and qualified members of the International Union of Operating Engineers to operate mobile cranes and boom trucks. Operators must be certified on the type of equipment they are assigned to.

4.2 RIGGING TRAINING GUIDELINES

Qualified riggers must use during hoisting activities for assembly and disassembly work. Additionally, *qualified riggers* are required whenever workers are within the fall zone and hooking, unhooking, or guiding a load, or doing the initial connection of a load to a component or structure.

PPP shall provide the necessary training at no cost to effected personnel.

4.3 MOBILE CRANE AND BOOM TRUCK OPERATION SAFETY PROCEDURES

Operators of PPP mobile cranes and boom trucks shall be designated as Competent Persons for the equipment they are operating. Competent persons will meet the criteria outlined in Section No. 8 of this program. Whenever work with mobile cranes or boom trucks is to be performed by PPP, those tasks shall be addressed in a job safety analysis, outlined in Section No.37 of this program, "Safety Planning". The analysis shall take into consideration the potential hazards with regards to:

1. Overhead lines;



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2. Hand signals;
3. Barricades;
4. Crane stability/site conditions;
5. Swing radius of superstructure;
6. Housekeeping in the areas of rigging personnel;
7. Tag lines;
8. Hands and feet;
9. Rigging equipment and techniques; and
10. Personal protective equipment.

Mobile Cranes must not be set up or used unless ground conditions are able to support the equipment, any supporting materials and loads per the manufacturer's specifications.

The assembly/disassembly of equipment must be directed by a competent and qualified person in accordance with the manufacturer's procedures and prohibitions..

Whenever there is a safety concern, the operator must have the authority to stop and refuse to handle loads until a qualified person has determined that safety has been assured.

The operator shall compile with and have access to procedures applicable to the operation of the equipment. Procedures include rated capacities (load charts), recommended operating speeds, special hazard warnings, set up instructions and operator's manual. The preceding information must be kept on the equipment and accessible at all times.



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Modifications or additions that may affect the capacity or safe operation of the equipment must not be made without written approval from the manufacturer or approval from a registered professional engineer

A Qualified signal person must be provided for the following situations:

- 1) The point of operation is not in full view of the operator
- 2) The view is obstructed when the equipment is traveling
- 3) The operator or the person handling the load determines it is necessary due to site specific concerns

If it is determined that any part of the equipment, load line or load could get closer than 20 feet to a power line then at least one of the following measures must be taken:

- 1) Ensure the power lines have been de-energized and visibly grounded
- 2) Ensure no part of the equipment, load line or load gets closer than 20 feet to the power line
- 3) Determine the line's voltage and minimum approach distance permitted in Table A. ([see attachment](#))

Various customers of PPP have varying criteria for determining what may be called a *Critical Lift*, *Heavy Lift*, *Engineered Lift*, etc. When specially designated lifts involve or become the responsibility of PPP, owner or host employer procedures, within compliance of government regulations, shall be adhered to. When PPP is responsible to provide procedures for specially designated lifts, PPP shall have a qualified person produce a *Critical Lift Plan*. A PPP Job Safety Analysis (JSA) shall accompany the lift plan to identify all potential hazards associated with the critical lift and to establish safe work guidelines. The lift plan and JSA shall be reviewed by all affected employees at a Pre-Lift Meeting just prior to the lift.



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4.4 OVERHEAD & GANTRY CRANES

- **Hooks with deformation or cracks.** Visual inspection daily; monthly inspection with a certification record which includes the date of inspection, the signature of the person who performed the inspection and the serial number, or other identifier, of the hook inspected. For hooks with cracks or having more than 15 percent in excess of normal throat opening or more than 10° twist from the plane of the unbent hook refer to paragraph (l)(3)(iii)(a) of this section.
- **Hoist chains,** including end connections, for excessive wear, twist, distorted links interfering with proper function, or stretch beyond manufacturer's recommendations. Visual inspection daily; monthly inspection with a certification record which includes the date of inspection, the signature of the person who performed the inspection and an identifier of the chain which was inspected.
- **Preventive maintenance.** A preventive maintenance program based on the crane manufacturer's recommendations shall be established.
- **Maintenance procedure-Before adjustments and repairs are started on a crane the following precautions shall be taken-** The crane to be repaired shall be run to a location where it will cause the least interference with other cranes and operations in the area. All controllers shall be at the off position. The main or emergency switch shall be open and locked in the open position. Warning or "out of order" signs shall be placed on the crane, also on the floor beneath or on the hook where visible from the floor. Where other cranes are in operation on the same runway, rail stops or other suitable means shall be provided to prevent interference with the idle crane. After adjustments and repairs have been made the crane shall not be operated until all guards have been reinstalled, safety devices reactivated and maintenance equipment removed.

5.0 POWERED INDUSTRIAL TRUCK (FORKLIFT) INSPECTION PROCEDURE

Note: Forklifts addressed in this section are used on job-sites (usually rough terrain, telescoping boom units). Forklifts used at PPP's Plymouth,



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Michigan Fabrication Shop are addressed in Section No. 17 of this program, "Forklift Operations".

PPP's authorized operators of forklifts are allotted time prior to each shift of work to perform a thorough inspection of the equipment. They shall use Form S.FISL.1, Forklift Inspection/Service Log, as an inspection checklist and documentation of necessary repairs. Inspection of components that are designated as weekly shall be done at the beginning of each workweek, and those designated as monthly shall be done at the beginning of each month. The inspection/service log shall be maintained by the operator throughout the workweek and turned in to the PPP project supervisor at the end of the week. The project supervisor shall maintain a file of inspection records on the job-site for the duration of the project. PPP contracts with companies that have a scheduled maintenance and inspection service program to have quarterly and annual inspections and maintenance performed on PPP owned forklifts. It is the intent of PPP, by contracting this service, to be in compliance with government regulations and ANSI requirements, and more importantly to ensure the safety of our employees.

5.1 FORKLIFT OPERATOR TRAINING

PPP authorizes only trained and qualified members of the International Union of Operating Engineers to operate job-site forklifts. When PPP wants to assign an operator to a forklift and the operator has not had forklift training that complies with the requirements of 29 C.F.R. 1926.602(d), or training can not be substantiated, PPP will provide such training prior to issuing forklift operator authorization.

5.2 FORKLIFT OPERATION SAFETY PROCEDURES

When work with forklifts is to be performed by PPP, those tasks shall be addressed in a PPP Job Safety Analysis, outlined in Section No. 37 of this program, "Safety Planning". The analysis shall take into consideration the potential hazards with regards to:

1. Overhead lines;
2. Hand Signals;
3. Barricades;



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4. Forklift stability/site conditions;
5. Housekeeping in areas of operation;
6. Speed limits;
7. Lifting capacity; and
8. Blind spots/hidden aisles.

6.0 AERIAL WORK PLATFORM INSPECTION PROCEDURES

A pre-operation inspection shall be performed on all aerial work platforms prior to use every work shift. The operator/inspector shall utilize PPP Form S.ASLIL.1 – Aerial Scissor Lift Inspection Log for scissor lifts, and PPP Form S.ABLIL.1 – Aerial Boom Lift Inspection Log for boom lifts, or their equivalent. The equipment shall be re-inspected if it changes hands during the shift. Inspection items and procedures are listed on the attached related forms. Deficiencies must be corrected prior to operating the equipment.

Periodic and annual inspections and maintenance of PPP owned aerial work platforms is contracted to qualified companies that have a scheduled inspection and maintenance service program.

PPP project supervisors shall be responsible to assure that rented equipment comes with appropriate inspection documentation. The job-site inspection document procedures for rental equipment shall be the same as for PPP owned equipment.

6.1 AERIAL WORK PLATFORM OPERATOR TRAINING

PPP shall provide aerial work platform operator training prior to the issuing of an operator authorization permit. Training provided shall be in compliance with both: 29 CFR 1926.453 – Aerial Lifts; and MIOSHA CSS Part 32 – Aerial Work Platforms. Project supervisors shall assure that only trained and authorized employees are allowed to operate PPP equipment. Supervisors should notify the PPP safety director when training is needed.



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6.2 AERIAL WORK PLATFORM OPERATION SAFETY PROCEDURES

PPP employees shall use aerial work platforms only in accordance with the manufacturers and/or owner's operating instructions, safety procedures, and government regulations. **An approved personal fall restraint system shall be utilized and attached to the boom or basket when working from an aerial lift, do not tie off to adjacent poles or structures.** Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position. Aerial work platforms shall not be field-modified for uses other than those intended by the manufacturer, unless the modification has been certified in writing by the manufacturer or by any other equivalent entity.

These and additional procedures are taught as part of the required operator training. Site specific procedures shall be addressed in related Job Safety Analyses (Section No. 37 of this program).

7.0 MANBASKET PROCEDURES

The use of a crane or derrick to hoist employees on a personnel platform is prohibited, except when the erection, use or dismantling, by conventional means of reaching the worksite, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform or scaffold, would be more hazardous or is not possible because of structural design or worksite conditions. It shall be the responsibility of the project supervisor to determine whether or not manbasket use is necessary. When necessary, it is the project supervisor's responsibility to assure that all affected employees have been trained in manbasket safety, and to notify the PPP safety director when training is needed. Operating procedures shall be in compliance with both: 29 CFR 1926.550 (g); and MIOSHA CSS Part 10, Rules 1015a thru 1021a.

As the related MIOSHA rules are more exact than the Federal, they are attached to this section and shall be reviewed as part of a pre-lift meeting, which also constitutes training. PPP Form S.MB.2 - Manbasket Test Lift, Trail Lift and Inspection Data, shall be used as a guideline and documentation of procedures. Completed forms S.MB.2 shall be forwarded to the PPP safety director and copies maintained on file at the job-site for the duration of the project. The safety director must maintain completed forms on file at the main office for the life of the manbasket.



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7.1 MANBASKET TRAINING

The PPP safety director shall provide manbasket safety training to all PPP employees involved with suspended personnel platform work. Training shall consist of a video presentation entitled “Manbasket Safety” produced by Lifting Technologies, Inc. of Missoula, MT, along with review of an accompanying “Use and Safety Handbook” and a review of related government regulations.

8.0 UTILITY CARTS/TRUCKS

On jobs where PPP may use utility carts (e.g., gators, golf carts, etc.) the PPP project supervisor shall assure that only trained and authorized employees are allowed to operate such vehicles. Training shall consist of review of a PPP Job Safety Analysis (JSA) performed to address the site specific use of such vehicles. The JSA shall provide procedures to avoid all known potential hazards. Procedures shall include speed limits, restricted areas, capacities, seat belts, pre-operation inspection, parking/storage, security, etc. Training shall be documented with a PPP Form S.STAR.1 – Safety Training Attendance Record.

A pre-operation inspection checklist shall be procured or created relative to the vehicle(s) being used. A checklist shall be maintained on each vehicle and utilized in a pre-operation inspection by the operator prior to use on each shift.

The procedures outlined above may be superseded by owner, management contractor or host employer procedures.

9.0 GENERAL REQUIREMENTS FOR MOBILE EQUIPMENT

Only authorized employees shall be allowed to operate mobile equipment. Authorization to operate mobile equipment will be issued to employees qualifying under appropriate training and proficiency testing.

At the beginning of each shift, the operator shall inspect and check the assigned equipment, If any of the operational or safety devices are not in proper working order the equipment must be taken out of service and



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operations must not resume until the device is working properly again. Examples of safety devices may include: crane level indicator, boom stops, jib stops, foot pedal brake locks, horns, etc.

Unauthorized personnel shall not be permitted to ride on equipment unless it is equipped to accommodate passengers safely.

The operator shall make sure the warning signal is operating when the equipment is backing up.

No operator shall operate mobile equipment without the protection of an enclosed cab or approved eye protection.

Before starting the engine, the driver shall fasten seat belts and adjust them for a proper fit.

The operator shall not use, or attempt to use any vehicle in any manner or for any purpose other than for which it is designated.

The operator shall not load the vehicle/equipment beyond its established load limit and shall not move loads which because of the length, width, or height that have not been centered and secured for safe transportation.

The operator of a gasoline or diesel vehicle shall shut off the engine before filling the fuel tank and shall ensure that the nozzle of the filling hose makes contact with the filling neck of the tank. No one shall be on the vehicle during fueling operations except as specifically required by design. There shall be no smoking or open flames in the immediate area during fueling operation.

A CO2 or dry chemical fire extinguisher shall be kept in the crane cab or vicinity of the crane.

10.0 RELATED FORMS AND REGULATIONS (Attached)

- [S.EISL.1 - Equipment Inspection/Service Log](#)
- [Crane Signals Chart](#)



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- [S.FISL.1 – Forklift Inspection/Service Log](#)
- [S.ABLIL.1 – Aerial Boom Lift Inspection Log](#)
- [S.ASLIL.1 – Aerial Scissor Lift Inspection Log](#)
- [S.MB.2 - Manbasket Test Lift, Trail Lift, and Inspection Data](#)
- [MIOSHA Construction Safety Standards Part 10](#)



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REVISION HISTORY

Revision number	Description of change	Written by	Checked by	Effective date
1	Updated requirements to meet OSHA standards	George Newton	Safety	2/4/2011
2	Updated requirements to meet OSHA standards and training	George Newton	Safety	08/22/2012
	Program reviewed		GMN	4/4/2014
3	6.2 Aerial work platforms shall not be field-modified	George Newton	GMN	10/20/2014
1	Updated requirements to meet OSHA standards	Mike McCaffrey	MJM	11/18/17