



INDIANA UNIVERSITY

OFFICE OF THE EXECUTIVE VICE PRESIDENT
FOR UNIVERSITY ACADEMIC AFFAIRS

University Environmental Health and Safety

Lawn Mower Safety Program

December 15, 2015

1. INTRODUCTION

1.1 Purpose

Indiana University Environmental Health and Safety (IUEHS) has developed this Program to ensure the safety of employees working with lawn mowing equipment. This Program is intended to comply with the Occupational Safety and Health Administration (OSHA) Standards contained in 29 CFR 1910.[243](#), [212](#) and ANSI B71.1-2003.

1.2 Scope

This Program applies to all Indiana University employees who may use lawn mowing equipment during the course of their work. This Program does not cover the safe use of Hand and Power Tools which is covered by the [Hand and Power Tool Safety Program](#).

2. AUTHORITY AND RESPONSIBILITY

2.1 University Environmental Health and Safety (IUEHS) is responsible for:

- 2.1.1 Developing the Lawn Mower Safety Program and revising the Program as deemed appropriate;
- 2.1.2 Developing and maintaining a general training program;
- 2.1.3 Maintaining training records; and
- 2.1.4 Periodically auditing Program implementation.

2.2 Departments and Supervisors are responsible for:

- 2.2.1 Ensuring that lawn mowing safety measures are in place according to this Program and the applicable regulatory standards;
- 2.2.2 Ensuring that all lawn mowing equipment is free from defects and are working and maintained properly;
- 2.2.3 Ensuring that all affected employees have been trained, at a minimum, in accordance to the manufacturer recommendations/guidelines/instructions and to the applicable standards outlined in the appendices of this Program;
- 2.2.4 Removing damaged lawn mowing equipment from service immediately when defects are identified;
- 2.2.5 Providing IUEHS for the respective campus with records of training performed by the department;
- 2.2.6 Conducting periodic inspections of work areas; and
- 2.2.7 Maintaining the owner's manuals and other manufacturers' materials and resources.

2.3 Employees are responsible for:

- 2.3.1 Completing the required general training provided by IUEHS and the equipment-specific training provided by the respective department;
- 2.3.2 Inspecting lawn mowing equipment for defects or hazards prior to use;
- 2.3.3 Using lawn mowing equipment safely;
- 2.3.4 Complying with the manufacturer recommendations/guidelines/instructions;
- 2.3.5 Removing lawn mowing equipment from service immediately when defects are identified; and

2.3.6 Reporting any defects to their supervisor immediately.

3. PROGRAM ELEMENTS

3.1 General Safety Requirements

- 3.1.1 Keep all mowers in good condition with regular maintenance;
- 3.1.2 Use the proper mowing equipment for the task performed;
- 3.1.3 Inspect lawn mowing equipment for defects or hazards prior to use;
- 3.1.4 Never use damaged mowers (take damaged mowers out of service immediately);
- 3.1.5 Operate mowers according to the manufacturer recommendations/guidelines/instructions;
and
- 3.1.6 Use the proper personal protective equipment (PPE).

3.2 Guards

- 3.2.1 The exposed moving parts of lawn mowing equipment shall be guarded per [IU's Machine Guarding Program](#), [29 CFR 1910.243](#), [212](#), ANSI B71.1-2003 and this Program's appendices. Safety guards must never be removed when a mower is being used. Belts, gears, shafts, pulleys, sprockets, flywheels, chains, or other reciprocating, rotating, or moving parts of mowing equipment must be guarded. Machine guards must be provided to protect the operator and others from the following:
 - 3.2.1.1 Point of operation;
 - 3.2.1.3 Rotating parts; and
 - 3.2.1.4 Flying debris.

3.3 Personal Protective Equipment (PPE)

- 3.3.1 Before working with lawn mowing equipment, consult the PPE job hazard assessment for the job you will be conducting to determine if additional PPE will be needed. At a minimum, eye protection, hearing protection and long pants shall always be worn when using lawn mowing equipment. Refer to IUEHS's [PPE Policy](#) and PPE Programs ([Eye and Face Protection Program](#), and [Foot Protection Program](#)) for specific information regarding the safe use of PPE.

4. TRAINING & RECORDKEEPING

4.1 Training Requirements

- 4.1.1 All employees shall be trained in the proper use of lawn mowing equipment. General training is provided by IUEHS through E-Training. Employees shall be trained in the following:
 - 4.1.1.1. Recognition of the hazards associated with different types of lawn mowing equipment and the safety precautions necessary for use;
 - 4.1.1.2. The PPE required during use; and
 - 4.1.1.3. Department shall provide and document equipment-specific training

4.2 Recordkeeping

- 4.2.1 Training records will be maintained by IUEHS.
- 4.2.2 Maintenance and repair records must be documented and kept by the department.

5. REFERENCES

- [29 CFR 1910.212](#)
- [29 CFR 1910.243](#)
- ANSI B71.1-2003
- [OSHA – Dangers of Roll-Overs of Riding Mowers](#)
- [IU Hand and Power Tool Safety Program](#)
- [IU PPE Policy](#)
- [IU Machine Guarding Program](#)

6. REVISIONS

New Document – December 15, 2015

APPENDIX A – GLOSSARY

Blade Enclosure Discharge Opening: An opening in a rotary mower housing for discharge of grass clippings.

Ground Fault Circuit Interrupter (GFCI): A safety device that senses hazardous electrical leakage to ground and quickly shuts off the circuit to help prevent electric shock.

Guard: Protective devices that cover power mower blades or other hazardous points of contact. Never use a mower if the required guard has been removed or is not functioning properly.

Power Rotary Lawn Mower: A grass cutting machine that utilizes a power source to rotate one or more cutting blades.

Ride-On Lawn Mower: A self-propelled ride-on machine that is generally designed for cutting grass.

Walk Behind Lawn Mower: A grass cutting machine, whether pushed or self-propelled, normally controlled by the operator walking behind the unit.

APPENDIX B – Lawn Mowing Equipment – General

Lawn mowing equipment must be equipped with safety switches and guards (if provided by the manufacturer). To prevent hazards associated with the use of lawn mowing equipment, workers shall observe the following general precautions:

General Safety:

- Read and understand the operator's manual for proper applications, limitations, operation, and hazards that are associated with the equipment;
- Operators shall direct the discharge away from people or parked cars. If a pedestrian approaches and is within range of the discharge, STOP and wait for the pedestrian to pass by. If infeasible to mow safely near pedestrians, eating areas, or vehicles, than mowing schedules shall be altered.
- Ensure electric lawn mowing equipment is properly grounded. In wet or damp locations, Ground Fault Circuit Interrupter (GFCI) outlets or GFCI extension cords shall be used;
- Ensure that cords from electric lawn mowing equipment do not present a tripping hazard;
- Keep all people not involved with the work at a safe distance from the work area;
- Maintain proper footing and balance when operating lawn mowing equipment;
- Inspect lawn mowing equipment for damage before each use. Remove all damaged lawn mowing equipment from use and tag them: "Out of Service, Do Not Use";
- Do not mow when there is insufficient lighting for the task (unless the mower is equipped with head lights);
- Do not operate mowers on slopes that exceed the angle limits specified by the manufacturer. Look for a label on the mower or information in the operator's manual;
- Before starting the engine, make sure the transmission is not in gear and the mower blade clutch is disengaged;
- Never allow extra riders on the lawn mower;
- If a large rock or stump is hit, stop the mower and inspect the blades and shaft for damage. If damage is found, take the mower out of service until repairs have been made;
- Keep hands and feet away from moving blades and hot parts;
- When refueling gas-powered mowers, shut the engine off, utilize a funnel or gas can with a nozzle extension that fits into the gas tank opening. If a funnel or nozzle are not used, then allow the engine to cool before refueling; and
- Wear appropriate personal protective equipment (PPE) as outlined in section 3.3. In addition, if working in close proximity to vehicular traffic, a visibility vest shall also be worn.

General Requirements:

- Power lawnmowers of the walk-behind, riding-rotary, and reel power lawnmowers shall be guarded in accordance with the machine guarding requirements in [29 CFR 1910.212](#), General requirements for all machines.
- All power-driven chains, belts, and gears shall be so positioned or otherwise guarded to prevent the operator's accidental contact therewith, during normal starting, mounting, and operation of the machine.
- A shutoff device shall be provided to stop operation of the motor or engine. This device shall require manual and intentional reactivation to restart the motor or engine.
- All positions of the operating controls shall be clearly identified.
- The words, "Caution. Be sure the operating control(s) is in neutral before starting the engine," or similar wording shall be clearly visible at an engine starting control point on self-propelled mowers.
- The mower blade shall be enclosed except on the bottom and the enclosure shall extend to or below the lowest cutting point of the blade in the lowest blade position.
- Guards which must be removed to install a catcher assembly shall comply with the following:
 - Warning instructions shall be affixed to the mower near the opening stating that the mower shall not be used without either the catcher assembly or the guard in place.
 - The catcher assembly or the guard shall be shipped and sold as part of the mower.

- The instruction manual shall state that the mower shall not be used without either the catcher assembly or the guard in place.
- The catcher assembly, when properly and completely installed, shall not create a condition which violates the limits given for the guarded opening.
- Openings in the blade enclosure, intended for the discharge of grass, shall be limited to a maximum vertical angle of the opening of 30 deg. Measurements shall be taken from the lowest blade position.
- The word "Caution." or stronger wording, shall be placed on the mower at or near each discharge opening.
- Blade(s) shall stop rotating from the manufacturer's specified maximum speed within 15 seconds after declutching, or shutting off power.
- In a multi-piece blade, the means of fastening the cutting members to the body of the blade or disc shall be so designed that they will not become worn to a hazardous condition before the cutting members themselves are worn beyond use.
- The maximum tip speed of any blade shall be 19,000 feet per minute.

APPENDIX C – Walk Behind Mowers

- Discharge Shute
 - The horizontal angle of the opening(s) in the blade enclosure, intended for the discharge of grass, shall not contact the operator area.
 - There shall be one of the following at all openings in the blade enclosure intended for the discharge of grass:
 - A minimum unobstructed horizontal distance of 3 inches from the end of the discharge chute to the blade tip circle.
 - A rigid bar fastened across the discharge opening, secured to prevent removal without the use of tools. The bottom of the bar shall be no higher than the bottom edge of the blade enclosure.
- Blade Enclosure
 - The highest point(s) of the front of the blade enclosure, except discharge openings, shall be such that any line extending a maximum of 15 deg. downward from the horizontal toward the blade shaft axis (axes) shall not intersect the horizontal plane within the blade tip circle. The highest point(s) on the blade enclosure front, except discharge-openings, shall not exceed 1 1/4 inches above the lowest cutting point of the blade in the lowest blade position. Mowers with a swingover handle are to be considered as having no front in the blade enclosure and therefore shall comply with paragraph 29 CFR 1910.243 (e)(2)(i).
- Mower Handle
 - The mower handle shall be fastened to the mower so as to prevent loss of control by unintentional uncoupling while in operation.
 - A positive upstop or latch shall be provided for the mower handle in the normal operating position(s). The upstop shall not be subject to unintentional disengagement during normal operation of the mower. The upstop or latch shall not allow the center or the handle grips to come closer than 17 inches horizontally behind the closest path of the mower blade(s) unless manually disengaged.
 - A swing-over handle, which complies with the above requirements, will be permitted.
- Mower Controls
 - Wheel drive disengaging controls, except deadman controls, shall move opposite to the direction of the vehicle motion in order to disengage the drive. Deadman controls shall automatically interrupt power to a drive when the operator's actuating force is removed, and may operate in any direction to disengage the drive.

APPENDIX D – Riding Rotary Mowers

- Blade Enclosure.
 - The highest point(s) of all openings in the blade enclosure front shall be limited by a vertical angle of opening of 15 deg. and a maximum distance of 1 1/4 inches above the lowest cutting point of the blade in the lowest blade position.
 - Opening(s) shall be placed so that grass or debris will not discharge directly toward any part of an operator seated in a normal operator position.
 - There shall be one of the following at all openings in the blade enclosure intended for the discharge of grass:
 - A minimum unobstructed horizontal distance of 6 inches from the end of the discharge chute to the blade tip circle.
 - A rigid bar fastened across the discharge opening, secured to prevent removal without the use of tools. The bottom of the bar shall be no higher than the bottom edge of the blade enclosure.
- Stops
 - Mowers shall be provided with stops to prevent jackknifing or locking of the steering mechanism.
- Brakes
 - Vehicle stopping means shall be provided.
- Controls
 - Hand-operated wheel drive disengaging controls shall move opposite to the direction of vehicle motion in order to disengage the drive. Foot-operated wheel drive disengaging controls shall be depressed to disengage the drive. Deadman controls, both hand and foot operated, shall automatically interrupt power to a drive when the operator's actuating force is removed, and may operate in any direction to disengage the drive.
 - A key switch, or similar device, shall be provided to prevent unauthorized operation.
 - Equip riding mowers with an operator presence control system that shuts off the blades when the operator dismounts the machine or rises out of the seat.
 - Equip riding mowers with interlocks that ensure that the engine cannot start while the mower is in gear or if the blade is engaged. Inspect mowers to ensure that operator presence systems and all safety features are always in place and operable.
- Pedal
 - Foot pedal shall have slip resistant surfaces or other means of minimizing the possibility of the operator's foot slipping off the pedals.
- ROPS (roll-over protective structure)
 - Mowers with a ROPS should also be equipped with a seat belt. Provide and use approved seat belt assemblies on all riding lawn mowers on which a ROPS has been installed.
 - If the mower a worker will be using does not have a ROPS, look for unused bolt holes or brackets near the seat or frame to see if the mower should be equipped with a ROPS. Do not operate any mower that was intended to be equipped with a ROPS without its ROPS in place. In many cases, retrofit kits are available. Contact the manufacturer to see if there is a kit for the mower you will be using.
 - Where vertical clearance does not allow for a ROPS to be in the raised (active) position, the ROPS may be temporarily placed in the lowered (inactive) position. Also, workers should not wear a seat belt while operating a riding mower with the ROPS in the lowered position. Return the ROPS to the raised position as soon as the riding mower is in an area where the vertical clearance allows its use and reconnect the seat belt.