

Instructions and study guide for qualifying to operate Fermilab Garden Club power equipment

The garden club offers two training processes, one for Grass Mower/Brush Mower only ***or*** a comprehensive Tiller/Grass Mower/Brush Mower process.

Follow the steps below in order to be able to use the garden club power equipment -

1. Read the safety documents and operations manuals for all of the equipment pertinent to your process located online [here](#):
2. Take the appropriate test that is linked in this document. You must complete the test without missing more than **two answers** before asking for a hands-on demonstration + evaluation sessions that may be listed in the club [calendar](#).
3. You may retake the test an unlimited number of times, but if you read this document and the on-line information, you will find all of the answers.
4. Ask us to explain any missed questions to know the proper action/answer.
5. After passing the test contact us via [gardenofficers@fnal.gov] with details about when you want to attend the **hands-on evaluation session** in the garden where you will be able to demonstrate your ability to use the equipment.
6. Print out the '*Use of Power Machinery Manuals & Training Release of Liability*' found on the Garden Club website area called "Safety Documents", read & sign it and bring it with you to the hands-on evaluation session. You must turn it in before being approved to use the equipment.
7. Make sure you wear the required Personal Protective Equipment (PPE) (Close-fitting clothes and long pants, hard toe safety shoes and work gloves. Hearing protection, eye protection will be provided by the club) to the hands-on demonstration & evaluation.
8. Attend one of the hands-on demonstration & evaluation sessions to demonstrate proper use of the equipment. Details for these sessions will be announced on the garden club mailing list.

Notice: Failure to come prepared with proper PPE **and** a signed power machinery manuals and release form found [here](#), **will** disqualify you from the evaluation session.

Instructions Common to ALL Fermilab Garden Club Power Equipment

- Take all training and be approved before operating Fermilab Garden Club power equipment.
- Follow all safety guidelines included in the relevant equipment operations manuals.
- Wear all garden club required PPE when using any of the equipment. The PPE required is; Close-fitting clothes and long pants, hard toe safety shoes and work

gloves. Hearing protection, eye protection will be provided by the club, they are located in the mower shed above the flammables cabinet.

- Please return the safety glasses when you are finished using them.
- Consider reusing the ear plugs if they're not too dirty to help save club funds.
- Do not wear jewelry or loose fitting clothes that can get caught or hung up on a machine and cause injury.
- Check that the equipment is in safe working order and serviced before leaving the shed area. Do not operate the equipment if the equipment is not in safe working order. This includes -
 - Safety guards and devices of the equipment to ensure that they are in proper working order.
 - Inspect the blades/tines to make sure they are not bent or missing a piece.
 - Inspect the blades/tines to make sure area is clear of wire, strings, & weeds.
- Check the equipment oil level.
 - If the dipstick screws into threads with many turns, just unscrew it, wipe it off and push it back in without screwing it back in, then check the level on the dip stick.
 - If the dipstick cap uses a quick 1/4 turn lock mechanism, open and wipe the dip stick, push it back in to lock and then pull it back out & check the oil level.
 - if there is no dipstick, and the oil fill cap is low on the engine housing, it will always be a screw cap, fill the oil to the top of the opening (not just so you can see the oil, but to the top!)
- Never smoke around gasoline or while filling the equipment.
- Check the equipment fuel level before leaving the shed area and fill if necessary. Note; don't fill to the very top, leave air-space for expansion.
 - If you spill gasoline, wipe it up before starting the equipment.
- Do not take the cap off or add fuel to a hot engine. If you refuel during the day, bring the equipment back to the shed, turn the engine off and allow the engine to cool first.
- If all the gas cans are empty in the flammables cabinet, take a can that has a cap that closes securely to the nearest gas station, fill the can, save the receipt, and turn it into Jim Wollwert for reimbursement.
 - Never fill the gas container in a vehicle.
 - Ground yourself on a metal part of the pump before and after filling the can.
 - Always place the container on the ground before filling and make sure the nozzle is touching the container to prevent static buildup.
- Before you use the equipment, walk the area and clear all hazards, such as rocks, and hidden debris like wire, stakes and miscellaneous materials. Injuries and property damage may occur from flying debris.

- While using the equipment, if you see any debris that you missed in your initial inspection, stop using the equipment, turn off the engine and pick up the debris.
- Do not attempt to clear debris while the engine is still running.
- Never leave running equipment unattended.
- Never reach into blade/tine area with engine running.
- Keep feet clear of blade/tine area when engine is running.
- To avoid injury to yourself or others, pay attention to what goes on around you.
- If a person or animal approaches you while working, stop using the equipment and turn off the engine. You may resume once the work area is clear of all people and animals.
- Make sure that the equipment is completely stopped and the engine is off before you begin cleaning the equipment.
- Clean all equipment before returning it to the sheds. Lingering debris can cause unwanted buildup and potential malfunctions or breakdowns of parts, or be a potential fire hazard.
- YOU are responsible for locking the shed/gate both when getting the equipment and when returning the equipment to the shed when finished to prevent untrained people from accessing the equipment and getting hurt.
- Don't let someone else use the power equipment after you use it. Lock it up so that you are not responsible for an unapproved use of equipment and someone potentially getting hurt.
- Engage the starter recoil mechanism before quickly but smoothly pulling starter cord — don't pull it all the way to its stop — don't let the rope & handle fly back into the recoil — both of which will cause starter damage.
- Once engine starts, turn choke to run position or off, don't rely on the automated choke lever. Turn off the choke after the motor starts.
- Only grass mowers require the operator presence switch be engaged to start them.
- If the equipment requires any repairs, tag it out. Report any problems or difficulties to [gardenclub@fnal.gov] or to 331- 222-7645 (SOIL)
- After successfully completing training, go to the garden club members area website; Club members area website username = gardenclub the PW is garden2015 and look for this link: ☞ NEW! [Reserve a tiller or get a mower \(training required\)](#). NEW! ☞

Grass Mowers

We have many different brands of grass mowers that are very similar in operation

- Follow all instructions in the Common section above and all of the instructions in the operator's manuals; <http://orgs.fnal.gov/gardenclub/training/manuals.html>
- Never position the side-discharge chute toward people or cars.

- When you leave the operator's position, the mower engine should be stopped.
- All models have an operator presence switch that automatically kills the engine when the operator releases the handle.
- Do not clear the deflection chute if it becomes clogged with grass clippings while the engine is running.
- Please mow your way to and from your garden to help the club maintain the aisles.
- Before returning your mower into the shed, you should do the following; make sure the engine is off — your mower should be cleaned after each job by removing clippings from the mower deck and deflection chute — clean it behind the mower shed near the sign "Clean Mower HERE" — Tag out if a problem occurs or is found.
- Make sure the gate is locked.

Brush Mowers

We have two different brush mowers that are completely different in operation

BACHTOLD WHIPPER MOWER

- Follow all instructions in the Common section above and all of the instructions in the operators manual on the club website
- <http://orgs.fnal.gov/gardenclub/club/BachtoldWhipper.pdf>
- SAFETY
 - On/off switch on the right handle bar
 - Operator presence switch on the right handle engaged by squeezing it before engaging the blade clutch lever.
 - The blade off position of blade clutch lever is when it's closest to you standing in the operator's position.
 - Emergency Stop is; let go of the operator presence switch on the handle bar and pull the blade clutch lever toward you.
 - Shut off engine by turning off the on/off switch.
- PREPARATIONS BEFORE STARTING
 - Blade in off position (The handle is pulled back near the left handle bar)
 - Inspect the blade (look for foreign debris wrapped around the blade)
 - Check the oil
 - Throttle set midrange or more
 - Choke set halfway on and adjust from there until it starts
- HOW TO START
 - No need to engage operator presence switch to start it.
 - Pull starter cord-- should start on 2-3 tries, if won't start, adjust choke either richer or leaner

- Once engine starts, turn choke to run position (up)
- TRANSPORTING
 - Either push the mower (engine off) or use the power drive by squeezing the lever on the left handle (engine on).
 - Never allow the machine to operate without your hands holding both handle bars.
- MOWING
 - Set the throttle mid to full speed.
 - Engage the operator presence switch.
 - Start the blade turning by engaging the blade clutch similarly to the clutch in a manual transmission car. Move the lever forward slowly allowing the blade to come up to speed without killing the engine and then fully move the lever forward till it stops.
 - Stop mowing by releasing the drive clutch handle and moving the blade clutch handle back towards you.
 - NEVER reach under the mower deck with the engine on, the blade may engage at any time, due to the mower design!!! Turn off the engine!

SWISHER THE PREDATOR 24" rough cut walk behind cutter

- Follow all instructions in the Common section above and all of the instructions in the operators manual on the club website
- <http://orgs.fnal.gov/gardenclub/club/Swisher.pdf>
- SAFETY
 - The operator presence switch must be engaged, see manual.
 - Equipped with an interlock to prevent mowing in reverse gear.
 - Emergency blade stop; let go of the operator presence switch hand grip lever on the right handle bar.
 - Shut off engine by pulling throttle all the way back towards you)
- PREPARATIONS BEFORE STARTING
 - Inspect the blade and tires
 - Check the oil.
 - Set transmission to neutral
 - Throttle set midrange or more
 - Choke set on by pushing in lever
- HOW TO START
 - Engage the starter recoil mechanism and quickly pull starter cord—don't pull it all the way to its stop and don't let the rope & handle fly back into the recoil both of which will cause starter damage.
 - Once engine starts, pull choke out to run position

- TRANSPORTING
 - Use the transmission in mid speed #3 or #4. Engage the transmission by squeezing the “Ground Control” handgrip lever on the left handle (engine on).
 - Never allow the machine to operate without your hands holding both handle bars.
- MOWING
 - While the mower is not moving (transmission not engaged via the ground control lever), (may be in any forward gear, but not reverse).
 - Set the throttle to mid speed or faster.
 - Turn the blade on by engaging the blade engage drive by pushing the engagement lever located just in front of the left handle forward with your left hand, (the blade will start to turn) before releasing the blade engage drive lever, squeeze the operator presence lever on the right handle with your right hand. Now you can release your left hand from the blade engage lever. The blade will stop if you release the operator presence lever on the right handle.
 - Use the transmission in low speed #1 or #2. Engage the transmission by squeezing the “Ground Control” handgrip lever on the left handle
 - Stop mowing forward by releasing the ground control lever.
 - If you need to reverse the machine you must stop the forward movement and blade rotation by releasing the operator presence switch and ground control lever. Then move the transmission lever to Reverse.
 - NEVER reach under the mower deck with the engine on or the throttle not fully closed in the off position. The blade may move at any time.

Note: Grass & Brush Mower process STOP here, take the **mower test**: If you want Tiller training keep going and only take the tiller test which includes Mower questions (no need to take both).

Take the garden club **mower test**, which is located online here:

<http://www.classroomclipboard.com/696264> Note: this is an open book test, just open the test in a second browser window.

- The grass & brush mower training access code is: **SB5P**

Tillers

- Follow all instructions in the Common section above.
- \$8.00/hour, put envelope with money in and name on, in tiller shed lock box after using tiller.
- SAFETY

- Emergency shut off; close throttle (throttle positions are different)
- Emergency stop – On all Troy Built tillers; quickly pull up on the FORWARD / NEUTRAL / REVERSE LEVER to put it in neutral.
- Emergency stop on other tillers; release the engagement lever.
- Specific to Troybilt Tiller #6, you must squeeze (engage) the operator presence switch in order to go forward (by pushing the forward/neutral/reverse lever down).
- GARDEN PLOT PREPARATION
 - Remove all garden stakes, tomato cages, etc.(put garbage in dumpster)
 - Remove old and dried plant material, dump in waste pit.
 - Check the ground for dryness (use spade, squeeze soil in hand, if it clumps together soil is too wet.)
 - Mow or remove long grass and weeds before tilling.
 - Add compost before tilling passes if desired
- STARTING TILLER ENGINE
 - Verify that the Forward/Neutral/Reverse lever is in neutral (Troy models)
 - Verify that the tine PTO lever is OFF (on applicable Troy models)
 - Verify that tiller depth lever set to maximum height
 - Choke set to choke position on
 - Throttle set midrange to high
 - Engage the starter recoil mechanism and quickly pull starter cord—don't pull it all the way to its stop and don't let the rope & handle fly back into the recoil both of which will cause starter damage.
 - Turn off the choke after the motor starts.
- TRANSPORTING THE TILLER (TO AND FROM THE GARDEN)
 - Tiller depth lever set to maximum height
 - Tine PTO lever OFF (on applicable models)
 - Throttle set midrange to high
 - Move wheel speed lever up for fast wheel speed or neutral to push
 - At the shed after using, turn off engine, move wheel speed lever to neutral
- USING TILLER
 - Several passes at modest depth is best and safer than one deep pass
 - Slower throttle setting on first pass + faster on next passes (digs better, safer if hidden objects)
 - Move wheel speed lever down for slow wheel speed
 - Tines engaged
 - Shift forward/neutral/reverse lever to forward

Take the garden club tiller/mower test, which is located online here:

<http://www.classroomclipboard.com/696264> Note: this is an open book test, just open the test in a second browser window. The tiller & mower training access code is: **K22P**