Serpentine Exercise

Skill 2-1-1

NFPA 1002 Standard for Fire Apparatus Driver/Operator Professional Qualifications (2014)

- **Paragraph 7.2.1**

Perform the practical driving exercises specified in 4.3.2 through 4.3.5 from the tiller position, given a qualified driver, a fire department aerial apparatus equipped with a tiller, and a spotter for backing up, so that each exercise is performed without striking the vehicle or obstructions.

Format: Individual

Time Frame: Open (based on a total of 28:00 hours for skills practice and completion)

Description

This exercise measures a driver/operator's ability to perform the practical driving exercises specified in NFPA 1002 Paragraphs 4.3.2 through 4.3.5 from the tiller position without striking the vehicle or obstructions.

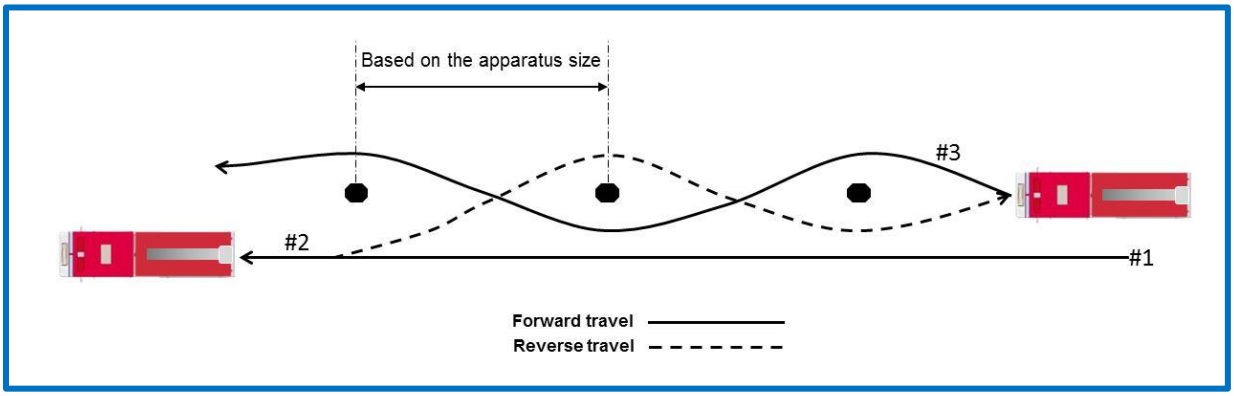
Materials

- Tillered apparatus
- Qualified tillered apparatus driver/operator
- Tape measure
- Three (3) delineators

Instructor Notes

1. This skill identified under JPR 7.2.1 shall be demonstrated prior to the students practicing and completing each skill.
2. 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 is based on the apparatus being used.
3. Provide adequate space on each side of the delineators for the apparatus to move freely.
4. 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.
5. 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.
6. At this point, the driver/operator stops the apparatus when the front of the apparatus is just beyond delineator #3.

Activity Illustration



Cul-de-sac Turnaround

Skill 2-1-2

NFPA 1002 Standard for Fire Apparatus Driver/Operator Professional Qualifications (2014)

- **Paragraph 7.2.1**

Perform the practical driving exercises specified in 4.3.2 through 4.3.5 from the tiller position, given a qualified driver, a fire department aerial apparatus equipped with a tiller, and a spotter for backing up, so that each exercise is performed without striking the vehicle or obstructions.

Format: Individual

Time Frame: Open (based on a total of 28:00 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 without striking obstacles.

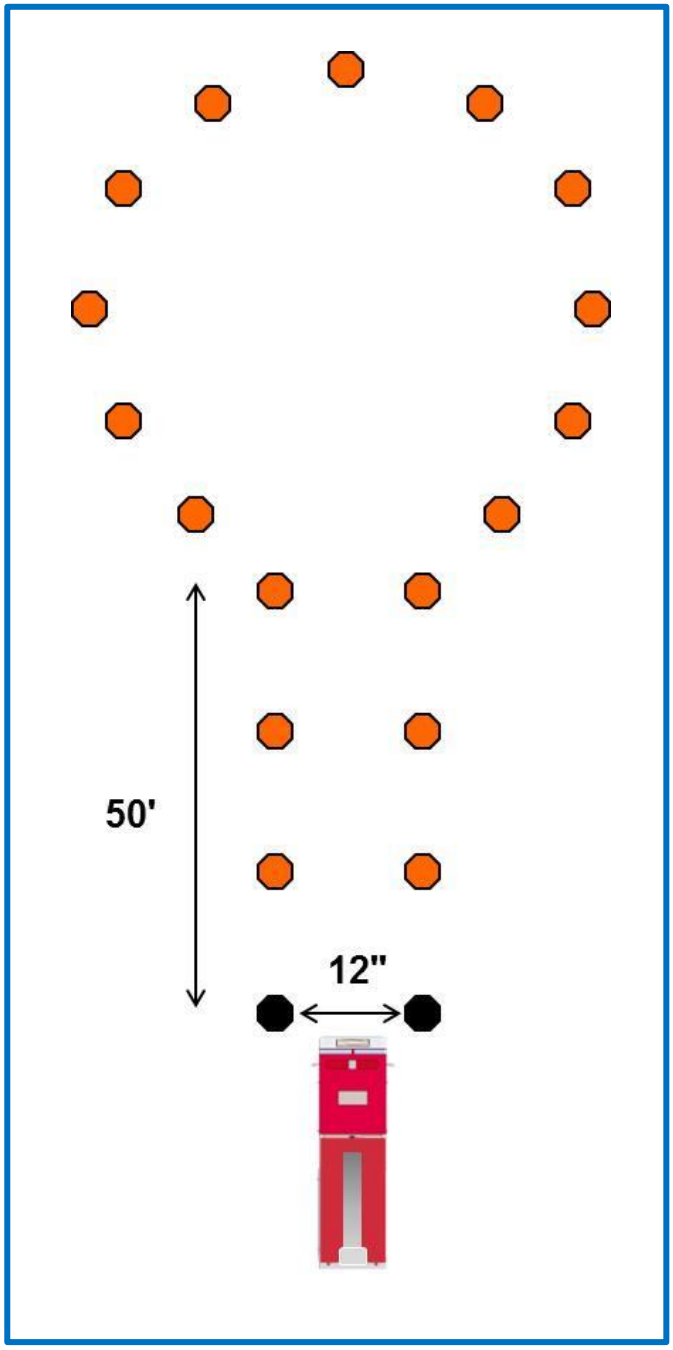
Materials

- Tillered apparatus
- Qualified tillered apparatus driver/operator
- Tape measure
- Two (2) delineators
- Traffic cones

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.

Activity Illustration



Station Parking

Skill 2-1-3

NFPA 1002 Standard for Fire Apparatus Driver/Operator Professional Qualifications (2014)

- **Paragraph 7.2.1**

Perform the practical driving exercises specified in 4.3.2 through 4.3.5 from the tiller position, given a qualified driver, a fire department aerial apparatus equipped with a tiller, and a spotter for backing up, so that each exercise is performed without striking the vehicle or obstructions.

Format: Individual

Time Frame: Open (based on a total of 28:00 hours for skills practice and completion)

Description

This exercise measures the driver/operator's and tiller operator's ability to back the apparatus into an apparatus bay.

Materials

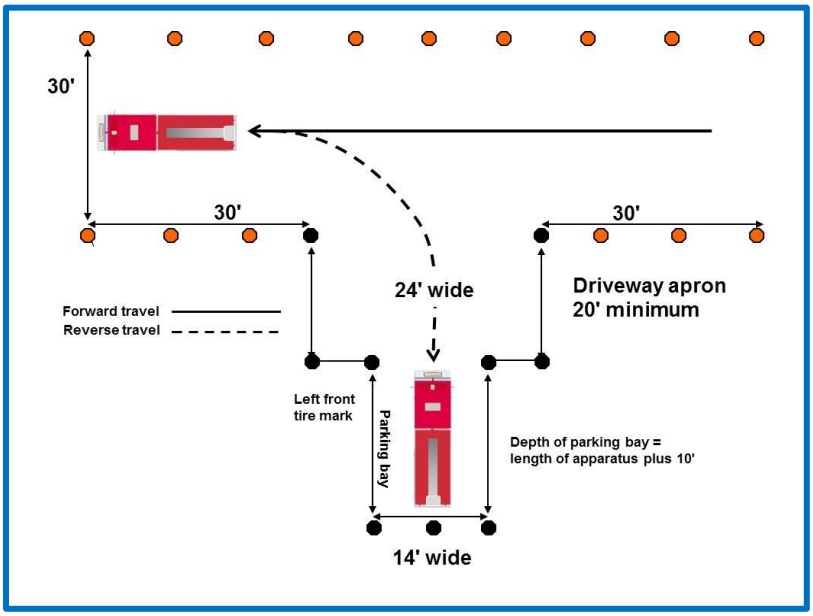
- Tillered apparatus
- Qualified tillered apparatus driver/operator
- Tape measure
- Traffic cones
- Nine (9) delineators
- Left front tire marker
- Optional straight line marker
- Extra traffic cones and delineators available

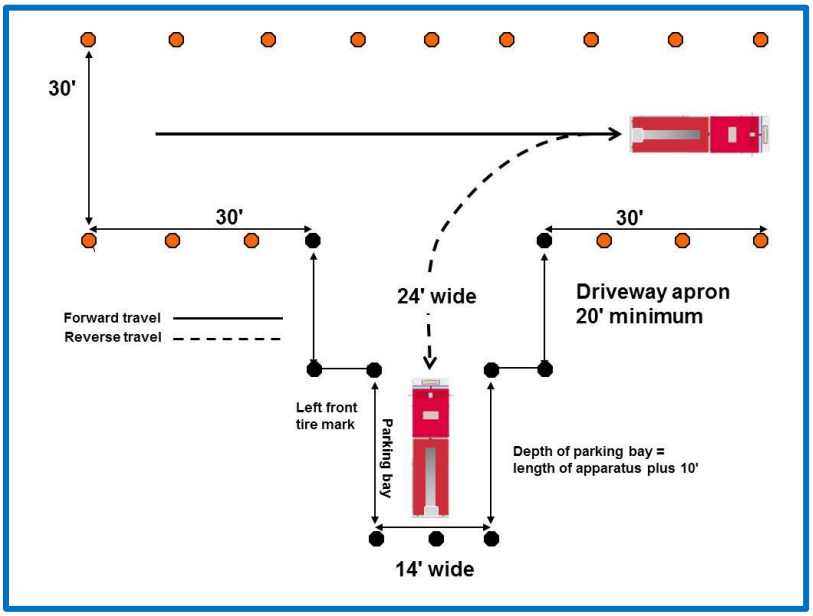
Instructions

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.
   - The instructor can 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 14 feet apart.
5. Place three (3) delineators at the back of the apparatus bay. This depth is determined by the length of the tillered 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 completed once the apparatus has backed into the bay from both directions and driven onto the roadway in both directions.

Activity Illustrations





Diminishing Clearance

Activity 2-1-4

NFPA 1002 Standard for Fire Apparatus Driver/Operator Professional Qualifications (2014)

- **Paragraph 7.2.1**

Perform the practical driving exercises specified in 4.3.2 through 4.3.5 from the tiller position, given a qualified driver, a fire department aerial apparatus equipped with a tiller, and a spotter for backing up, so that each exercise is performed without striking the vehicle or obstructions.

Format: Individual

Time Frame: Open (based on a total of 28:00 hours for skills practice and completion)

Description

This exercise measures a driver/operator's and tiller operator's ability to steer the apparatus in a straight line, judge distances from wheel to object, and stop at a finish line. The driver/operator's speed should be great enough to necessitate quick judgment.

Materials

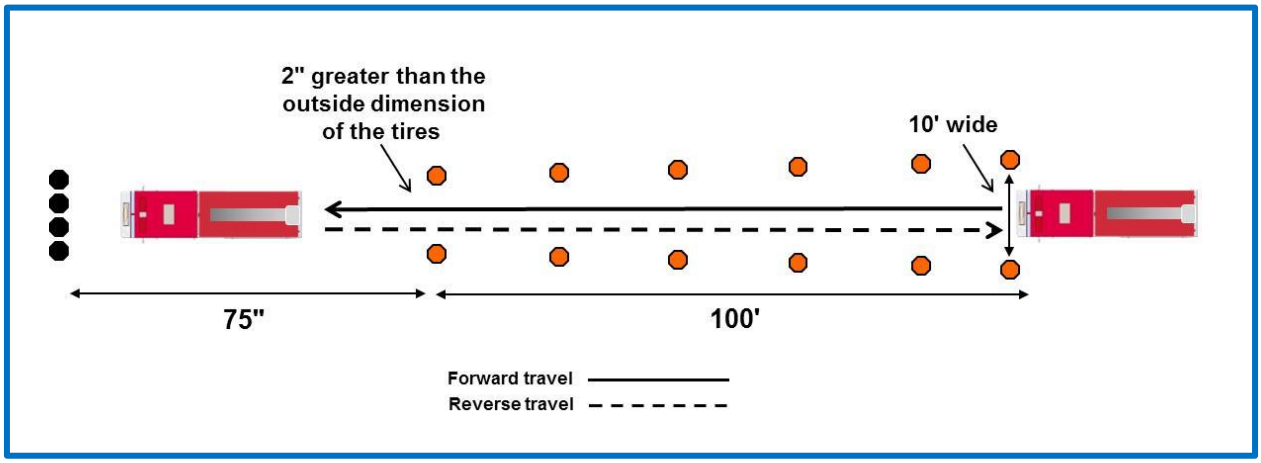
- Tillered apparatus
- Qualified tillered apparatus driver/operator
- Tape measure
- Traffic cones
- Four (4) delineators
- Vertical obstacle

Instructor Notes

1. This skill identified under JPR 7.2.1 shall be demonstrated prior to the students practicing and completing each skill.
2. Establish a 100-foot lane using traffic cones.
3. 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.
4. Establish a finish line 75 feet past the end of the lane using traffic cones and at least one (1) delineator.
5. Establish at least one (1) adjustable vertical obstacle in the lane.
6. The driver/operator and tiller operator maneuver the apparatus through this lane.
    - If the tiller operator determines the apparatus cannot clear the vertical obstacle, he or she should communicate to the driver/operator to stop the apparatus.

7. The driver/operator stops the apparatus at the finish line with no portion of the apparatus protruding beyond the finish line.
8. The driver/operator and tiller operator drives back through the lane.
   - If the tiller operator determines the apparatus cannot clear the vertical obstacle, he or she should communicate to the driver/operator to stop the apparatus.
9. The driver/operator stops after the front of the apparatus passes the last traffic cone.

Activity Illustration



Position and Stabilize a Tillered Apparatus

Activity 2-3-1

NFPA 1002 Standard for Fire Apparatus Driver/Operator Professional Qualifications (2014)

- **Paragraph 7.2.3**

Position a fire department aerial apparatus equipped with a tiller from the tiller position, given the apparatus operating instructions, an incident location, a situation description, and an assignment, so that the aerial device is positioned and stabilized to accomplish the assignment.

Format: Individual

Time Frame: Open (based on a total of 17:00 hours for skills practice and completion)

Description

This activity provides students with an opportunity to practice the job performance requirement to position and stabilize a tillered apparatus.

Materials

- Tillered apparatus
- Qualified tillered apparatus driver/operator
- Facility and/or location with space sufficient to accommodate operating the apparatus
- Personal protective clothing

Instructor Notes

- This skill identified under JPR 7.2.3 shall be demonstrated prior to the students practicing and completing each skill.