Powered Mobile Equipment Program

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1. Purpose

This program has been developed with reference to Part 19 of the Alberta Occupational Health and Safety (OH&S) Code to establish guidelines to help eliminate incidents and prevent losses related to the use of powered mobile equipment (PME).

PME can be an extremely useful tool in the workplace. Used to aid in moving people, equipment, and materials it can greatly reduce worker fatigue and improve overall workplace efficiency.

2. Scope

This PME program applies to all operational activities and persons responsible for operation, use, maintenance, and/or handling of any PME under the auspices of, or on property belonging to, the University of Calgary.

3. Responsibilities

Supervisors are responsible for:

- being familiar with the PME Program;
- ensuring workers are familiar with and follow this Program;
- completing the Hazard Assessment and Control Form (HACF) prior to any work being undertaken;
- reviewing and updating the HACF post-incident or when changes to the operation are implemented (i.e. new equipment or a process is introduced);
- ensuring that all employees who may be required to operate PME have been trained and are competent to operate the equipment in their work environment;
- ensuring workers complete a Field Level Hazard Assessment (FLHA) including the identification of situations where a worker could become trapped between an object and a piece of moving equipment and prevent workers from entering these areas; unless
    - workers maintain a clearance of greater than 600 mm between the PME and the object.
- not allowing any worker to be in range of a moving part or load;
- designating walkways to separate pedestrians from areas in which PME is operated and ensuring workers use the walkways; unless
    - safe work procedures are used to protect workers in areas where PME is operating.
- immediately removing from service defective or unsafe PME that could create a hazard; unless
    - the PME is potentially hazardous but can still be operated safely. In which case, the operator must be notified of the hazard and allowed to decline operation, and the defect or condition must be repaired as soon as possible.
- equipping PME that may be used in darkness or dark environments with lights that illuminate the work area and the PME control panel;
- keeping records of inspections, preventative maintenance, and repairs performed on PME on site and making these readily available to the operator;
- maintaining training records in personnel files; and
- ensuring PME is included in a preventative maintenance program.

Workers are responsible for:

- being familiar with and following this Program;
- participating in required training, reviewing the HACF, and reviewing the PME program;
- demonstrating competency;
- being authorized by the supervisor to operate the equipment;
- understanding equipment operating instructions;
- following equipment use requirements and safe work practices;

- completing a FLHA prior to work;
- conducting and documenting pre-use inspections;
- reporting to the employer any condition that may affect the safe operation of the equipment;
- never starting the PME's engine if drive mechanisms and clutches are engaged;
- never moving a load or piece of equipment when any worker is in range of the moving load or equipment part;
- never leaving the PME unattended unless it has been secured and immobilized effectively;
- ensuring that all equipment is properly stored following use;
- notifying the supervisor if PME is found to be defective or unsafe; and
- following all health and safety standards, rules, regulations, and reporting all hazardous conditions to their supervisor immediately.

Contractors are responsible for:

- following the University's PME Program where the requirements exceed a Contractor's Program and/or the OH&S Code;
- honouring the University's contractual requirements;
- employing competent and qualified workers;
- having documentation available to indicate that all PME operators have received training and currently possess valid certification sufficient to meet Alberta OH&S Regulation 15(1) through 15(5); and
- providing appropriate equipment to complete work activities. If a situation arises where the Contractor cannot provide appropriate equipment, written approval must be obtained from Risk Management prior to the use of any equipment owned by the University.

Environment, Health & Safety is responsible for:

- periodically auditing recordkeeping to verify the documents meet or exceed the requirements listed in Part 19 of the Alberta OH&S Code;
- providing support to supervisors and workers; and
- reviewing and updating the PME program as necessary.

4. Training and Competency

Workers must complete the following:

- formal training in the safe operation of PME, including both a theoretical and practical component;
- training on each type of PME they operate; and
- be declared competent by a competent trainer based on training, experience, and a hands-on practical demonstration of competence by the operator.

Training programs must have both a theoretical and practical component as well as address the following core competencies:

- pre-operational inspection;
- start up;
- travelling with and without a load;
- load handling;
- driving on ramps and grades;
- shutdown; and
- refueling/recharging.

All operators must receive retraining for every PME they operate at intervals which will not exceed three (3) years.

Upgrade training must be given in all of the following situations:

- when unfamiliar equipment is introduced;
- when the equipment used by an operator is modified;
- when the operator moves to a different area and/or begins moving different kinds of loads;
- when applicable legislation changes;
- when deficiencies in competency and/or skill have been identified; and
- post–incident.

5. Hazard Assessment

The HACF should be completed by the supervisor with participation from workers as necessary prior to any operating activities. All workers should review the completed HACF and complete a FLHA prior to work activities.

Common hazards related to the use of PME include:

- improper equipment maintenance;
- insufficient operator training;
- overloading the equipment;
- neglecting to use seat belts and other safety equipment while operating the PME;
- neglecting to maintain full control of the PME at all times;
- neglecting to keep the cab, floor, and deck free of material, tools, or other objects, including spills of lubricants or fuel;
- improper signaling; and
- failure to report to the employer conditions which may compromise the safe operation of the equipment.

General guidelines for safe PME use:

- when unattended, PME must be properly secured;
- any worker authorized to be on the PME must be safely seated and secured while the equipment is in motion;
- audible warning devices such as back-up alarms must be loud enough to be heard above other noise in the immediate area;
- if PME is equipped with a Rollover Protective Structure (ROPS), it must also be equipped with a way to keep the operator and passengers inside the ROPS in case of equipment upset; and
- where operators of PME may be exposed to falling objects, the PME must be equipped with a falling object protective structure (FOPS).

6. Powered Mobile Equipment Inspection and Maintenance

Pre–Use and Operational Inspections

Before operating the PME, the operator needs to perform and document a pre-use inspection, as per manufacturer specifications, of both the equipment and the area around it to ensure the equipment is in safe operating condition as well as to make sure that no worker will be in danger when the equipment is started.

When the PME is in operation, the operator is to complete visual inspections of the equipment and the area around it at intervals required by manufacturer specifications or as per established operating procedures to verify hazardous situations are not developing.

If an inspection uncovers any current or potential hazards, the supervisor must be notified immediately, and the equipment must not be operated until the problem is resolved and/or the equipment has been inspected and approved for service.

A record of all inspections must be kept at the worksite and be easily accessible to the operator at all times.

Preventative Maintenance

PME must be included in a preventative maintenance program as per manufacturer specifications.

A record of all maintenance activities must be kept at the worksite and be easily accessible to the operator at all times.

7. Equipment Specific Requirements

Further information regarding equipment specific requirements can be found in Part 19 of the OH&S Code:

- All-Terrain Vehicles and Snow Vehicles – Sections 280 through 282
- Forklift Trucks – Sections 283 through 284
- Pile Driving Equipment and Practices – Sections 285 through 290
- Personal Vehicle for Work Purposes – Section 290.1.
- Concrete Pump Trucks – Section 290.2

Additional information on University requirements can be found in the University of Calgary Fleet Operations Driver's Handbook https://www.ucalgary.ca/risk/sites/default/files/teams/16/university-of-calgary-fleet-drivers-handbook-june-2019-statement-size.pdf

8. Definitions

All Terrain Vehicle (ATV)	means a vehicle like a motorcycle with four large wheels, designed for agricultural, sporting, and other off-road use.
Backhoe	means a mechanical excavator that draws toward itself a bucket attached to a hinged boom.
Boom Lift	means a manoeuvrable vehicle with an open bucket or cage at the end from which a Worker can perform aerial work such as pruning trees or repairing electrical lines.
Cherry Picker	means a machine for lifting men or materials on a platform at the end of an extendable boom, usually mounted on a carrier with wheels to provide mobility. Also known as motorized buckets, cherry pickers can hold up to three people.
Forklift	means a vehicle that has a pronged device in front that is used for lifting and carrying heavy loads.
Gator	means an all terrain utility vehicle typically with a box bed, similar in function to a pickup truck, and can have from 4 to 6 wheels.
Knuckle Lift	means a lift designed with at least two hinged-boom sections, these articulated booms allow for unhinging at certain points to make reaching higher elevations possible.
Lift Truck	means a powered industrial truck used to lift and transport materials.
Man Lift	means a motorized scaffold characterized by a bucket or platform with motorized platform capacity limited only by weight.

Pallet Jack	means a device used to move heavy packages and products from one area to another.
Pile Driver	means a machine that drives piles with a drop hammer, steam, or air hammer.
Platform Lift	means a powered device designed to raise or lower a person over a small vertical distance.
Powered Mobile Equipment (PME)	means a self-propelled machine or combination of machines, including a prime mover or a motor vehicle, designed to manipulate or move material or to provide a powered aerial device for Workers.
Pump Truck	means a manually operated device for lifting and moving pallets.
Ride on Mower	means a lawn mower you can ride on powered by a gasoline motor.
Rugged Terrain Vehicle (RTV)	means a rugged terrain vehicle.
Scissor Lift	means a motorized vehicle that has a railed platform that can be raised straight up in order to gain access and perform work on areas that are difficult to reach.
Skid Loader	means an engine-powered machine with a small rigid frame and lift arms used to attach to a wide variety of tools; commonly referred to as a 'bobcat'.
Snow Vehicle	means a motor vehicle, especially one with runners in the front and caterpillar tracks in the rear, for travelling over snow.
Trencher	means a machine or attachment used in digging trenches, also known as a 'ditcher'.
Utility-Terrain Vehicle (UTV)	a motor-driven device that is not a golf cart, low-speed vehicle, dune buggy, mini-truck, or tracked vehicle; that is designed to be used primarily off of a highway.

9. Related Documents

- Field Level Hazard Assessment (FLHA)
- Hazard Assessment and Control Form (HACF)
- University's Hazard Assessment and Control Procedure

10. References and Additional Resources

- University of Calgary Fleet Operations Driver's Handbook https://www.ucalgary.ca/risk/sites/default/files/teams/16/university-of-calgary-fleet-drivers-handbook-june-2019-statement-size.pdf

- Forklift Health & Safety Best Practices Guideline – Government of Alberta http://work.alberta.ca/documents/WHS-PUB-bp015.pdf

- Alberta Occupational Health and Safety Act, Regulation and Code http://work.alberta.ca/occupational-health-safety/307.html

- Alberta Occupational Health and Safety Code Explanation Guide
  OHS Code Explanation Guide 2009 - Alberta Human Services - Government of Alberta

- Risk Management Email
  riskmgmt@ucalgary.ca

- University of Calgary Occupational Health and Safety Policy
  http://www.ucalgary.ca/policies/files/policies/Occupational%20Health%20and%20Safety%20Policy.pdf

- EH&S Website
  www.ucalgary.ca/safety

Legislation and Standards

Part 19 of the Alberta OH&S Code outlines requirements for the safe use of PME. Standards that pertain to PME referenced in the OH&S Code include:

- SAE Standard J1029 (2007), *Lighting and Marking of Construction, Earthmoving Machinery.*
- ANSI Standard ANSI/SAE Z26.1 (1996), *Safety Glazing Material for Glazing Motor Vehicles and Motor Vehicle Equipment Operating on Land Highways – Safety Standard.*
- CSA Standard B352.0-95 (R2006), *Rollover Protective Structures (ROPS) for Agricultural, Construction, Earthmoving, Forestry, Industrial and Mining Machines – Part 1: General Requirements,* and
  - *i.* CSA Standard B352.1-95 (R2006), *Rollover Protective Structures (ROPS) for Agricultural, Construction, Earthmoving, Forestry, Industrial and Mining Machines – Part 2: Testing requirements on Agricultural tractors,* or
  - *ii.* CSA Standard B352.2-95 (R2006), *Rollover Protective Structures (ROPS) for Agricultural, Construction, Earthmoving, Forestry, Industrial and Mining Machines – Part 3: Testing Requirements for ROPS on Construction, Earthmoving, Forestry, Industrial, and Mining Machines.*
- SAE Standard J1042 (2003), *Operator Protection for General-Purpose Industrial Machines.*
- SAE Standard J1194 (1999), *Rollover Protective Structures (ROPS) for Wheeled Agricultural Tractors.*
- ISO Standard 3471: 2000, *Earth-moving machinery – Roll - over protective structures – Laboratory tests and performance requirements.*
- OSHA Standard 1928.52, *Protective Frames for Wheel-type Agricultural Tractors – Tests, Procedures and Performance Requirements.*
- SAE Standard J386 (2006), *Operator Restraint System for Off-Road Work Machines.*
- SAE Information Report J2292 (2006), *Combination Pelvic/Upper Torso (Type 2) Operator Restraint Systems for Off-Road Work Machines.*
- SAE Standard J167 (2002), *Overhead Protection for Agricultural Tractors – Test Procedures and Performance Requirements.*
- SAE Standard J/ISO 3449 (2005), *Earthmoving Machinery – Falling Object Protective Structures – Laboratory Tests and Performance Requirements.*