

## Serpentine

### Activity 3-1(a)

**Format:** Individual

**Time Frame:** Open (based on a total of 28 hours for skills practice and completion)

### Description

This exercise measures a driver/operator's ability to maneuver a vehicle around obstructions on a roadway while moving forward and in reverse without stopping to change the direction of travel and without striking the obstructions.

### Standard of Completion

Maneuver a vehicle around obstructions on a roadway while moving forward and in reverse from the tillered position and the tractor position, given a fire department aerial apparatus equipped with a tiller, another driver/operator, manufacturer requirements and specifications, and AHJ policies and procedures, so that the vehicle is maneuvered through the obstructions without stopping to change direction of travel and without striking the obstructions. (NFPA 1002 (2017) / Paragraph 7.2.1 – referencing paragraph 4.3.3)

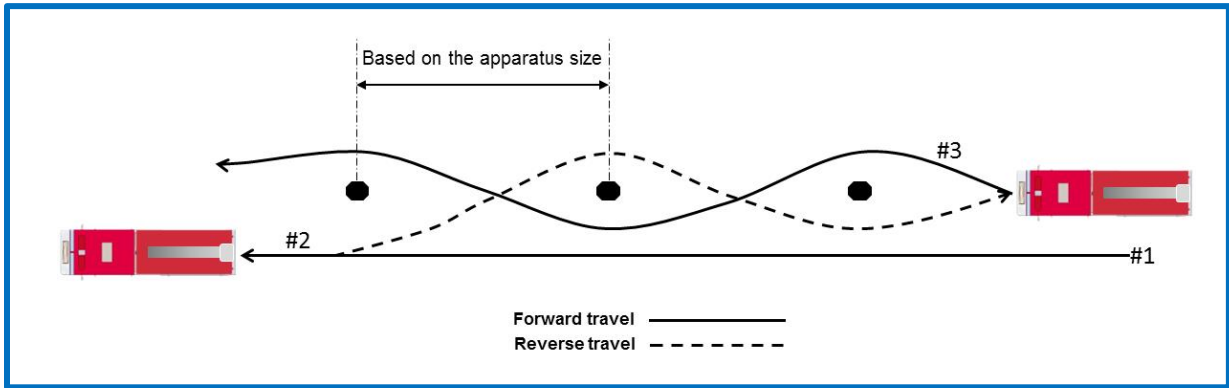
### Materials

- Tilled apparatus
- Another driver/operator
- Tape measure
- Three (3) delineators
- PPE (including gloves and helmet)

### Instructor Notes

1. Establish the course or path of travel for this exercise by placing a minimum of three delineators in a straight line.
  - The spacing of the delineators (cones) is the length of the tillered apparatus being used.
2. Provide adequate space on each side of the delineators for the apparatus to move freely.
3. The driver/operator and tiller operator drive the apparatus along the left side of the markers in a straight line and the driver/operator stops when the rear of the apparatus is just beyond the last delineator.
4. The driver/operator and tiller operator then begin the exercise by backing the apparatus between the delineators, by passing to the left of delineator #1, to the right of delineator #2, and to the left of delineator #3.
5. The driver/operator stops the apparatus when the front of the apparatus is just beyond delineator #3.
6. Demonstrate the skill for the students before they practice and complete each skill.

**Activity Illustration**



## Cul-de-sac Turnaround

### Activity 3-1(b)

**Format:** Individual

**Time Frame:** Open (based on a total of 28 hours for skills practice and completion)

### Description

This exercise measures the tiller operator's ability to turn the apparatus around in a cul-de-sac (in which the apparatus cannot perform a U-turn without stopping and backing up) without striking obstacles.

### Standard of Completion

Turn a fire apparatus 180 degrees within a confined space from the tiller and the tractor position, given another driver/operator, a fire department aerial apparatus equipped with a tiller, manufacturer requirements and specifications, and AHJ policies and procedures, so that each exercise is performed without striking the apparatus or obstructions. (NFPA 1002 (2017) / Paragraph 7.2.1 – referencing paragraph 4.3.4)

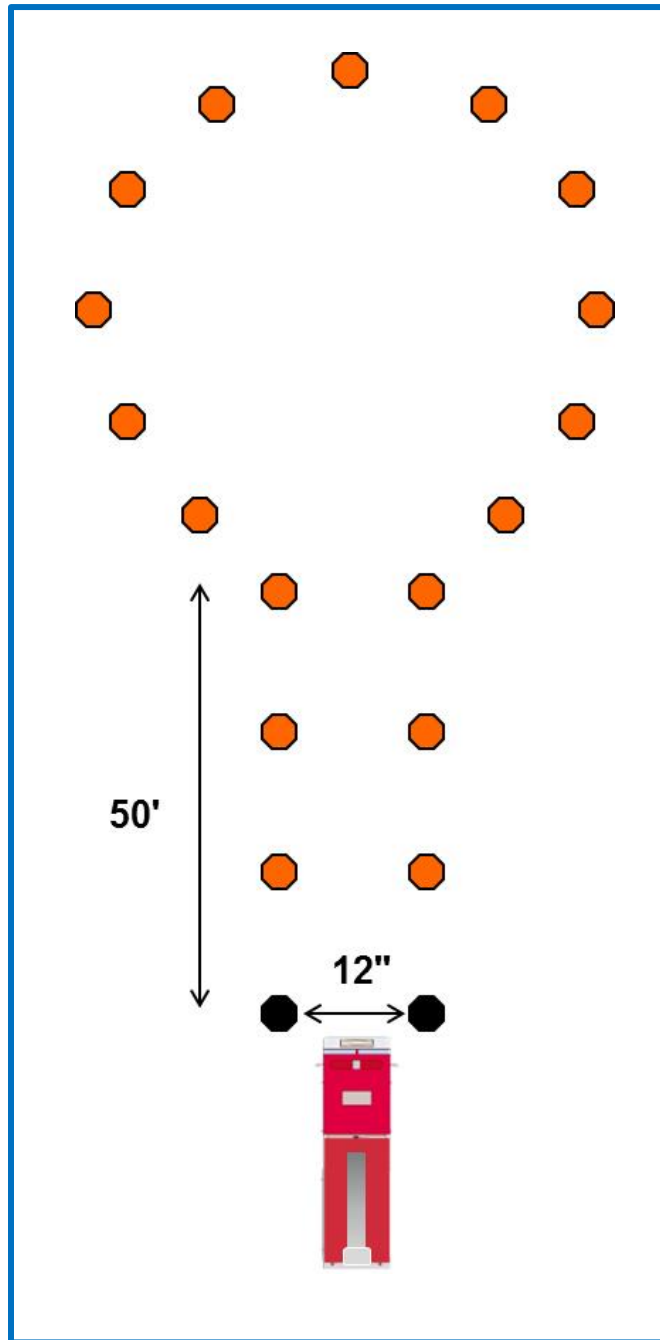
### Materials

- Tillered apparatus
- Another apparatus driver/operator
- Tape measure
- Two (2) delineators
- Traffic cones
- PPE (including gloves and helmet)

### Instructor Notes

1. Establish a 50-foot lane, 12-feet wide.
2. Establish a cul-de-sac at one end with a diameter that is the length of the apparatus being used plus two times the width.
3. The driver/operator and tiller operator enter into the cul-de-sac through the 12-foot lane, turn the apparatus 180 degrees, and return through the lane in one continuous maneuver.
4. Demonstrate the skill for the students before they practice and complete each skill.

**Activity Illustration**



## Station Parking

### Activity 3-1(c)

**Format:** Individual

**Time Frame:** Open (based on a total of 28 hours for skills practice and completion)

### Description

This exercise measures the driver/operator's and tiller operator's ability to back an apparatus into an apparatus bay (restricted spaces on both the right and left sides of the vehicle) without having to stop and pull forward and without striking obstructions.

### Standard of Completion

Back a vehicle from a roadway into restricted spaces on both the right and left sides of the vehicle from the tractor and the tiller position, given another driver/operator, a fire department aerial apparatus equipped with a tiller, manufacturer requirements and specifications, and AHJ policies and procedures, so that each exercise is performed without striking the apparatus or obstructions. (NFPA 1002 (2017) / Paragraph 7.2.1 – referencing 4.3.2)

### Materials

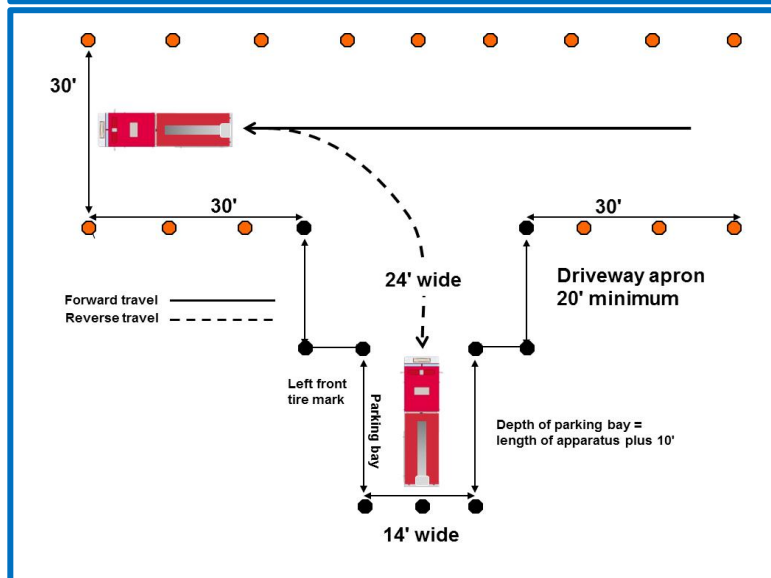
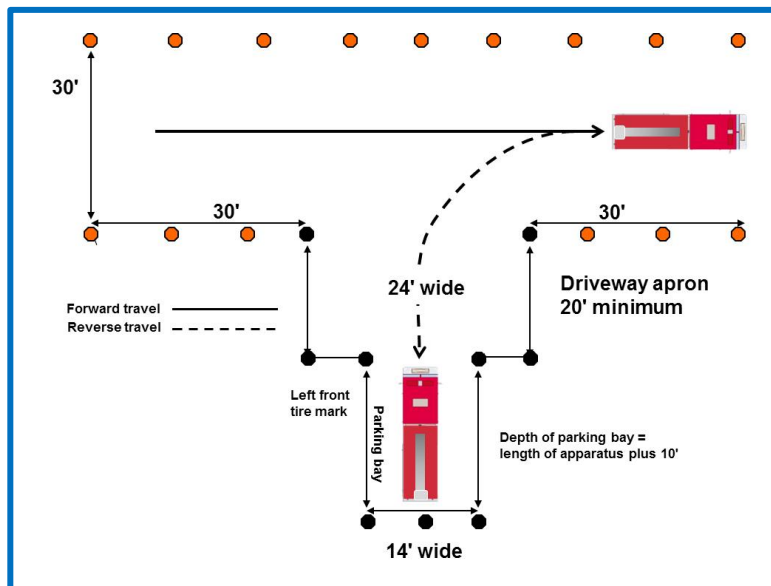
- Tilled apparatus
- Another apparatus driver/operator
- Tape measure
- Traffic cones
- Nine (9) delineators
- Left front tire marker
- Optional straight line marker
- Extra traffic cones and delineators available
- PPE (including gloves and helmet)

### Instructions

1. Establish two boundary lines 30 feet apart using traffic cones to simulate a street.
2. Simulate a driveway apron by arranging four (4) delineators off one boundary line, 24 feet wide, and a minimum of 20 feet long.
  - Increase or decrease the size of the driveway apron based on the needs of the jurisdiction.
3. Place traffic cones on each side of the driveway apron between the delineators.
4. Simulate the entrance to the apparatus bay by placing two (2) delineators 12-14 feet apart.
  - Space delineators based on AHJ entrance-bay width.
5. Place three (3) delineators at the back of the apparatus bay. This depth is determined by the length of the tilled aerial apparatus plus 10 feet.

6. Place traffic cones on each side of the apparatus bay between the delineators.
7. Place a marker on the ground to indicate to the driver/operator the proper position of the left front tire of the apparatus once stopped and parked.
8. An optional straight line can be placed on the floor of the apparatus bay to assist the driver/operator while backing the apparatus, facilitating the use of apparatus mirrors.
9. The driver/operator and tiller operator pass the delineators identifying the driveway apron on the left and then back the apparatus, using a left turn, into the apparatus bay.
10. Repeat the exercise with the driveway apron on the right side, using a right turn.
11. Activity is complete when the apparatus has backed into the bay from both directions and driven onto the roadway in both directions.
12. Demonstrate the skill for the students before they practice and complete each skill.

### Activity Illustrations



## Diminishing Clearance

### Activity 3-1(d)

**Format:** Individual

**Time Frame:** Open (based on a total of 28 hours for skills practice and completion)

### Description

This exercise measures a driver/operator's and tiller operator's ability to maneuver an apparatus in a straight line in areas with restricted horizontal and vertical clearances, judge distances from wheel to object, and stop at a finish line without striking obstacles. The driver/operator's speed should be great enough to necessitate quick judgment.

### Standard of Completion

Maneuver a fire apparatus in areas with restricted horizontal and vertical clearances from the tiller and the tractor position, given another driver/operator, a fire department aerial apparatus equipped with a tiller, manufacturer requirements and specifications, and AHJ policies and procedures, so that each exercise is performed without striking the apparatus or obstructions. (NFPA 1002 (2017) / Paragraph 7.2.1 – referencing 4.3.5)

### Materials

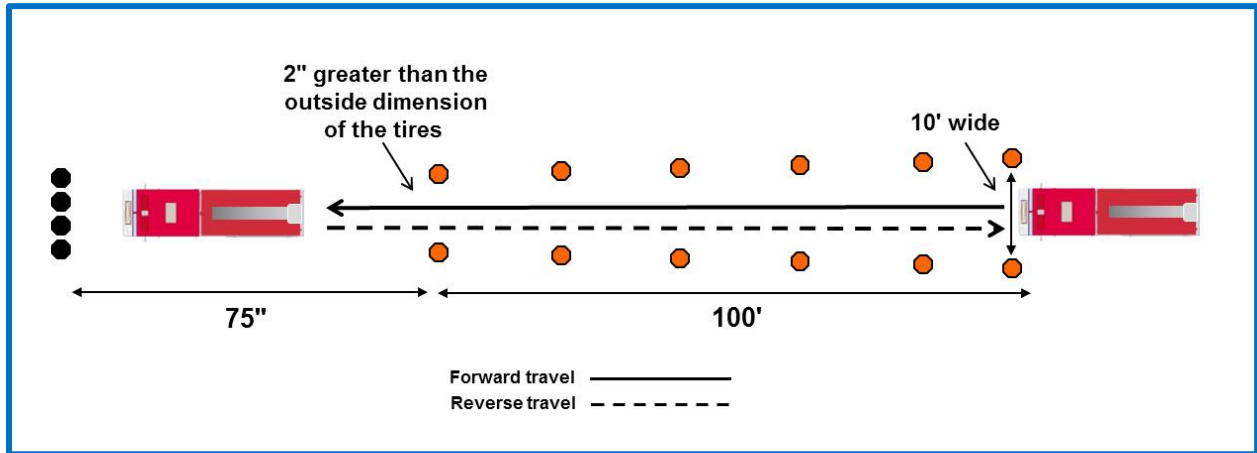
- Tilled apparatus
- Another driver/operator
- Tape measure
- Traffic cones
- Four (4) delineators
- Vertical obstacle
- PPE (including gloves and helmet)

### Instructor Notes

1. Establish a 100-foot lane using traffic cones.
2. The lane varies in width from 10 feet to a diminishing clearance that is 2 inches greater than the outside dimension of the tires on the apparatus being used.
3. Establish a finish line 75 feet past the end of the lane using traffic cones and at least one (1) delineator.
4. Establish at least one (1) adjustable vertical obstacle in the lane.
5. The driver/operator and tiller operator maneuver the apparatus through this lane.
  - If the tiller operator determines the apparatus cannot clear the vertical obstacle, they should communicate to the driver/operator to stop the apparatus.
6. The driver/operator stops the apparatus at the finish line with no portion of the apparatus protruding beyond the finish line.
7. The driver/operator and tiller operator drives back through the lane.

- If the tiller operator determines the apparatus cannot clear the vertical obstacle, they should communicate to the driver/operator to stop the apparatus.
8. The driver/operator stops after the front of the apparatus passes the last traffic cone.
  9. Demonstrate the skill for the students before they practice and complete each skill.

### Activity Illustration





## Position and Stabilize a Tillered Apparatus

### Activity 3-3

**Format:** Individual

**Time Frame:** Open (based on a total of 28 hours for skills practice and completion)

### Description

This activity provides students with an opportunity to practice positioning and stabilizing a tillered apparatus.

### Standard of Completion

Position a fire department aerial apparatus equipped with a tiller from the tiller position and the tractor position, given *an aerial apparatus equipped with a tiller, another driver/operator, the apparatus operating instructions, an incident location, a situation description, and an assignment*, so that the aerial is positioned and stabilized to accomplish the assignment. (NFPA 1002 (2017) / Paragraph 7.2.3)

### Materials

- Tillered apparatus
- Another driver/operator
- Facility and/or location with space sufficient to accommodate operating the apparatus
- PPE (including gloves and helmet)

### Instructor Notes

- Demonstrate the skill for the students before they practice and complete each skill.