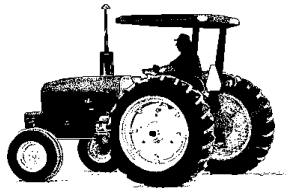


## LARGE AND COMPACT TRACTOR, AND SKID-STEER



**Contact Persons:** Mr. Eugene Schurman, Indiana County Agent, (724) 465-3880  
Mr. Delbert Voight, Lebanon County Agent, (717) 270-4391  
Mr. John Tyson, Mifflin County Agent, (717) 248-9618

### Purposes:

This event is designed:

1. To support the county 4-H agricultural engineering program.
2. To broaden the 4-H interaction experiences of youth and adults from across the Commonwealth.
3. To challenge 4-H'ers skills and knowledge in tractor driving.
4. To recognize 4-H'ers demonstrated abilities in tractor driving.
5. To better acquaint 4-H'ers with the faculty, services, and facilities of The Pennsylvania State University.

### Objectives:

This contest is designed to give 4-H members who are participating in the 4-H **small engines and tractor projects an opportunity:**

1. To demonstrate their knowledge of machinery maintenance.
2. To demonstrate their skill in operation of farm/lawn equipment.
3. To show knowledge of tractor safety.
4. To compete with other 4-H'ers.

### Eligibility:

1. Each county may enter **six** contestants (2 in large tractor, 2 in compact, and 2 in skid-steer) in this contest.
2. Participants must be at least 13 years of age and must not have reached their 19th birthday as of January 1 of the current year. See NOTE under Opportunities for national competition age requirements.
3. Participants must also have completed a minimum of one year of a small engines or tractor project and must currently be enrolled in a small engines or tractor project.

### Contest Organization and Content:

1. Large Tractor
  - A. **Written Examination:** Scoring – Questions missed X 20 = Total Penalty Points  
**References for the questions are 4-H Petroleum Power Tractor Project Books, Safe Operation of Agricultural Equipment (Hobar Publications) and the Penn State Agricultural and Biological Engineering web page titled: The Agricultural Safety and Health Web Page**  
<http://www.abe.psu.edu/extension/agsafety/index.htm>
  - B. **Parts Identification:** Scoring – Questions missed X 20 = Total Penalty Points

### Tractor Parts Identification

Parts to be identified have numbers attached to them. Select the most correct part name from this list. Write the corresponding number beside the name.

- |                                     |  |
|-------------------------------------|--|
| _____ Air Intake, Engine            | _____ Oil Drain Plug, Crankcase                  |
| _____ Alternator                    | _____ Oil Filter Cap, Crankcase                  |
| _____ Ammeter/Indicator Light       | _____ Oil Filter, Crankcase                      |
| _____ Axle Carrier, Rear            | _____ Oil Fan, Crankcase                         |
| _____ Battery                       | _____ Oil Pressure Gauge/Indicator Light, Engine |
| _____ Bearing, Ball                 | _____ Oil Pump Screen                            |
| _____ Bearing, Crankshaft           | _____ Parking Brake Control                      |
| _____ Bearing, Roller               | _____ Piston                                     |
| _____ Brake Pedal                   | _____ Piston Rings                               |
| _____ Camshaft                      | _____ Piston Wrist Pin                           |
| _____ Clutch Pedal                  | _____ P.T.O. Shield                              |
| _____ Clutch Pressure Plate         | _____ Radiator                                   |
| _____ Connecting Rod                | _____ Radiator Cap                               |
| _____ Crankshaft                    | _____ Seal, Grease/Oil                           |
| _____ Diesel Fuel Tank              | _____ Starter                                    |
| _____ Dipstick, Crankcase Oil Lever | _____ Steering Tie Rod                           |
| _____ Drawbar                       | _____ Tachometer                                 |
| _____ Engine Stop Control           | _____ Temperature Gauge/Indicator Light Coolant  |
| _____ Exhaust Manifold              | _____ Thermostat                                 |
| _____ Fan                           | _____ Throttle                                   |
| _____ Fan Belt                      | _____ Throttle Rod                               |
| _____ Flywheel, Engine              | _____ Tire Valve Stem                            |
| _____ Fuel Cap                      | _____ Valve, Engine                              |
| _____ Fuel Filter                   | _____ Valve Cover, Engine                        |
| _____ Fuel Injector Pump            | _____ Valve Cover, Gasket                        |
| _____ Fuel Injector                 | _____ Valve Push Rod                             |
| _____ Fuel Pump                     | _____ Valve Rocker Arm                           |
| _____ Fuel Tank                     | _____ Valve Spring                               |
| _____ Governor                      | _____ Warning Light, Rear                        |
| _____ Head Gasket, Engine           | _____ Water Hose                                 |
| _____ Hydraulic Hose                | _____ Water Pump                                 |
| _____ Hydraulic Reservoir           | _____ Weight Carrier                             |
| _____ Hydraulic Valve Control       | _____ Weights, Front                             |
| _____ Intake Manifold               | _____ Weights, Wheel                             |
| _____ Muffler                       |  |

C. Large Driving Course Layout Instructions and Safety Procedures

Large Tractor Safety

Procedure: Each contestant will be scored on safety throughout the contest.

Scoring:

**Starting Safely**

- |  |                      |                  |
|--|----------------------|------------------|
| 1. Failure to check transmission in neutral or park position.  | <input type="text"/> | _____ x 25 _____ |
| 2. Failure to disengage clutch while starting engine.  | <input type="text"/> | _____ x 50 _____ |
| 3. Failure to check P.T.O shaft for disengagement prior to starting engine.* (May be scored once on the two-wheel and once on the four-wheel event.) | <input type="text"/> | _____ x 50 _____ |

**Driving Safely**

- |   |                      |                   |
|---|----------------------|-------------------|
| 1. Failure to engage clutch gently.   | <input type="text"/> | _____ x 50 _____  |
| 2. Skidding or spinning tractor wheels (scuffing of inside wheel on turning does not count as skid; skid of the front tractor wheel will not count until the skid equals or is greater than the width of the tire). | <input type="text"/> | _____ x 50 _____  |
| 3. Sliding or skidding implement wheels.  | <input type="text"/> | _____ x 100 _____ |
| 4. Turning too short and fouling implement (includes jack left down).   | <input type="text"/> | _____ x 50 _____  |
| 5. Operation of tractor at unsafe speed or engine at excessive rpm.   | <input type="text"/> | _____ x 100 _____ |
| 6. Moving tractor with brake set.   | <input type="text"/> | _____ x 10 _____  |

**Mounting and Dismounting Safely**

- |   |                      |                   |
|---|----------------------|-------------------|
| 1. Failure to set both brakes before dismounting (transmission set in park or locked position counts as breaks locked). | <input type="text"/> | _____ x 50 _____  |
| 2. Failure to bring tractor to complete stop before dismounting.  | <input type="text"/> | _____ x 100 _____ |

**Other Safety (score for each offence)**

- |                                  |                      |                   |
|----------------------------------|----------------------|-------------------|
| 1. Smoking                       | <input type="text"/> | _____ x 100 _____ |
| 2. Extra riders                  | <input type="text"/> | _____ x 100 _____ |
| 3. Seat belt on tractor not used | <input type="text"/> | _____ x 50 _____  |
| 4. Running over post             | <input type="text"/> | _____ x 100 _____ |
| 5. Other                         | <input type="text"/> | _____ x _____     |

**TOTAL PENALTY POINTS**

\_\_\_\_\_

\* Physically move levers, etc. so that the judges can observe checking for correct position.

D. Large Tractor Handling: Two Wheel Event

Large Tractor Two-Wheel Driving Event  
(See course outline)

Procedure:

Two scorers should be available -- one for timing and one for measuring and observing operation.

The contestants start and warm-up tractor and on signal from official drive tractor to starting line (rear wheels on line).

Contestant signals official that he is ready to begin (with engine running, break set, in neutral). Official gives signal to start.

Drive to implement shed, spot drawbar, and attach implement (a two-wheel spreader or trailer with 8 x 12 foot frame will be used).

Pull out and back implement down alley.

Draw the implement through gates 1 and 2, around the end, and back through 3 and 4.

Line up implement and back into shed.

Unhitch, return tractor to stopping line, and stop engine (time stops when engine fan stops).

Rules:

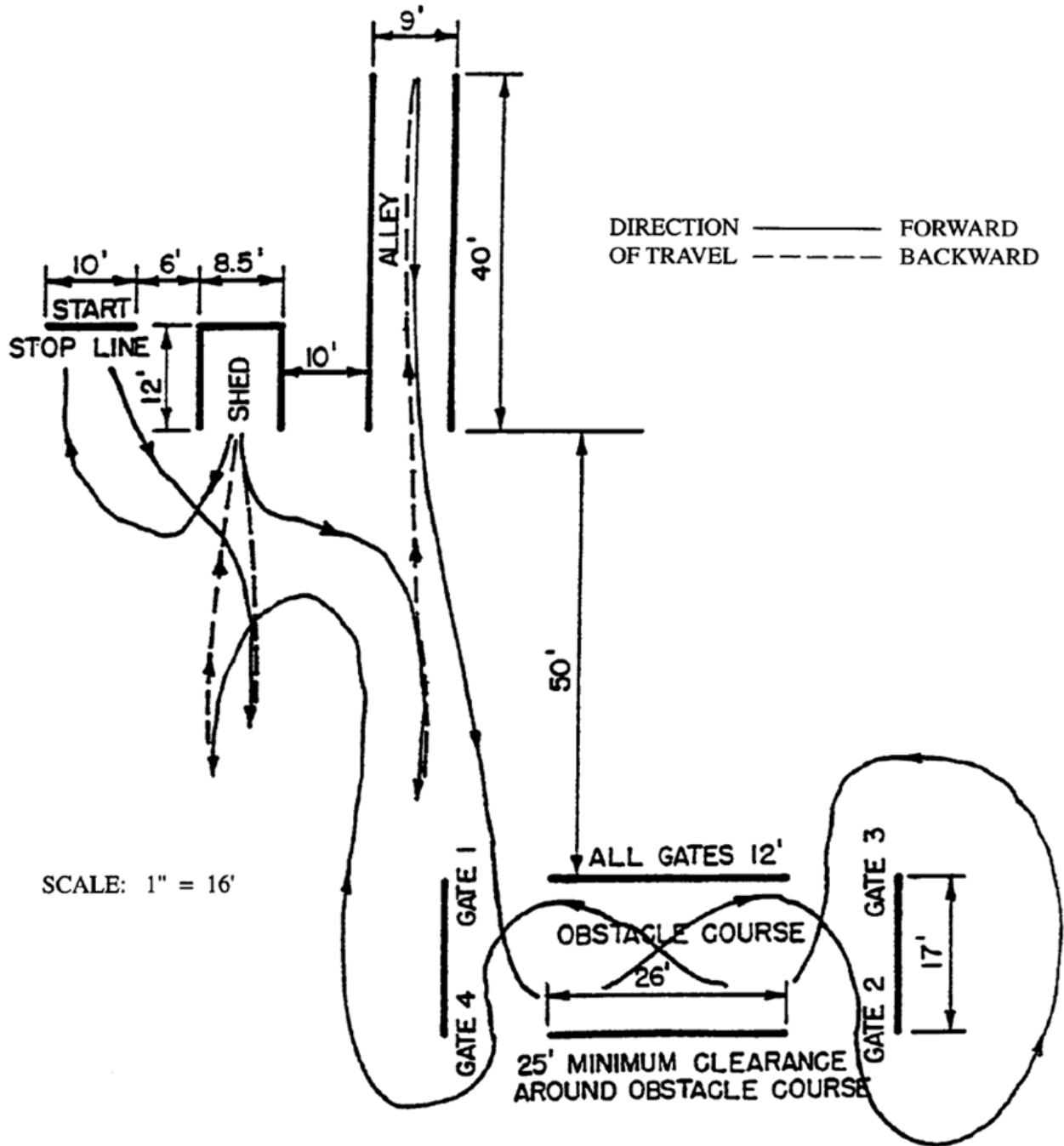
1. No assistance will be allowed in spotting. The tongue will be on ground or on jack. The operator will make hitch without moving spreader forward more than one foot. The operator will dismount to insert and remove hitch pin.
2. Whenever dismounting tractor, both brakes must be set or the gear shift lever must be in the park position.
3. Riding clutch - Using excessive throttle and controlling ground speed with clutch. May be scored once in each of: shed, alley, and obstacle courses.
4. Time begins on signal from scorer at starting line and stops when contestant reaches stopping line and the engine fan stops.

Scoring:

1. Number of complete changes of direction other than necessary in travel.		_____ x 10 _____
2. Markers or lines -- Touches		_____ x 40 _____
Stakes knocked over or lines crossed		_____ x 50 _____
3. Tractor Operation -- Stalled		_____ x 10 _____
Grated gears		_____ x 10 _____
Riding clutch (note rule 3)		_____ x 10 _____
4. Measurement in the shed (nearest 1/2 inch)		
a. Inches off center at front		_____ x 10 _____
b. Inches off center at rear		_____ x 10 _____
c. Inches greater than one from center-rear post (within one inch is perfect)		_____ x 10 _____
5. a. Time - minutes _____ seconds _____ total seconds		_____ x 1/5 _____
b. Time in excess of 8 minutes, 100 points		_____
<b>TOTAL PENALTY POINTS</b>		_____

One thousand points will be added to the score of those who do not complete the course.

**TWO WHEEL DRIVING COURSE**



E. Large Tractor Handling: Four Wheel Event

Large Tractor Four-Wheel Driving Event  
(See course outline)

Procedure:

Three scores should be available -- one for timing and recording scores and two for measuring and observing operation.

The contestants start and warm-up tractor and on signal from official drive tractor to starting line (rear wheels on line).

Contestant signals official that he is ready to begin (with engine running, brake set, in neutral). Official gives signal to start.

Drive to implement shed, spot drawbar, and attach implement (a four-wheel wagon with 8 x 14 foot frame will be used.)

Pull out to the left, go through the two gates, and back wagon into the shed. The tractor and wagon tongue (but no part of the 8' x 14' frame) may cross the 20' line without penalty.

Unhitch, return tractor to stopping line, and stop engine (time stops when engine fan stops).

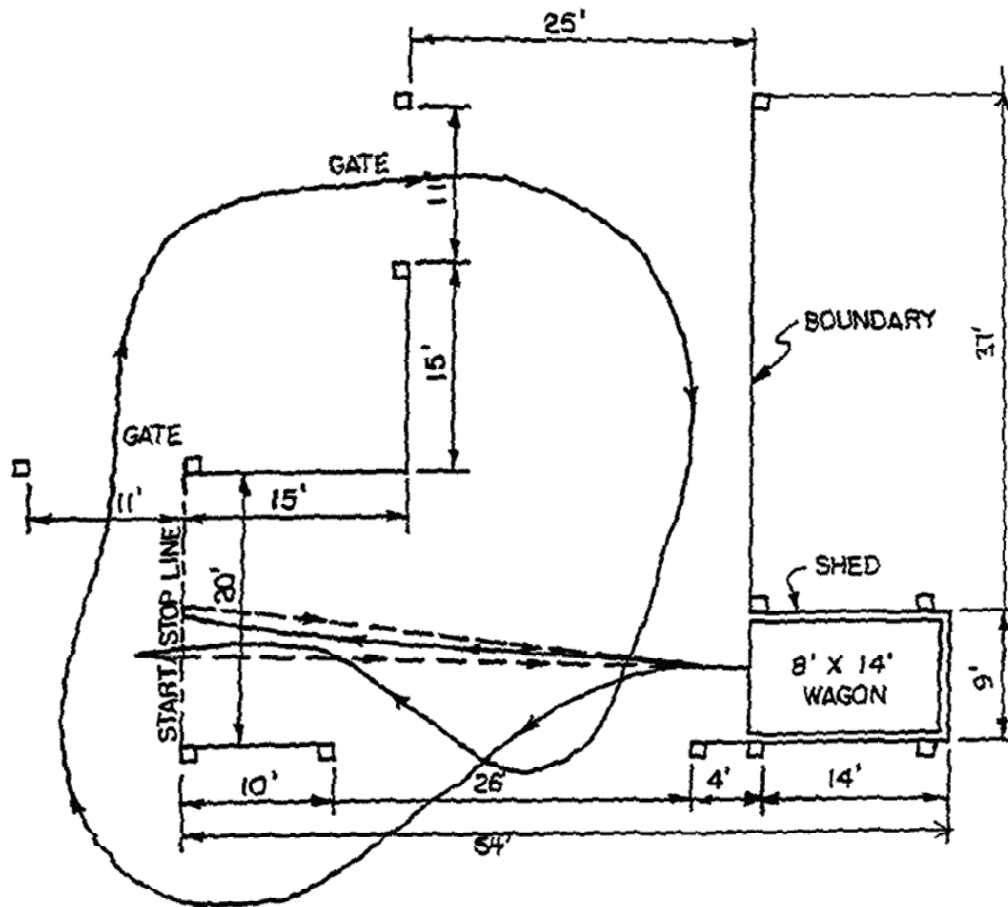
Rules:

1. No assistance will be allowed in spotting. The tongue will be on ground. The operator will make hitch without moving wagon forward more than one foot. The operator will dismount to insert and remove the hitch pin.
2. Whenever dismounting tractor, both brakes must be set or the gear shift lever must be in park position.
3. Riding clutch -- Using excessive throttle and controlling ground speed with clutch. May be scored once in four-wheel event.
4. Time begins on signal from scorer at starting line and stops when contestant reaches stopping line and the engine fan stops.
5. If contestant cannot get wagon in shed, measure from rear of wagon to back post of shed and score accordingly.

Scoring:

1. Number of complete changes of direction other than necessary in travel.		_____	x	10	_____
2. Markers or lines -- Touches		_____	x	40	_____
Stakes knocked over or lines crossed		_____	x	50	_____
3. Tractor Operation -- Stalled		_____	x	10	_____
Grated gears		_____	x	10	_____
Riding clutch (note rule 3)		_____	x	10	_____
4. Measurement in the shed (nearest 1/2 inch)					
a. Inches off center at front		_____	x	10	_____
b. Inches off center at rear		_____	x	10	_____
c. Inches greater than one from center-rear post (within once inch is perfect)		_____	x	10	_____
5. a. Time - minutes _____ seconds _____ total seconds		_____	x	1/5	_____
b. Time in excess of 8 minutes, 100 points					_____
<b>TOTAL PENALTY POINTS</b>					_____

One thousand points will be added to the score of those who do not complete the course.



### FOUR WHEEL DRIVING COURSE

Use the 20' line for start and finish.

If necessary, the outer posts of the two 11' gates may be moved to adjust the "degree of difficulty." Be sure tractor and wagon can negotiate through gates and truns without fouling the implement.

DIRECTION \_\_\_\_\_ FORWARD  
of TRAVEL ..... BACKWARD

2. Compact Tractor

A. Written Examination: Scoring – Questions missed X 4 = Total Penalty Points

Will consist of 25 multiple choice questions pertaining to the small engines project/program and the operation, care, maintenance, and safety of lawn mowers/tractors, including business, lawn and turf management.

B. Parts/Materials Identification: Scoring – Questions missed X 4 = Total Penalty Points

**Awards:**

1. The high scoring individual in the Large Tractor Driving, Compact Tractor, and Skid-Steer Contest will be awarded a plaque.
2. The top individuals will be announced at the Recognition Assembly during the Penn State 4-H Achievement Days.
3. Ribbons will be awarded to a maximum of five (5) individuals per division.
4. Merit ribbons will be awarded to all contest participants (33 percent blue, 33 percent red, 33 percent white).

**Opportunities:**

The winning Large Tractor Driver and Compact Tractor Driver may represent Pennsylvania at the National 4-H Engineering, Science and Leadership Event at Purdue University in Lafayette, IN provided the participant meets all eligibility requirements of the contest.

NOTE: Participants in the National Contest must have passed their 14<sup>th</sup> birthday and shall not have passed their 19<sup>th</sup> birthday on January 1 of the current year. You may wish to consider this in the selection of participants.

### Compact Tractor Identification

Parts to be identified have numbers attached to them. Select the most correct part name from this list. Write the corresponding number beside the name.

**INSECTS**

- \_\_\_\_\_ Cut Worm
- \_\_\_\_\_ Sideweb Worm
- \_\_\_\_\_ White Grub

**EQUIPMENT PARTS**

- \_\_\_\_\_ Aerifork
- \_\_\_\_\_ Air filter element, dry
- \_\_\_\_\_ Air filter, oil foam
- \_\_\_\_\_ Battery cable
- \_\_\_\_\_ Battery, 12 volt
- \_\_\_\_\_ Bearing ball, sealed
- \_\_\_\_\_ Bearing ball, open
- \_\_\_\_\_ Bearing, needle
- \_\_\_\_\_ Bearing, sleeve
- \_\_\_\_\_ Bearing, tapered roller
- \_\_\_\_\_ Spreader, drop or thrust
- \_\_\_\_\_ Sprocket
- \_\_\_\_\_ Starting safety interlock component
- \_\_\_\_\_ Tie rod end
- \_\_\_\_\_ Tiller drag bar
- \_\_\_\_\_ Tiller tine
- \_\_\_\_\_ Tire, tractor, front
- \_\_\_\_\_ Tire, tractor, rear
- \_\_\_\_\_ Trans-axle
- \_\_\_\_\_ Transport wheel assembly
- \_\_\_\_\_ Tube, tire
- \_\_\_\_\_ Valve cap, tire
- \_\_\_\_\_ Valve core
- \_\_\_\_\_ Valve stem
- \_\_\_\_\_ Wheel lug bolt
- \_\_\_\_\_ Wheel lug nut

**WEEDS AND GRASSES**

- \_\_\_\_\_ Annual bluegrass
- \_\_\_\_\_ Carpetweed
- \_\_\_\_\_ Common chickweed
- \_\_\_\_\_ Common purslane
- \_\_\_\_\_ Crabgrass
- \_\_\_\_\_ Dandelion
- \_\_\_\_\_ Goosegrass
- \_\_\_\_\_ Ground Ivy or Creep Charlie

- \_\_\_\_\_ Belt, flat
- \_\_\_\_\_ Belt, "V"
- \_\_\_\_\_ Blade adapter, rotary
- \_\_\_\_\_ Blade, reel mower
- \_\_\_\_\_ Blade, rotary mower
- \_\_\_\_\_ Blade, edger/trimmer
- \_\_\_\_\_ "C" clip
- \_\_\_\_\_ Chain, flat
- \_\_\_\_\_ Chain, roller
- \_\_\_\_\_ Clutch, pedal
- \_\_\_\_\_ Clutch, plate
- \_\_\_\_\_ Fuse
- \_\_\_\_\_ Gear
- \_\_\_\_\_ Heat Exchanger
- \_\_\_\_\_ Holder, fuse
- \_\_\_\_\_ Hydraulic hose
- \_\_\_\_\_ Hydraulic lift cylinder
- \_\_\_\_\_ Lawn sprinkler head

**PLANTS AND SEEDS**

- \_\_\_\_\_ Clover
- \_\_\_\_\_ Grass seed
- \_\_\_\_\_ Legume seed
- \_\_\_\_\_ Kentucky bluegrass

**MECHANIC AND GARDEN TOOLS**

- \_\_\_\_\_ Chuck, tire inflater
- \_\_\_\_\_ Clipper, grass
- \_\_\_\_\_ Clipper, hedge
- \_\_\_\_\_ Gage, spark plug gap
- \_\_\_\_\_ Gage, thickness or feeler
- \_\_\_\_\_ Gage, tire inflation
- \_\_\_\_\_ Nozzle, garden hose
- \_\_\_\_\_ Spark tester

**OTHER**

- \_\_\_\_\_ Knot weed
- \_\_\_\_\_ Plantain
- \_\_\_\_\_ Prostrate Spurge
- \_\_\_\_\_ Quackgrass
- \_\_\_\_\_ Shepherdspurse
- \_\_\_\_\_ White clover
- \_\_\_\_\_ Yellow nutsedge
- \_\_\_\_\_ Accounting ledger

- \_\_\_\_\_ Magneto, breaker-type
- \_\_\_\_\_ Magneto, solid state
- \_\_\_\_\_ Mower height adjuster
- \_\_\_\_\_ Mower wheel
- \_\_\_\_\_ Muffler\
- \_\_\_\_\_ Oil drain plug
- \_\_\_\_\_ Pin, cotter (cotter key)
- \_\_\_\_\_ Pin, drawbar
- \_\_\_\_\_ Pin, hair
- \_\_\_\_\_ Pin, Lynch
- \_\_\_\_\_ Pin, split
- \_\_\_\_\_ Pulley, flat belt
- \_\_\_\_\_ Pulley, idler (tightener)
- \_\_\_\_\_ Pulley, "V" belt
- \_\_\_\_\_ Seal, oil/grease
- \_\_\_\_\_ Spreader, broadcast
- \_\_\_\_\_ Valve spring compressor
- \_\_\_\_\_ Wrench, allen (hex)
- \_\_\_\_\_ Wrench, socket, 1/2" drive
- \_\_\_\_\_ Wrench, socket, 3/8" drive
- \_\_\_\_\_ Wrench, spark plug
- \_\_\_\_\_ Wrench, ratchet handle 1/2"
- \_\_\_\_\_ Wrench, ratchet handle 3/8"
- \_\_\_\_\_ Wrench, T handle, 1/4" drive
- \_\_\_\_\_ Wrench, torque 1/2"
- \_\_\_\_\_ Wrench, torque 3/8"
- \_\_\_\_\_ Business card
- \_\_\_\_\_ Fertilizer, slow release
- \_\_\_\_\_ Fertilizer, granular
- \_\_\_\_\_ Glasses, reading
- \_\_\_\_\_ Glasses, safety
- \_\_\_\_\_ Limestone, ground
- \_\_\_\_\_ Shoe, dress
- \_\_\_\_\_ Shoe, steel-toed safety
- \_\_\_\_\_ Shoe, street

Items missed \_\_\_\_\_ x 4 = **Total Penalty Points**

C. Compact Tractor Safety and Handling

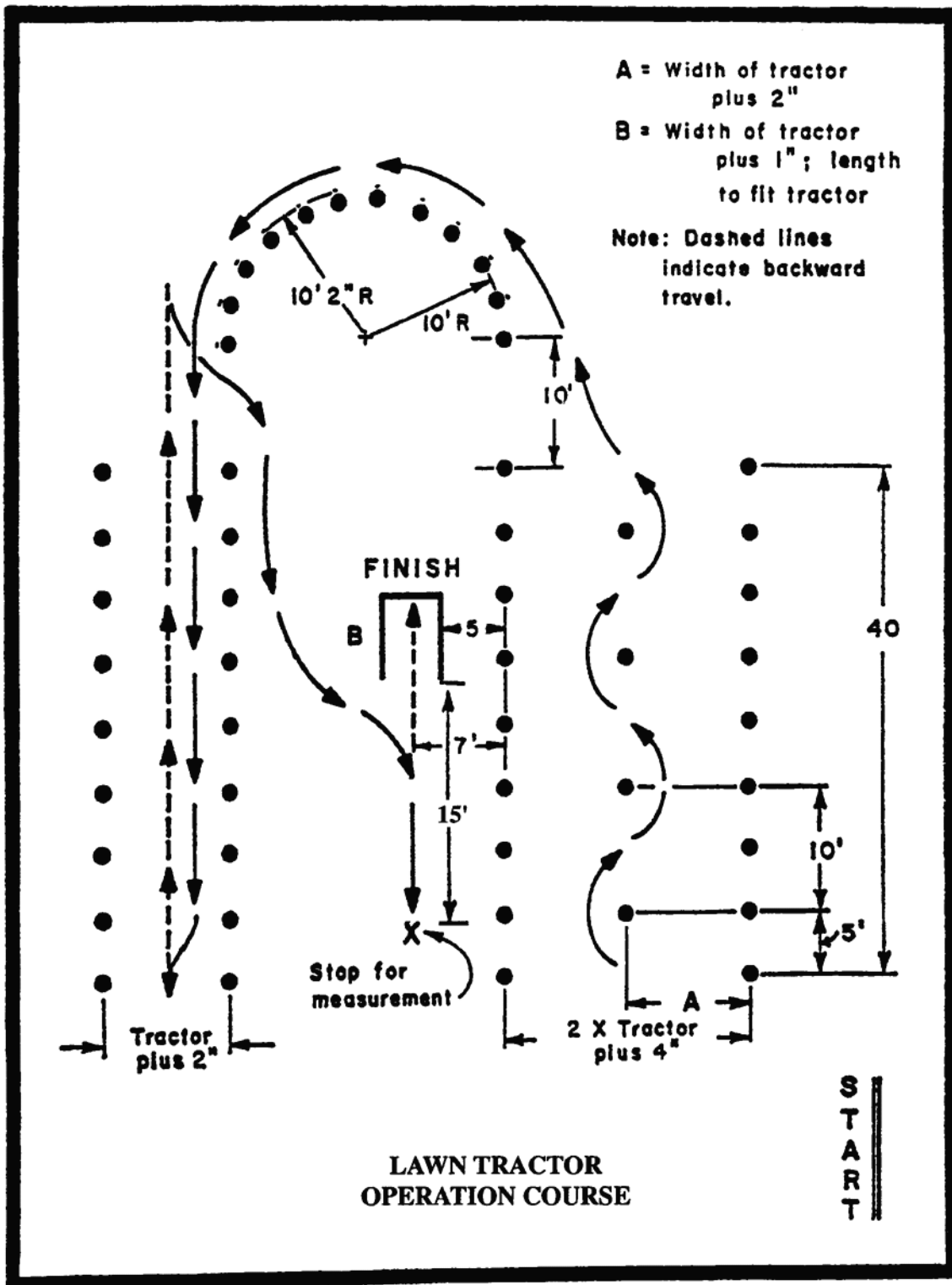
Procedure:

Each participant will be scored throughout the compact tractor operation portion of the event. At some predetermined time, the safety judge will put an obstacle in front of the equipment being operated by the participant. The participant is expected to stop immediately and remove the obstacle from the course (hand is to the safety judge).

Scoring:	Number Times		Penalty Points	
Prestart Check (Report each to safety judge).				
1. Failure to check fuel level.	_____		(25)	_____
2. Failure to check oil level.	_____		(25)	_____
3. Failure to observe tire inflation.	_____		(25)	_____
4. Failure to observe loose or missing parts.	_____		(25)	_____
Obstacle Removal				
1. Distance traveled before stopping (inches)	_____	x	5	_____
2. Failure to set brakes.	_____		(50)	_____
3. Failure to disengage blade.	_____		(50)	_____
Starting Safely				
1. Failure to check neutral position.	_____	x	25	_____
2. Failure to disengage clutch while starting engine.	_____	x	50	_____
Driving Safely				
1. Failure to engage clutch gently.	_____	x	25	_____
2. Failure to ride on seat.	_____	x	100	_____
3. Skidding or spinning tractor wheels (scuffing of inside wheel on turning does not count as a skid). Skid of the front tractor wheel will not count until the skid equals or is greater than the width of the tire.	_____	x	50	_____
Mounting and Dismounting Safely				
1. Failure to set brakes before dismounting (transmission set in park or locked position counts as brakes locked).	_____	x	50	_____
2. Failure to bring tractor to complete stop before dismounting.	_____	x	100	_____
Other Safety				
1. Smoking.	_____	x	100	_____
2. Extra riders.	_____	x	100	_____
3. Other unsafe practices.	_____	x	100	_____
<b>TOTAL SAFETY PENALTY POINTS</b>				_____

D. Compact Tractor Handling

Scoring:	Number Times		Penalty Points	
1. Each stop or interruption in the continuous movement of the machine, where not required by the course.	_____	x	10	_____
2. Each reverse change of direction other than necessary.	_____	x	10	_____
3. Each occurrence where any part of the machine extends over the boundaries of the course.	_____	x	10	_____
4. Each occurrence of hitting a marker.	_____	x	20	_____
5. Each occurrence of knocking a marker marker over.	_____	x	40	_____
6. Riding the clutch:	_____	x	100	_____
	_____	x	10	_____
7. Each grating of gears.	_____	x	10	_____
8. Each engine stall or raced.	_____	x	10	_____
9. Each failure to follow directions.	_____	x	5	_____
10. Each marker passed when operating outside of two inches allowed mowing around the curb.	_____	x	10	_____
<b>Measurements:</b>				
11. Inches (to the nearest inch) from the stop-stake over 1 inch (measured from the most forward part of the tractor).	_____	x	2	_____
12. Inches (to the nearest 1/2 inch) the tractor is off center in the shed.	_____	x	2	_____
Time is excess of 8 minutes --			100	points



**Contest Organization and Content:**

**3. Skid-Steer**

**A. Written Examination: Scoring – Questions missed X 20 = Total Penalty Points**

References for the questions are 4-H Petroleum Power Tractor Project Books, Safe Operation of Agricultural Equipment (Hobar Publications) and the Penn State Agricultural and Biological Engineering web page titled: The Agricultural Safety and Health Web Page

<http://www.abe.psu.edu/extension/agsafety/index.htm>

**B. Parts Identification: Scoring – Questions missed X 20 = Total Penalty Points**

### **Skid-Steer Parts Identification**

Parts to be identified have numbers attached to them. Select the most correct part name from this list. Write the corresponding number beside the name.

- |                                     |  |
|-------------------------------------|--|
| _____ Air Intake, Engine            | _____ Oil Drain Plug, Crankcase                  |
| _____ Alternator                    | _____ Oil Filter Cap, Crankcase                  |
| _____ Ammeter/Indicator Light       | _____ Oil Filter, Crankcase                      |
| _____ Axle Carrier, Rear            | _____ Oil Fan, Crankcase                         |
| _____ Battery                       | _____ Oil Pressure Gauge/Indicator Light, Engine |
| _____ Bearing, Ball                 | _____ Oil Pump Screen                            |
| _____ Bearing, Crankshaft           | _____ Parking Brake Control                      |
| _____ Bearing, Roller               | _____ Piston                                     |
| _____ Brake Pedal                   | _____ Piston Rings                               |
| _____ Camshaft                      | _____ Piston Wrist Pin                           |
| _____ Clutch Pedal                  | _____ P.T.O. Shield                              |
| _____ Clutch Pressure Plate         | _____ Radiator                                   |
| _____ Connecting Rod                | _____ Radiator Cap                               |
| _____ Crankshaft                    | _____ Seal, Grease/Oil                           |
| _____ Diesel Fuel Tank              | _____ Starter                                    |
| _____ Dipstick, Crankcase Oil Lever | _____ Steering Tie Rod                           |
| _____ Drawbar                       | _____ Tachometer                                 |
| _____ Engine Stop Control           | _____ Temperature Gauge/Indicator Light Coolant  |
| _____ Exhaust Manifold              | _____ Thermostat                                 |
| _____ Fan                           | _____ Throttle                                   |
| _____ Fan Belt                      | _____ Throttle Rod                               |
| _____ Flywheel, Engine              | _____ Tire Valve Stem                            |
| _____ Fuel Cap                      | _____ Valve, Engine                              |
| _____ Fuel Filter                   | _____ Valve Cover, Engine                        |
| _____ Fuel Injector Pump            | _____ Valve Cover, Gasket                        |
| _____ Fuel Injector                 | _____ Valve Push Rod                             |
| _____ Fuel Pump                     | _____ Valve Rocker Arm                           |
| _____ Fuel Tank                     | _____ Valve Spring                               |
| _____ Governor                      | _____ Warning Light, Rear                        |
| _____ Head Gasket, Engine           | _____ Water Hose                                 |
| _____ Hydraulic Hose                | _____ Water Pump                                 |
| _____ Hydraulic Reservoir           | _____ Weight Carrier                             |
| _____ Hydraulic Valve Control       | _____ Weights, Front                             |
| _____ Intake Manifold               | _____ Weights, Wheel                             |
| _____ Muffler                       |  |

### C. Skid Safety and Handling

#### Procedure:

Each participant will be scored throughout the skid-steer operation portion of the event. At some predetermined time, the safety judge will put an obstacle in front of the equipment being operated by the participant. The participant is expected to stop immediately and remove the obstacle from the course (hand it to the safety judge).

#### Scoring:

Number Times	Penalty Points
-----------------	-------------------

#### Prestart Check (Report each to safety judge).

- |   |       |         |
|---|-------|---------|
| 1. Failure to check fuel level.               | _____ | 25_____ |
| 2. Failure to check oil level.                | _____ | 25_____ |
| 3. Failure to observe tire inflation.         | _____ | 25_____ |
| 4. Failure to observe loose or missing parts. | _____ | 25_____ |

#### Obstacle Removal

- |  |       |         |
|--|-------|---------|
| 1. Distance travelled before stopping (inches) | _____ | x5_____ |
| 2. Failure to shut off engine.                 | _____ | 50_____ |
| 3. Failure to lower bucket.                    | _____ | 50_____ |

#### Driving Safely

- |  |       |           |
|--|-------|-----------|
| 1. Failure to start forward or backward motion gently. | _____ | x25_____  |
| 2. Failure to ride on seat with seat belt fastened.    | _____ | x100_____ |
| 3. Excessive skidding or spinning wheels.              | _____ | x50_____  |

#### Mounting and Dismounting Safely

- |   |       |           |
|---|-------|-----------|
| 1. Failure to lower bucket and shut off engine. | _____ | x100_____ |
|---|-------|-----------|

#### Other Safety

- |                            |       |           |
|----------------------------|-------|-----------|
| 1. Smoking.                | _____ | x100_____ |
| 2. Extra riders.           | _____ | x100_____ |
| 3. Other unsafe practices. | _____ | x100_____ |

**TOTAL SAFETY PENALTY POINTS \_\_\_\_\_**

**D. Skid Steer Handling**

**Scoring:**

**Times Points**

	<b>Number</b>	<b>Penalty</b>
1. Each stop or interruption in the continuous movement of the machine, where not required by the course.	_____	x10_____
2. Each reverse change of direction other than necessary.	_____	x10_____
3. Each occurrence where any part of the machine extends over the boundaries of the course.	_____	x10_____
4. Each occurrence of hitting a marker.	_____	x10_____
5. Each occurrence of knocking a marker over.	_____	x10_____
6. Each engine stall or raced.	_____	x10_____
7. Each failure to follow directions.	_____	x10_____
8. Each marker passed when operation outside of two inches allowed mowing around curb.	_____	x10_____

**Measurements:**

9. Inches (to the nearest inch) from the stop-stake over 1 inch (measured from the most forward part of the tractor).	_____	x2_____
10. Inches (to the nearest 1/2 inch) the skid-steer is off center in the shed.	_____	x2_____

Time is excess of 8 minutes – 100 points \_\_\_\_\_

**TOTAL HANDLING PENALTY POINTS \_\_\_\_\_**