International

Safety Competition

EVENT LAYOUT
EVENT LAYOUT:

Each of the following sections includes the title of the event and layout instructions. The better understanding the contestants have of the events, the more successful they are likely to be during the competition.

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OFFSET ALLEY EVENT
**LAYOUT & DIRECTIONS:**

**Setup Tools for Offset Alley:**
- Heavy-duty claw hammer
- 1½ inch masonry nails (one box)
- Two 25 ft. tape measures
- One 100 ft. tape measure
- One 1000 ft. roll of nylon string
- One box of yellow marker crayons
- Carpenter’s Square
- Four to Six 10’ barriers w/flag tips
- Other
LAYOUT & DIRECTIONS:

Double Offset Alley Layout

Nail # 1 - Starting point.
Nail # 2 - Stretch string 120' from nail # 1 and tie off.

Adjustable Alley:
Length of Bus plus 3' for buses over 29'.
Length of Bus plus 2' for buses 29' or less.

Fixed Alley

Adjustable Alley:
Length of Bus plus 3' for buses over 29'.
Length of Bus plus 2' for buses 29' or less.
RAILROAD GRADE CROSSING – RIGHT TURN

LAYOUT & DIRECTIONS:

Setup Tools for Right Turn/RXR:
- Heavy-duty claw hammer
- 1 1/2 inch masonry nails (one box)
- One 30 ft. tape measure
- One 100 ft. tape measure
- One 1000 ft. roll of nylon string
- One box of yellow marker crayons
- Carpenter’s Square
- Three 100’ lengths of 5/8 inch curb line yellow rope
- Two rolls of duct tape (Silver or White)
- RXR sign marker & limit line
- Two turning scoring templates
- Other

RXR Grade Crossing - Right Turn Template to Template Set-Up
SAMPLE

Template to Template Turning Radius is 27 ft.

Curb to Curb Turning Radius is 24 ft.

CURB LINE

3 ft.

3 ft.

24 ft.

24 ft.

Curb Line

RXR
STRAIGHT LINE EVENT

LAYOUT & DIRECTIONS:

DIRECTIONS:

1. Measure a 75 ft. straight line and string.
2. Mark the line in intervals of 25 ft. with crayon or chalk.
3. Place a set of tennis balls on holders every 25 ft. Set the base of the ball holder on the outside edge of the string line.
4. Secure the measurement of the right rear duals of all vehicles used in competition. The measurement shall be from bulge to bulge. Tire sizes must be the same type if more than one vehicle type is used.
5. Use the measurement of the duals plus 3” to determine distance between balls.
6. Measure the alignment of the tennis balls from the inside edge of the tennis ball to the inside edge of the other tennis ball.
7. Make a visual check to be sure that there is a perfect straight line with the four sets of tennis balls.
8. Mark the location of the tennis ball holders with crayon or chalk.

Setup Tools for Straight Line:
- Heavy-duty claw hammer
- 1½ inch masonry nails (one box)
- One 12 ft. tape measure
- One 100 ft. tape measure
- One 1000 ft. roll of nylon string
- One box of yellow marker crayons
- Carpenter’s Square
- Ten tennis balls
- Ten tennis ball holders
- Other

String Line

75 ft.
50 ft.
25 ft.
0 ft.

Right Rear Dual Tires
DIMINISHING CLEARANCE EVENT

LAYOUT & DIRECTIONS:
1. Measure a distance of 100'.
2. Mark the measurement at 25' intervals.
3. Place a straight line down with string. Stretch tight.
4. Secure width of buses to be used in competition. Consider rub rails, rubber around tire wells or any other object that will hit the standards such as mirror brackets, etc.
5. Determine the measurement to be used at each diminishing clearance standard.
6. Measure from the center line out to the end of the flag or standard on each side to equal the total measurement. To make sure the measurement is correct, use plumb bob from tip of flag to ground where measurement was made.
7. Do a visual check to make sure that you have a diminishing alley from the perspective of the contestant entering the offset.
8. Mark bases of the standards with crayons or chalk.

String Line

Setup Tools for Diminishing Clearance
- Heavy-duty claw hammer
- 1½ inch masonry nails (one box)
- One 50 ft. tape measure
- One 100 ft. tape measure
- One 1000 ft. roll of nylon string
- One box of yellow marker crayons
- Carpenter's Square
- Plumb bob
- 10 diminishing clearance standards w/flag arms (36'' high minimum)
- Other

1st pair of standards With of bus plus 10 inches
2nd pair of standards With of bus plus 8 inches
3rd pair of standards With of bus plus 6 inches
4th pair of standards With of bus plus 4 inches
5th pair of standards With of bus plus 2 inches
BACK UP STALL EVENT

LAYOUT & DIRECTIONS:

Setup Tools for Backup Stall
- Heavy-duty claw hammer
- 1½ inch masonry nails (one box)
- One 30 ft. tape measure
- One 100 ft. tape measure
- Two 1000 ft. roll of nylon string
- One box of yellow marker crayons
- One roll of duct tape (Silver or Black)
- Carpenter’s Square
- Four 100’ lengths of 5/8 inch curb line yellow rope
- Two 25’ lengths of 5/8 inch limit line yellow rope
- Two backup stall equipment setups.
- Two timer clocks
- Other

Measure from the front and rear bumper only.
( DO NOT MEASURE FROM CROSSING CONTROL ARM.)

Back-Up Stall - 10 Foot Wide
Right Side of Bus Approach

Note: Stringing the stall by the numbers:

Nail #1 - Stall layout starting point.
Nail #2 - Stretch the string 100’ and nail #2.
Nail #3 - Measure 10’ across, using a 90 degree carpenters square, square the stall using the string and tape measure between #2 and #3. When squared, nail #3. Measure 5’ and place nail in center of stall.
Nail #4 - Stretch the string 100’, square the stall using the string between #1 and #2, measure 10’ and square the stall, nail #4.
Nail #5 - Stretch the string 35’ aligning with the outside edge of #1, nail and tie off.
Back-Up Stall - 10 Foot Wide
Right Side of Bus Approach

Right Side Approach:

Note: - Positioning front upright standards from front wheel limit line:

Mark #6 - Measure from #1 using the length of the shortest bus plus 1' to 4' depending on the bus type and place #6.
Mark #7 - Measure from #4 using the length of the shortest bus plus 1' to 4' depending on the bus type and place #7.

Nail #8 - Measure from the outside edge of #6 to the outside edge of #7. Nail #8 5' at the center of the stall.

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Back-Up Stall - 10 Foot Wide
Right Side of Bus Approach

Approach

110' 25' Limit Line/Barrier

10' 10'

Line Two

Line One

110'

**LEFT TURN EVENT**

**LAYOUT & DIRECTIONS:**

**Left Turn Template to Template Set-Up**

**Setup Tools for Left Turn:**
- Heavy-duty claw hammer
- 1½ inch masonry nails (one box)
- One 30 ft. tape measure
- One 100 ft. tape measure
- One 1000 ft. roll of nylon string
- One box of yellow marker crayons
- Carpenter’s Square
- Three 100’ lengths of 5/8 inch curb line yellow rope
- Two rolls of duct tape (Silver or White)
- RXR sign marker & limit line
- Two turning scoring templates
- Other

**Step One** – Set the 50ft. curb line.
**Step Two** – At a left angle, measure 24ft., string and square off of the curb line.
**Step Three** – At a left angle, measure 24ft., string and square off of the line you just set.
**Step Four** – At a left angle set curb line and square off of the line you just set.
**Step Five** – Place entry scoring template 3ft. from curb line and square off as shown in diagram.
**Step Five** – Place recovery scoring template 3ft. from curb line and square off as shown in diagram.

**Note:**
- Materials Need for set-up:
  1. Curb line rope – 5/8 nylon yellow in color
  2. 1000ft. roll of nylon string
  3. Box of 1½ inch missionary nails
  4. Heavy duty carpenters or mechanics hammer
  5. Gorilla black duct tape if nails are prohibited
  6. Knee pads
  7. Square
PARALLEL PARKING EVENT

LAYOUT & DIRECTIONS:

Setup Tools for Parallel Parking Stall
- Heavy-duty claw hammer
- 1½ inch masonry nails (one box)
- One 12 ft. tape measure
- One 50 ft. tape measure
- One 1000 ft. roll of nylon string
- One box of yellow marker crayons
- Carpenter’s Square
- 50’ of 5/8 inch curb line yellow rope
- Other

DIRECTIONS:
1. Layout the 50’ rope curb line “A”.
2. Align the outside edge of the 8’ barriers “B” & “C” on curb line “A” at a 90 degree angle.
3. Layout a parallel string line “D”, 8’ from curb line “A” at a 90 degree angle to barrier B and C.
4. Measure and mark along curb line “A” and parallel line “D” the appropriate stall lengths.

Settings for bus stall lengths:
- Transit Bus: Length of bus plus 6’
- Conventional Bus: Length of bus plus 7’
- Van type Bus: Length of bus plus 7’

5. Move barrier “B” as necessary for appropriate bus length.
ELEMENTARY STUDENT LOADING EVENT

LAYOUT & DIRECTIONS:

Setup Tools for Elem. Student Loading
- Heavy-duty claw hammer
- 1½ inch masonry nails (one box)
- One 100 ft. tape measure
- One box of yellow marker crayons or chalk
- 50' of 5/8 inch curb line yellow rope
- Student Sign
- Other

1. Layout a 50 ft. curb line rope “A”. This will represent the right side of the roadway.
2. Place the Student Sign “B” near the end of and behind the curb line or edge of roadway.
3. Mark where the Student Sign is to be located with crayons or chalk.
4. Make a small crayon or chalk mark “C” 10 ft. from the Student Sign, this will represent the closest the bus can stop from the student.
5. Make a small crayon or chalk mark “D” 15 ft. from the Student Sign which indicates the bus is further than 15 ft. away from the student.
CURB LINE PARK EVENT

LAYOUT & DIRECTIONS:

Setup Tools for Curb Line Parking Stall
- Heavy-duty claw hammer
- 1½ inch masonry nails (one box)
- One 12 ft. tape measure
- One 100 ft. tape measure
- One 1000 ft. roll of nylon string
- One box of yellow marker crayons
- Carpenter’s Square
- 120’ of 5/8 inch curb line yellow rope
- Other

DIRECTIONS:
1. - Layout the 120’ rope curb line "A".
2. - Align the outside edge of the 8’ barriers "B" & "C" on curb line "A" at a 90 degree angle.
3. - Layout a parallel string line "D", 8’ from curb line "A" at a 90 degree angle to barrier B and C.
4. - Measure and mark along curb line "A" and parallel line "D" the appropriate stall lengths.

Settings for bus stall lengths:
- Transit Bus
- Conventional Bus
- Van type Bus

3 times the Length of bus
3 times the Length of bus
3 times the Length of bus

5. - Move barrier "B" as necessary for appropriate bus length.
**STOP LINE EVENT**

**LAYOUT DIRECTIONS:**

1. Determine location of stop. Make sure that it does not line up with any ground reference that could be used as a marker.
2. Place a 6 ft. stop line rope on the location determined for the stop line.
3. Place a stop sign on a standard to the right of the line, but not in a location that can be used as a marker or ground reference.

**Setup Tools for Stop Line Event**

- Heavy-duty claw hammer
- 1½ inch masonry nails (one box)
- One 12 ft. tape measure
- One box of yellow marker crayons
- 6 ft. of 5/8 inch curb line yellow rope
- One stop sign and stand
- Event measuring device
BUS MEASURING POINTS:

How to use the measuring device

Measuring from the center of the tire tread
Measuring from the body

For Events: Parallel Parking and Curb line Parking