

Appendix Three

COMPETENCY COURSE REQUIREMENTS

Objectives

Successful participants will be able to:

1. Recognize the importance of safety and specific safety precautions during the set up and operation of the course.
2. Determine that the student successfully completes the competency course requirements to qualify them to move to the next phase-street and highway driving.
3. Verify the student meets the requirements established by the Authority Having Jurisdiction (AHJ).
4. Demonstrate proficiency in the set-up and operation of the competency course.

Competency Course Requirements

While the optimum layout involves an open paved area approximately 300 feet by 300 feet, a variety of course layouts may be used. In addition to having a level paved area without obstructions and of sufficient size and shape for course layout, the following materials (or usable substitutes) are required to deliver this phase of the program.

1. Clipboard and Scoring Sheets - Supply a sufficient number of scoring sheets (minimum of one per participant). A clipboard or other portable writing surface is also required.
2. Stopwatch - A stopwatch is used to monitor each vehicle's time. A wristwatch with a second hand or digital second display may be substituted in lieu of a stopwatch.
3. Reflective Vests - At least three (3) vests shall be available: one for the instructor/grader; and one for each of the station/course spotters. Everyone on the course shall wear a reflective vest. A minimum of two spotters is recommended. If personnel and vests are available, one spotter per two stations - a total of four (4) spotters (in addition to the instructor/grader) is optimal.
4. Tape Measure - A 20 or 25 feet tape measure is required. It is utilized to measure each vehicle's wheelbase and length. This is to ensure that the course is set appropriately for each vehicle. Portions of the course also require additional measuring.
5. Measuring Wheel - A measuring wheel (or a 100 feet tape) is necessary to properly layout the course and individual stations.
6. Chalk or Carpenter's Crayon - Several pieces of surveyor's chalk are needed. One of the many uses includes marking the location of the traffic cones at each station. The course layout may be permanently marked with spray paint, if the location is one that will be used repeatedly.
7. Ball of String - A ball of string of at least one hundred feet (100') (200' is more appropriate) shall be available for properly aligning the cones along many of the stations.
8. Traffic Cones - If the course follows the layout on the diagram in this manual, a total of 120 cones is optimally needed: 100 red or orange; and, 20 yellow or another contrasting color. If absolutely necessary the course may be constructed with a minimum of 80 cones. However, the layout is more effective if 100 to 120 cones are utilized. If you do not have contrasting cones, designate all entrances and exits by double cones or another method.

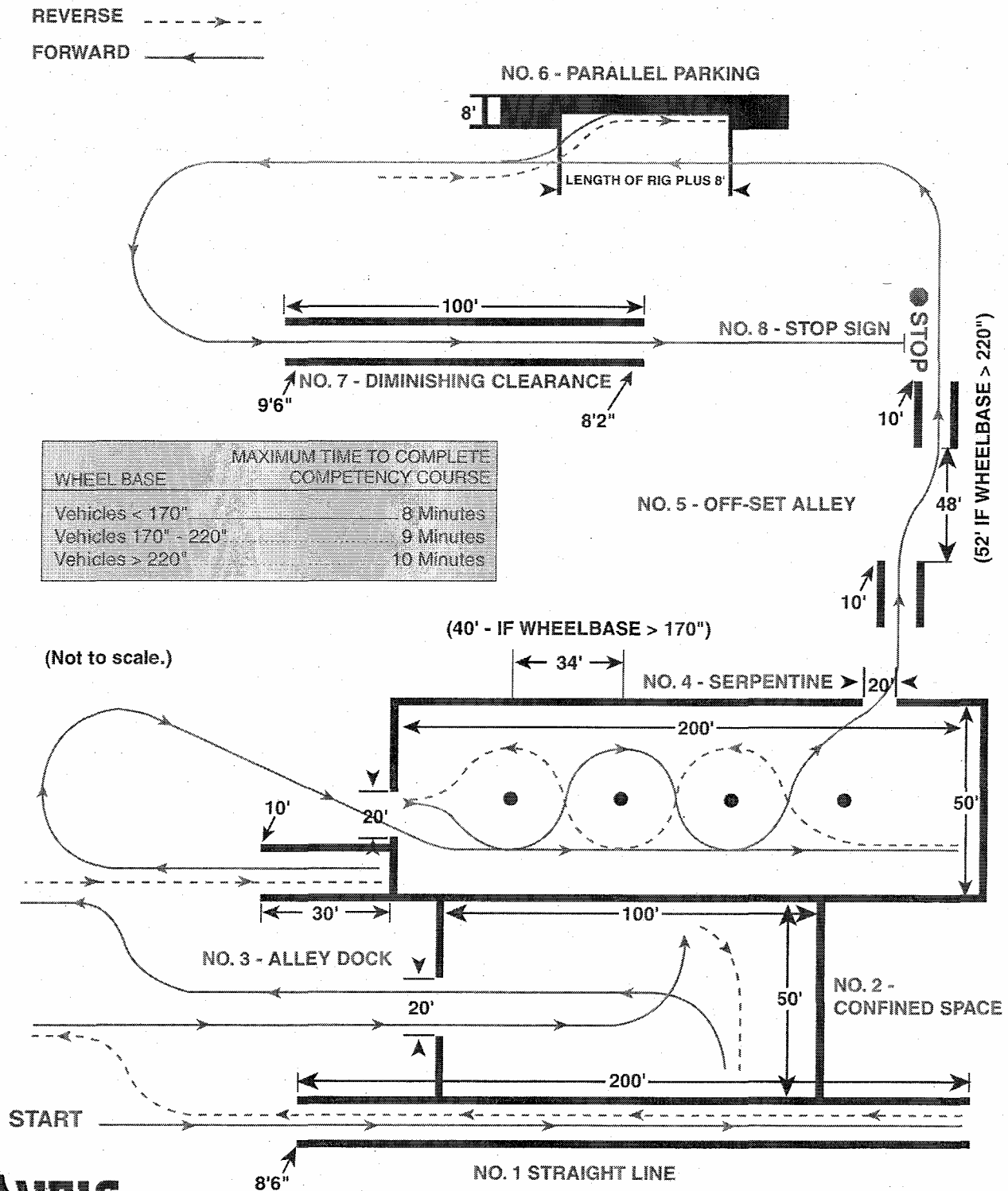
Competency Course Scoring

A copy of the competency course scoresheet is provided on the following pages. It can be copied and used to record the scores of the participants as they complete the exercises. It is noted that scoring for up to six "runs" is provided on each individual scoresheet. It is again emphasized that time on the course is not critical except that a driver traversing the course should keep the vehicle moving at an appropriate speed. Instructors should not use time to measure a driver's competency.

Competency Course Arrangement

One option is a linear arrangement along "normal" residential or commercial streets if this can be safely arranged. It must be emphasized that any arrangement is acceptable if it allows each of the stations to be set up as described and the overall course requirements are achieved. Since there is no specific timing requirement, the individual stations of the course may be dispersed as necessary.

COMPETENCY COURSE



For more information, see instructor's guide and videotape.



Competency Course Scoresheet

Emergency Vehicle Driver Training Program

The competency course is designed to measure driver proficiency in handling emergency vehicles. It is one portion of a four-part comprehensive emergency vehicle driver training program and should be utilized with the overall program. Through its use, the progress of each emergency vehicle driver can be measured over a period of time. The competency course is designed to duplicate eight situations in which the driver's skill, judgment, and knowledge of the limitations of the emergency vehicle, are required for effective maneuvering. This course is based on Appendix A of the NFPA #1002 publication entitled *Fire Department Vehicle Driver/Operator Professional Qualifications*. See other side for course layout schematic.

Driver: _____ Vehicle: _____

Wheelbase: _____ Overall Vehicle Length: _____

Date: _____ Max. Allowable Time: _____

Instructor: _____ Safety Officer: _____

Scoring of Competency Course

Time is only applied as acceptable or unacceptable (too slow). There should be no time comparisons between drivers, and it is recommended that actual times be recorded by the instructor, only for the purpose of measuring a driver's individual improvement. Penalty points are awarded as follows:

| Penalty Point Schedule | | |
|------------------------|------------------------------|--|
| Station | Error | Penalty |
| No. 1 - 8 | All | Each cone brushed, moved or overturned10 points |
| | | Cross any line, each time crossed3 points |
| No. 3 and 8 | Alley Dock and Stop Exercise | Stop 18" or more from or go past the measured point10 points |
| No. 6 | Parallel Park | Park 12" or more from the curb3 points |

Completion and Scoring Record - Competency Course

| Driving Time | Course Station # | | | | | | | | Total Penalty Points | Scorekeeper's Initials |
|--------------|------------------|-------|-------|-------|-------|-------|-------|-------|----------------------|------------------------|
| | No. 1 | No. 2 | No. 3 | No. 4 | No. 5 | No. 6 | No. 7 | No. 8 | | |
| Run 1 | | | | | | | | | | |
| Run 2 | | | | | | | | | | |
| Run 3 | | | | | | | | | | |
| Run 4 | | | | | | | | | | |
| Run 5 | | | | | | | | | | |
| Run 6 | | | | | | | | | | |

Remarks: _____

Competency Course Description (8 station)

Station One - Straight Line Exercise

The purposes of the straight line exercise are:

1. To familiarize the emergency vehicle driver with operating the vehicle within close quarters both in forward and reverse directions at a steady speed.
2. To enable the driver to adjust the mirrors for proper viewing, make minor adjustments in steering, and gain confidence in traversing a restricted area.

This exercise is typically the first station on the competency course. It is eight feet six inches (8'-6") in width, measured from inside edge of cone to inside edge of cone. It is two hundred feet (200') in length. If space for the course is critical, the length of the station may be shortened to one hundred feet (100'). Intermediate cones along the sides of the exercise are usually set at intervals of twenty feet (20'). However, the space may be extended to twenty five feet (25').

The exercise begins upon entering the straight line at the entrance. The driver travels through the exercise by "hugging" the left side; stopping at the end of the station; and backing out of the line without brushing or knocking over any cones.

Station Two - Confined Space Turnaround Exercise

The purposes of the confined space turnaround exercise are:

1. To allow the driver to become familiar with the turning radius of the vehicle.
2. To permit the driver to interpret depth perception involving the placement of the rear of the vehicle as seen through the vehicle's mirrors.

Setting up this station requires an area fifty feet (50') wide by approximately one hundred feet (100') long with the width being the critical dimension. Often one side of the exercise is placed directly against the straight line station reducing the number of cones required. Again, intermediate cones are spaced at twenty five feet (25') intervals with the entrance being centered on the fifty feet (50') side of the station. If space is limited the width of the station may be reduced; however, the width should not be less than the length of the largest vehicle plus ten feet (10').

The driver begins the station by entering and proceeding diagonally toward one corner of the confined space. The vehicle is then maneuvered back and forward without projecting outside of the area's boundaries until it can be driven out the entrance in a forward direction. It should be emphasized that the confined space turn around is not a three point turn around. In fact, it may require up to six (6), seven (7), or even eight (8) turns for larger vehicles to accomplish the one hundred eighty degree (180o) maneuver.

Station Three - Alley Dock Exercise

The purposes of the alley docking exercise are:

1. To familiarize the driver with positioning the emergency vehicle to back into a confined space.
2. To judge depth perception and distance using the vehicle's mirrors to position the rear of the vehicle at or close to a fixed point.

The layout of this station is exactly ten feet (10') wide, measured from inside of cone to inside of cone by thirty feet (30') long. It is not necessary to have the emergency vehicle completely in the dock area,

so the thirty feet (30') can be used for all sizes of vehicles.

One of the most convenient locations for this exercise is along the side of the entrance to the confined space turn around. If space is limited the alley docking station may be located as a free standing station convenient to the site's configuration.

When the vehicle leaves the previous exercise it can proceed past the alley dock station so as to position itself for backing into the alley. The intent of the exercise is for the vehicle to be backed into the alley and stop within eighteen inches (18") of the back of the alley.

Station Four - Serpentine Exercise

The purposes of the serpentine exercise are:

1. To familiarize the driver with the location of the corners of the vehicle for maneuverability purposes.
2. To familiarize the driver with the turning radius of the vehicle while proceeding forward and backward.
3. To require the driver to utilize both mirrors of the vehicle during one continuous exercise.
4. To increase the driver's confidence in the use of mirrors for vehicle maneuvering.

Setting up the serpentine station requires an area fifty feet (50') wide by two hundred feet (200') long. It is within the center of this overall area where the serpentine is set with four cones located forty feet (40') apart, measured center to center. For vehicles with a wheelbase of less than one hundred seventy inches (170"), the distance between the center cones is reduced to thirty-four feet (34'). The entrance to the exercise is centered along the fifty foot (50') side. The optimum location for the exit is along the side of the station between cones three and four. However, it can be located elsewhere if the site arrangement so dictates. If space is limited the width of the station may be reduced and the length shortened to one hundred sixty feet (160').

Upon entering the station the vehicle should be driven along the right side of the center cones. After passing the 3rd cone the vehicle should be "cocked" at a slight angle so as to position the rear of the vehicle between the 3rd and 4th cones. The driver then backs the vehicle between them, passing to the left of the third cone and to the right of the second cone. Then the driver should pass to the left of the first cone and back through the entrance. After backing through and stopping at the entrance the driver travels through the serpentine in a forward position. The vehicle should pass to the right of the first cone, left of the second cone, right of the third cone and then out the exit of the station.

Station Five - Off-Set Alley Exercise

The purposes of the off-set alley exercise are:

1. To allow the driver to become aware of the front and rear tracking of the vehicle.
2. To familiarize the driver with depth perception through the vehicle's mirrors, especially recognizing the location of the right rear wheel.

In setting up the offset alley station it should be emphasized that the distance between the alleys is forty-eight feet (48') for engines and fifty-two feet (52') for aerials. It must be carefully measured edge of cone to edge of cone. It is necessary for the station spotter to adjust this difference for each type of vehicle. An extended front bumper or other projections of the vehicle must not extend outside the alleys. In other words, treat the alley edges as if they are building walls or parked vehicles. When traversing the station the driver should proceed forward through the first alley and exit it. The

driver should change the track of the vehicle and enter the second alley without rubbing or knocking down any of the cones. Typical problems involve changing the track of the vehicle too quickly or not straightening the vehicle's track sufficiently before entering the second alley.

Station Six - Parallel Park Exercise

The purposes of the parallel park exercise are:

1. To allow the driver to understand the importance of vehicle positioning prior to starting a movement that requires an exact right side placement.
2. To familiarize the driver with the turning radius of the vehicle as it impacts restricted space placement.
3. To enable the driver to locate the position of the right front extremity of the vehicle while completing a maneuver.
4. To enable the driver to place the right side of the vehicle at a specific point utilizing the vehicle's mirrors.

Setting up the parallel park exercise requires that the station be adjusted for the specific emergency vehicle traveling the course. The length of the parking space should be adjusted to equal the length of the vehicle plus eight feet (8'). As an example, if the vehicle is twenty-eight feet (28'), the space should be twenty-eight feet (28') plus eight feet (8') for a total of thirty-six feet (36'). The depth of the parking space shall measure eight feet (8'). The distance of twelve inches (12") from the curb should be clearly marked.

The procedure for this station is to have the driver pull the emergency vehicle past the parking space and proceed to parallel park the vehicle in the designated space. The right side of the vehicle must be placed within twelve inches (12") of the curb. The most common mistake at this station is placing the right side of the vehicle either too close or too far from the curb. Crossing over the curb, parking too far from the curb, or knocking down cones that mark the parking space will result in penalty points added to the driver's score in accordance with the scoring schedule.

Station Seven - Diminishing Clearance Exercise

The purposes of the diminishing clearance exercise are:

1. To familiarize the driver with the importance of properly aligning a vehicle when entering a very confined asymmetrical area.
2. To familiarize the driver with traveling through a continually more confining restricted area.

The seventh station on the course is the diminishing clearance exercise. Approximately one hundred feet (100') in length, the entrance to the station is nine feet six inches (9'-6") wide, inside edge of cone to inside edge of cone. The concluding part of the exercise measures eight feet two inches (8'-2"), edge to edge. Extreme care must be taken in measuring the width of the station because of the very close tolerances of the vehicles that will travel the station.

All vehicles must travel the station without touching any of the cones even though the clearance is very minimal. The purpose of this exercise is for the driver to maneuver the vehicle through the station without brushing or knocking over any cones.

Two of the most common mistakes involve speed fluctuations through the exercise and misalignment of the vehicle's track upon entering the station.

Station Eight - Stopping Exercise

The purposes of the stopping exercise are:

1. To familiarize the driver with the position of the front of the vehicle.
2. To require the driver to brake smoothly and precisely while bringing the vehicle to a stop at a specified point.

Approximately forty feet (40') to sixty feet (60') beyond the end of the diminishing clearance station, three cones should be set parallel to each other and in the line of travel of the course vehicle. A mark at eighteen inches (18") from the cones must be made. The objective of the exercise is to bring the vehicle to a stop. The front bumper must not be more than eighteen inches (18") from the edge of the cones and not extend past the cones.

Stopping more than eighteen inches (18") from the edge of the cones or extending past their edge will result in penalty points being added to the driver's score in accordance with the scoring schedule.

The vehicle stop, which is the eighth station, completes the competency course.

Competency Course Participants Checklist:

- ✓ Attend candidate briefing and “walk through”.
- ✓ Be in staging area prior to assigned start time.
- ✓ Have name, vehicle name, and wheelbase, on score sheet.
- ✓ No food, drink or smoking while on the course.
- ✓ If your ESOs’ SOP requires wearing turnout/bunker gear when responding, then wear the required gear when driving the course.
- ✓ Wear seat belt
- ✓ Arms inside the cab at all times.
- ✓ Both hands on the wheel unless shifting gears.
- ✓ Maximum speed is 15 MPH.
- ✓ Operate with headlights on.
- ✓ Malfunctions should be reported immediately.
- ✓ Proceed only after being given the signal to do so.
- ✓ Do not out drive scorers – wait at station until scorers take their positions or wait until you are told to proceed – scorers choice.
- ✓ If the safety officer’s warning is sounded, stop immediately and remain so until told by the safety officer to proceed.
- ✓ When satisfied with the vehicles position at the alley dock, parallel park, and stop sign, set brake or sound horn so scorer knows to take sighting.

Competency Course Operators Checklist:

- ✓ Brief all involved. Make sure everyone knows their assignments and duties.
- ✓ Follow briefing with a “walk through”.
- ✓ Everyone on the course must be in a vest.
- ✓ Be sure all radios are on the same frequency.
- ✓ Two scorer/spotters are need for each vehicle.
- ✓ Scorers and others - do not walk along side of vehicle as it negotiates course.
- ✓ No one stands behind a vehicle that is backing. Stand off to the side when sighting rear placement.
- ✓ Safety officer must have alerting device – whistle, air horn, etc.
- ✓ Safety officer has no other duties or assignment but to continually monitor the running of the course.
- ✓ All on course heed safety officer alerting device immediately.
- ✓ Look for:
 - Headlights on
 - Both hands on steering wheel unless shifting gears
 - Seatbelts on
 - Speed under 15 mph