

# International Bus Roadeo Handbook

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**AUSTIN, TX**





# **2025 INTERNATIONAL BUS ROADEO HANDBOOK**

*Published by the*  
International Bus Rodeo Committee

*Hosted by*  
Capital Metropolitan Transportation Authority (CapMetro)



**American Public Transportation Association**

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# FOREWORD

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## **APTA's Purpose Statement:**

The American Public Transportation Association (APTA) is a nonprofit international association of more than 1,500 public and private sector member organizations. Benefits to our members include advocacy for federal funding and policies, research, technical expertise and consulting services, workforce development programs, educational conferences and seminars, and 135 subject-matter working committees.

APTA is the only association in North America that represents all modes of public transportation, including bus, paratransit, light rail, commuter rail, subways, waterborne services, and intercity and high-speed passenger rail. More than 90 percent of the people using public transportation in the United States and Canada ride APTA member systems.

Our membership is engaged in every aspect of the industry – from planning, designing, financing, constructing and operating transit systems to the research, development, manufacturing and maintenance of vehicles, equipment and transit-related products and services. Additionally, academic institutions, transportation network companies, transit associations and state departments of transportation are APTA members.

## **APTA's Diversity Policy:**

APTA promotes an inclusive culture that supports and celebrates the unique attributes and perspectives of its individual members, allowing each and every person to make their fullest contribution to the industry. APTA defines diversity as the inclusion of differences and similarities from all categories of members and covers such areas as disability, gender, gender identity and sexual orientation, age, ethnicity, race and geographic origin, size of transit property or business member organization, all of which contribute to the fulfillment of APTA's mission.

## **The International Bus Roadeo Statement:**

The International Bus Roadeo includes competition events for both bus operators and maintenance technicians. Awards are given in each practice area, and there is an overall grand prize for the transit system with the highest combined score for the bus operator and bus maintenance team. The event concludes with an awards ceremony and celebration for the agencies, contestants, and their families.

The International Bus Roadeo Committee's goals are to provide the most equitable competition possible, encourage the highest degree of professionalism in bus operators and maintenance technicians, and build camaraderie among all those who compete. Through sportsmanship and pride of work, the APTA International Bus Roadeo stands as a symbol of the important role bus operators and maintenance technicians play in providing transit customers with safe, reliable service. We look forward to your support and participation in this year's International Bus Roadeo competition. This handbook contains rules and guidelines for Roadeo participants.

*Please note: Roadeo courses, problems, and distances are depicted here as guidelines, with distances and measurements of approximate value. They should be used as a general resource in helping the participant prepare for the competition but may not reflect the specific measurements on the day of the Roadeo.*

Thank you for your interest and participation. Good luck!



## HOST LETTER



# INT'L BUS ROADEO

APTA 2025 • ATX • CAPMETRO



## Welcome to Austin, Texas y'all!

On behalf of CapMetro, I am thrilled to welcome y'all to the 2025 International Bus Rodeo right here in the Live Music Capital of the World. As the capital of the great Lone Star State, Austin is home to plenty of historic charm, the best barbecue, natural pools, and a bustling music and film industry. Keep your eyes peeled, you may get lucky and see Matthew McConaughey or Gary Clarke Jr. around town.

Whether it's your first time in Austin, or you're a regular visitor, you may have heard our slogan, "Keep Austin Weird." But to us that live here, it's not just a slogan, it's our culture. We are a melting pot of creativity and innovation that welcomes everyone and anyone. As you wander the streets of Austin, know this city is home to entrepreneurs, artists, cowboys, and more who have a type of hospitality you won't get anywhere else. It's also home to Tito's Vodka, cold margaritas and Willie Nelson himself.

That being said, I hope you've set aside some time to hop aboard CapMetro and visit Zilker Park and Lady Bird Lake, try out one of our many barbecue restaurants (some of which have just recently received a Michelin Star), take a dip in Barton Springs Pool, or visit an iconic music venue like the Broken Spoke or the Continental Club, and take in all the wonder that is Austin. Our buses and commuter rail can take you just about anywhere. Don't be surprised if you fall in love with ATX, it can have that effect on nearly everyone!

We are so grateful that APTA chose CapMetro to host all of you for the International Bus Rodeo this year. Y'all are here because you are accomplished individuals who have earned the right to showcase your skills on the big stage, which means there's no better opportunity to exchange stories and swap best practices with your peers. As a former bus operator, I know that one of the best ways to boost your own skills, and the transportation industry as a whole, is by sharing our knowledge with each other. Together, we're not just moving vehicles - we're moving the entire industry forward.

This is a vibrant, dynamic city, and we are excited to share our true Texas hospitality and culture with all of you. We hope you enjoy your time here!

Best of luck to each of you in this competition. **Let's Rodeo!**

**Dottie Watkins**  
President & CEO  
CapMetro

**CapMetro**

# TABLE OF CONTENTS

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FOREWORD.....	1
HOST LETTER .....	2
TABLE OF CONTENTS .....	3
APTA INTERNATIONAL BUS ROADEO SCHEDULE .....	6
GENERAL INFORMATION .....	9
1. Contestant Qualifications .....	9
2. Ineligibility .....	9
3. Team Registration .....	9
4. Schedule .....	9
5. Spectators .....	10
AWARDS/SCORING .....	11
1. General .....	11
2. Grand Champion and Combined Competition Scoring .....	11
3. Grand Champion and Combined Competition Awards .....	11
4. Bus Operator/Maintenance Technician Awards .....	12
BUS OPERATOR ROADEO .....	13
1. Scheduled Activities .....	13
1.1 Friday .....	13
1.2 Saturday .....	13
1.3 Sunday .....	14
2. Equipment .....	14
3. Competition Events .....	14
3.1 Pre-Trip Inspection Competition .....	14
3.1.1 Defects .....	14
3.1.2 Time .....	15
3.1.3 Scoring .....	15
3.2 Bus Operator Obstacle Course .....	16
3.2.1 Serpentine .....	16
3.2.2 Offset Street .....	16
3.2.3 Rear Duals Clearance .....	16
3.2.4 Right Turn .....	16
3.2.5 First Customer Stop .....	17
3.2.6 Left Hand Reverse .....	17
3.2.7 Left Turn .....	17
3.2.8 Second Customer Stop .....	17
3.2.9 Right Hand Reverse .....	17
3.2.10 Diminishing Clearance .....	18
3.2.11 Judgement Stop .....	18
3.3 Other Scored Events .....	18
3.3.1 Safety Habits .....	18

3.3.2 Smoothness of Operation .....	18
3.3.3 Uniform Inspection .....	19
3.3.4 Total Course Time .....	19
4. Bus Operator Contestant Scoring .....	19
4.1 Driving Competition .....	19
4.2 Pre-Trip Inspection .....	20
MAINTENANCE TECHNICIAN ROADEO .....	21
1. General Information .....	21
2. Competition Events .....	21
2.1 Written Test .....	22
2.1.1 Description .....	22
2.1.2 Time .....	22
2.1.3 Scoring .....	22
2.1.4 Tie Breakers .....	22
2.2 USSC Vehicle Inspection .....	22
2.2.1 Defects .....	22
2.2.2 Time .....	23
2.2.3 Scoring .....	23
2.3 Allison Transmission / Cummins / EMP Powertrain Event .....	24
2.3.1 Description .....	24
2.3.2 Defects .....	25
2.3.3 Time .....	26
2.3.4 Safety .....	26
2.3.5 Scoring .....	26
2.4 Cummins / Voith Powertrain Event .....	27
2.4.1 Description .....	27
2.4.2 Defects .....	28
2.4.3 Time .....	29
2.4.4 Safety .....	29
2.4.5 Scoring .....	29
2.5 Custom Training AIDS / Bendix Air Brake System (ABS) Event .....	30
2.5.1 Description .....	30
2.5.2 System Components .....	30
2.5.3 Defects .....	31
2.5.4 Time .....	32
2.5.5 Scoring .....	32
2.6 Thermo King HVAC IntelligAIRE Event.....	32
2.6.1 Description .....	33
2.6.2 Components .....	33
2.6.3 Equipment .....	33
2.6.4 Defects .....	33



2.6.5 Time .....	34
2.6.6 Scoring .....	34
2.7 MCI/New Flyer Multiplex .....	35
2.7.1 Description .....	35
2.7.2 Components .....	35
2.7.3 Equipment .....	35
2.7.4 Defects .....	35
2.7.5 Time .....	35
2.7.6 Safety .....	36
2.7.7 Scoring .....	36
2.8 Vapor Door Event .....	37
2.8.1 Description .....	37
2.8.2 Components .....	37
2.8.3 Equipment .....	37
2.8.4 Time .....	38
2.8.5 Defects .....	38
2.8.6 Safety .....	38
2.8.7 Scoring .....	38
3. Maintenance Technician Scoring .....	39
2024 APTA INTERNATIONAL BUS ROADEO COMPETITION BUS .....	40
ROADEO SITE .....	42
APPENDICES .....	43
Appendix 1: Swap Meet .....	44
Appendix 2: Frequently Asked Questions .....	45
Appendix 3: Bus Operator Course Descriptions .....	55
Appendix 4: Bus Operator Obstacle Descriptions .....	56
Appendix 5: Bus Operator Score Sheets .....	64
Appendix 6: Maintenance Technician Score Sheets .....	81
2024 INTERNATIONAL BUS ROADEO COMMITTEE .....	90
NOTES .....	102

# APTA INTERNATIONAL BUS ROADEO SCHEDULE

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## Roadeo Hotel:

Austin Marriott Downtown  
304 E Cesar Chavez St, Austin, TX 78701

## Roadeo Site:

Toney Burger Center  
4709 S. Lamar Blvd, Sunset Valley, TX 78745

*Shuttle service will be provided from the host hotel to the Roadeo site.  
Shuttle schedule, maps, and directions will be available on the APTA website and app.*

## COMMITTEE & CONTESTANT SCHEDULE

### Wednesday, April 2

All Day

*\*\*Committee Members begin arriving*

### Thursday, April 3

7:30 am

Committee Members Depart Hotel for Roadeo Site

*\*\*Breakfast and Lunch will be served at the Roadeo site*

8:00 am – Until

Bus Roadeo Committee Course Set Up

3:00 – 5:00 pm

Bus Roadeo Judges Overview/Training

*\*\*timing subject to change based on completion of course set up*

4:30 – 6:30 pm

Roadeo Registration at Hotel

### Friday, April 4

All Day

*\*\*Contestants begin arriving*

7:30 am

Committee Members Depart Hotel for Roadeo Site

*\*\*Breakfast and Lunch will be served at the Roadeo site*

8:00 am – Until

Bus Roadeo Committee Driving Course &  
Maintenance Event Set Up

2:00 – 7:00 pm

Roadeo Registration at Hotel

3:00 – 4:30 pm

Bus Roadeo Committee Meeting

7:00 – 8:30 pm

Bus Operator Orientation

7:30 – 8:30 pm

Maintenance Technician Orientation

## Saturday, April 5

***\*\*all maintenance events will be at Austin Marriott Hotel***

6:00 – 7:00 am	Maintenance Technician Breakfast
7:00 – 9:00 am	Roadeo Registration at Hotel
7:30 – 8:15 am	Maintenance Technician Written Test
8:00 am – 6:00 pm	Bus Operator Driving Course Practice and Pre-Trip Competition <i>(at Roadeo Site)</i> <i>*Breakfast &amp; Lunch will be served at Roadeo site.</i> <i>**see app and website for shuttle schedule to Roadeo site</i>
8:45 am – 12:00 pm	Maintenance Technician Training – Part 1 8:45 – 9:30 <i>Custom Training Aids Brake Board</i> 9:30 – 10:15 <i>MCI</i> 10:15 – 10:30 <i>Break</i> 10:30 – 11:15 <i>Thermo King HVAC</i> 11:15 – 12:00 <i>Vapor Door</i>

### **MAINTENANCE TECHNICIAN LUNCH 12:00 – 1:00pm**

***(Lunch provided by APTA)***

1:30 – 4:45 pm	Maintenance Technician Training – Part 2 1:30 – 2:15 <i>EMP</i> 2:15 – 3:00 <i>Voith</i> 3:00 – 3:15 <i>Break</i> 3:15 – 4:00 <i>Cummins</i> 4:00 – 4:45 <i>Allison</i>
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## Sunday, April 6

***\*\*see app and website for shuttle schedule to Roadeo site***

6:00 am	IBR Committee & Judges Depart Hotel for Roadeo Site <i>*departure time subject to change</i>
7:00 am – Until	IBR Committee & Judges Onsite at Course
8:00 am – Until	International Bus Roadeo Competition
5:00 pm – 6:00 pm	Swap Meet Table Set Up
6:30 pm – 8:00 pm	Swap Meet & Reception

*Join your colleagues and rival contestants alike for our annual IBR Swap Meet. Enjoy light hors d'oeuvres and drinks in a reception style setting surrounded by rows and rows of tables with swappable goods. You will have the opportunity to arrange your wares on a 6-foot table alongside other competing agencies and swap your agency goods for other agency goods. There are no price tags as nothing is for sale, but everything is for swap. If you choose not to set up a table, simply browse what is available and swap as you go.*

## Monday, April 7

*APTA International Bus Rodeo Workshops are Designed for Bus Rodeo Contestants.*

*Rodeo committee, competitors, and supervisors are welcome at all conference activities. These highlighted sessions are formatted for Rodeo participants. More information can be found in the conference program/app.*

8:00 – 9:00 am	Continental Breakfast
9:00 am – 11:00 am	Bus Operator Workshop
9:00 am – 11:00 am	Maintenance Technician Workshop
11:00 am – 3:00 pm	Bus Display Open
11:30 am – 1:30 pm	Lunch at the Bus Display
3:00 – 5:00 pm	Bus Operator Workshop
3:00 – 5:00 pm	Maintenance Technician Workshop

## Tuesday, April 8

8:00 – 9:00 am	Continental Breakfast
9:00 am – 11:00 am	Bus Operator Workshop
9:00 am – 11:00 am	Maintenance Technician Workshop
9:30 am – 3:30 pm	Product & Services Showcase
11:30 am – 1:30 pm	Products & Services Showcase Lunch
1:30 – 2:30 pm	Pre-Awards Briefing
2:30 – 3:30 pm	Dessert Break in the Product & Services Showcase
5:00 – 6:00 pm	International Bus Rodeo Grand Awards Ceremony <i>**Open to All</i>
6:30 – 8:30 pm	International Bus Rodeo Awards After Party <i>**Ticketed Event</i>

## Wednesday, April 9

8:00 – 9:00 am	Bus Rodeo Committee Meeting Debrief <i>**Breakfast will be served</i>
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# GENERAL INFORMATION

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*Note: Each APTA member transit system is entitled to send 1 bus operator in the 40+ foot category and/or 1 maintenance team (maximum of 3 technicians) to the International Bus Roadeo Competition. APTA reserves the right to interpret this rule according to the transit system's membership status.*

## 1. Contestant Qualifications

To compete in the APTA International Bus Roadeo, contestants are required to meet certain qualifications. Local transit systems are expected to enforce the following eligibility requirements.

Contestants must:

- Be employees of an APTA member transit system in good standing or represent a Community Transportation Association of America (CTAA) member organization in good standing with APTA
- Have worked, full-time or part-time, in the field in which they are competing (bus operator or maintenance technician) for not less than 1 year prior to the date of the Roadeo and must have a job description that matches the position for which they are applying
- Meet their local transit system's guidelines on sickness and absenteeism
- Possess a Commercial Driver's License (CDL) with appropriate endorsements. (should we add this stipulation?)

## 2. Ineligibility

Any of the following conditions during the span of 1 year prior to the Roadeo competition date make an employee ineligible to compete:

- A preventable or chargeable accident
- A suspension as a result of punitive action
- Compensation for and/or functioning as an instructor/trainer for 60 days or more in the previous year. Should this be converted to hours verses days?

*NOTE: Contestants are not permitted to receive compensation for practice time during the time between their local Roadeo and the APTA International competition. For purposes of the Roadeo, compensation is considered to be paid time.*

## 3. Team Registration

Teams may register at [www.apta.com/mobility](http://www.apta.com/mobility). All participants must be registered by March 10, 2025 in order to receive a badge and participate.

## 4. Schedule for Competitors

A more detailed schedule with times and locations is located online at [www.apta.com/mobility](http://www.apta.com/mobility).

**Friday:** Orientation for Operators and Maintenance Technicians

**Saturday:** Bus Operator Pre-Trip Inspection Competition, Bus Operator Practice, and Maintenance Technician Testing, and Training Sessions

**Sunday:** International Bus Roadeo Competition and Swap Meet/Reception

**Monday:** Training Workshops and Bus Display

**Tuesday:** Training Workshops, International Bus Roadeo Awards Ceremony and Celebration

## **5. Spectators**

Spectators are welcome in the bus operator and maintenance spectator areas but are not allowed on the bus operator obstacle course or in the maintenance tents. The availability of the spectator areas for the maintenance technician events varies from year to year based on space. Due to the nature of the maintenance technician events, a common spectator area may not be available. Still photos are allowed during the competition. Absolutely no video cameras or videotaping are allowed in the maintenance technician competition area.

# AWARDS/SCORING

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## 1. General

- Award winners will be announced at the International Bus Roadeo Awards Ceremony on Tuesday evening
- Final scores and order of finish for all contestants will be available immediately following the Awards Ceremony

## 2. Grand Champion and Combined Competition Scoring

Only those transit agencies with participants in both the Bus Operator and Maintenance Technician events are eligible to compete for Grand Champion. The Grand Champion will be determined by the average percentage of points scored for both events. The percentage is determined by dividing the points scored by the points possible. For example:

<b>Total possible points:</b>	Bus Operator: 700	Maintenance Technician: 2,575
<b>Team A</b>	Bus Operator: 675	Maintenance Technician: 2,225
<b>Team B</b>	Bus Operator: 625	Maintenance Technician: 2,375

Team A's score **would be calculated as follows:**

Bus Operator Score: 96.43 % (675/700)

Maintenance Technician Score: 86.41% (2225/2575)

Add the percentages together: 96.43 % + 86.41% = 182.84 %

Divide by 2:  $182.84 \div 2 = 91.42$

Team B's score **would be calculated as follows:**

Bus Operator Score: 89.29 % (625/700)

Maintenance Technician Score: 92.23 % (2375/2575)

Add the percentages together: 89.29 % + 92.23 % = 181.52 %

Divide by 2:  $181.52 \div 2 = 90.76$

Team A would win the Grand Champion Award

## 3. Grand Champion and Combined Competition Awards

- The Grand Champion team members will each receive \$1,500 U.S. and the agency will receive a an award/medal.
- Tie breakers for Grand Champion will be determined as follows: the lowest total combination of the elapsed time for the designated bus operator plus the total elapsed times for the Allison Powertrain, Cummins/Voith Powertrain, and Custom Training Aid Brake Board events.
- Teams placing second and third in the combined competition will receive awards/medals.



#### 4. Bus Operator/Maintenance Technician Awards

- **The first-place winners** in each of the competitions, Bus Operator and Maintenance Technician, will each receive \$1,000 U.S., an award/medal and a Champion's ring. The transit systems will also receive an award **The second-place winners** in each of the competitions, Bus Operator and Maintenance Technician, will each receive \$500 U.S. and an award/medal. The transit systems will also receive an award/medal
- **The third-place winners** in each of the competitions, Bus Operator and Maintenance Technician, will each receive \$250 U.S. and an award/medal. The transit systems will also receive an award/medal.
- A separate award will recognize the highest scores for the Bus Operator competition.
- A separate award will recognize the highest scores in each of the Maintenance Technician events.

# BUS OPERATOR ROADEO

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## 1. Scheduled Activities

Please refer to the Rodeo Schedule or [www.apta.com/mobility](http://www.apta.com/mobility) for a more detailed schedule of events, times, and locations.

### 1.1 Friday

#### Orientation

- The final course layout will be distributed.
- Official starting time schedules and course diagrams or aerial photo with obstacles on it will be distributed.
- Drone fly over will be shown, if available
- On-Course Rodeo Officials will be introduced
- Question and Answer Session regarding the published rules.
- Display buses will be available for the contestants to preview immediately following orientation.

### 1.2 Saturday

#### Driving practice

- Visual inspection of the Rodeo obstacles is only allowed while outside of the designated course perimeter on practice day and competition day.
- Bus Operator contestants will be allowed to inspect the course visually (from the course periphery only) on practice day only.
- On practice day, contestants are required to check-in at the on-site registration area at least 45 minutes before their scheduled start time. Bus Operator contestants who report late on practice day will not be allowed to make their practice run.
- Each bus operator contestant will be allowed one (1) practice run and are not allowed to ride with other contestants.
- While the practice run is not mandatory, bus operator contestants are strongly encouraged to participate.
- Uniforms are optional for practice, but proper footwear must be worn.
- ***NEW: All operator contestants must have their driving ID with them during practice and Rodeo day (no exceptions)***
- Absolutely no cell phones, ear buds or other video/audio recording devices (except hearing aids) are allowed to be used while on the course during practice or while competing by any bus operator. Immediate disqualification for breaking this rule.

#### Pre-trip inspection

- Bus Operator contestants will perform a Pre-Trip Inspection that will be scored.
- There is no practice for this event. Bus Operator contestants will be assigned a time to report for the Pre-Trip Inspection Competition.
- Bus Operator contestants should report 15 minutes prior to their assigned time to the Pre-Trip Inspection report area.
- The Pre-Trip Inspection Competition is mandatory for **all** competing bus operator contestants and is included in the final scoring.

## 1.3 Sunday

### Competition

- Bus operators are required to report to the Registration area at the Roadeo site at least 45 minutes before their scheduled competition start time. Bus Operators who report late on competition day may be disqualified from competition.
- On competition day, bus operators will not be tested with a safety quiz or defective bus test.
- ***NEW: The operator uniform inspection (formerly personal appearance) is a part of the 2025 Roadeo competition. Upon check-in at the Roadeo site, operators' uniforms and driver ID's will be inspected as part of the Roadeo competition. See Uniform Inspection section for more details.***
- ***NEW: All operator contestants must have their driving ID with them during practice and Roadeo day (no exceptions) for inspection.***
- Bus operators must be in the full regulation uniform of their transit system for competition inspection. Upon completion of the inspection, bus operators will be allowed to remove coats and ties, if desired. Each course is uniquely engineered for every Roadeo. Therefore, the order of events (obstacles) may be laid out differently than shown in this handbook. However, the construction of each obstacle will be in accordance with the provisions stated in this handbook.
- Roadeo Officials will attempt to utilize the measurements outlined in this handbook; however, Roadeo Officials reserve the right to make changes based on the space available at the Roadeo site and equipment variations. The course will be verified by the On-Course Officials to ensure that all obstacles are negotiable with the equipment provided.
- Absolutely no cell phones, ear buds or other video recording devices (except hearing aids) are allowed to be used while on the course during practice or while competing by any bus operator. immediate disqualification for breaking this rule.

## 2. Equipment

- Bus Operator contestants will compete using a 40+ foot New Flyer Electric Bus.
- The buses will be equipped with bike racks if used by the host property.
- Competition vehicle specification sheets can be found in the Host Information section of this handbook.

## 3. Competition events

### 3.1 Pre-Trip Inspection Competition – Saturday

The Pre-Trip Inspection Competition is mandatory and an important part of your overall score. To identify the planted defects, it is important to have a systematic approach to the pre-trip inspection to ensure complete coverage of the bus. It is highly recommended you prepare for this competition event, and you spend time on the display bus to familiarize yourself with the model and series of the bus.

#### 3.1.1 Defects

- 8 equipment-related defects and 1 security hazard are planted on or in a bus. These defects would make a bus operationally unready or unsafe.
- Defects are of a type that a bus operator would find when performing a pre-trip inspection.
- Identification of defects does not require starting the bus or crawling under the bus.
- Bus Operator contestants will not be allowed to have a checklist of defects to refer to during the competition.

- Eligible defects might include broken, loose, bad, missing, or incorrect:
  - Seats
  - Any type of lights
  - Windows
  - Stanchions
  - Flooring
  - Fire extinguisher
  - Windshield
  - Wipers
  - Mirrors
  - Number
  - Doors
  - License plate
  - Bell cord
  - Hazard such as an abandoned package or briefcase
- Ineligible defects include:
  - Defects under the bus
  - Exterior body damage
  - Paint Problems
  - Wheelchair Operations
  - Kneeling functions
  - Radios
  - Fare boxes
  - Destination Signs
  - Battery compartment
- Equipment where multiple defects are possible will be counted only once, i.e., seats, windows, lights.
- Front and rear windows, headlights, taillights, brake lights, mirrors, and turn signals each count as separate defects.

### **3.1.2 Time**

- Each bus operator contestant will be allotted 8 minutes to inspect, locate, identify, and legibly record any defects found.
- Time warnings will be given to the bus operator contestant at the 2-minute, 1-minute, and 30-second time marks.
- Recording defects, returning bus to original condition, and securing doors will not be allowed after time has elapsed.

### **3.1.3 Scoring**

- 5 points will be awarded for each of the 8 planted defects found, and 10 points will be awarded for 1 planted security challenge for a maximum of 50 points.
- Points will be awarded only for those recorded defects that were planted by the judges. No points will be awarded for the identification of defects that were not planted.
- The bus operator will notify the judge when finished. Once notice is given, the bus operator may not list additional defects.
- The judge will review the list of defects with each bus operator contestant for clarification.

- A penalty of 1 point will be assessed for each instance where the bus is not returned to its original condition; for example, 1 point assessed for lights left on, wipers left running, master switch on, windows open, and escape hatches open, etc.

*Starting the bus constitutes a safety violation and will result in the bus operator contestant being disqualified from this event. The inspection bus will be supplied with necessary electrical power and air pressure.*

### **3.2 Bus Operator Obstacle Course**

The 11 driving obstacles are worth 50 points each. See **Appendix 4** for Bus Operator obstacle descriptions. Reckless use of the equipment and flagrant disregard for the safety of others may result in immediate disqualification. If a cone gets lodged under the bus, it becomes part of the bus, and if it knocks down other cones points will be deducted.

#### **3.2.1 Serpentine**

- This obstacle tests the contestant's ability to negotiate tight turns. The contestant enters the course through a 'gate' and steers in and out through 3 cones and exits through a 'gate.'
- Points will be deducted for:
  - Touching cones
  - Shifting into reverse
  - Not completing the course as designed

#### **3.2.2 Offset Street**

- This obstacle requires the bus operator contestant to drive through 2 separate narrow lanes that are offset to the right 1 full lane's width from each other.
- Points will be deducted for:
  - Touching cones
  - Shifting into reverse
  - Not completing the course as designed

#### **3.2.3 Rear Duals Clearance**

- This is an obstacle where the bus operator contestant must drive through a lane with the right dual tires. The lane is only slightly wider than the total outside width of a pair of rear duals and is marked with large flat washers and tennis balls. The lane diminishes in width from the entrance to the exit.
- Points will be deducted for:
  - Touching balls
  - Shifting into reverse
  - Not completing the course as designed

#### **3.2.4 Right Turn**

- This obstacle tests the bus operator contestant's ability to negotiate a tight 90-degree turn. The corner is marked with cones, and the right rear tire of the bus is to pass within 6 inches of the corner cone.
- Points will be deducted for:
  - Touching cones
  - Shifting into reverse
  - Excessive right rear tire clearance
  - Not completing the course as designed

### **3.2.5 First Customer Stop**

- This event simulates a customer stop. The bus operator contestant should stop the vehicle with the front right tires within 6 inches of the simulated curb. Rear tires must be within 15 inches of the simulated curb. After stopping the vehicle, the bus operator contestant is required to open the door to complete the test. An ADA stop announcement must be made before exiting the passenger stop.
- Points will be deducted for:
  - Touching cones
  - Touching 'curb'
  - Front tire measurement over 6 inches
  - Rear tire measurement over 15 inches
  - Shifting into reverse
  - Not completing the course as designed

### **3.2.6 Left Hand Reverse**

- This obstacle tests the bus operator contestant's ability to back the vehicle between 2 obstacles which requires the vehicle to back up to the left.
- Points will be deducted for:
  - Touching cones
  - Shifting into reverse after the initial reverse
  - Rear clearance beyond 36 inches

### **3.2.7 Left Turn**

- This obstacle tests the bus operator contestant's ability to make a tight left turn in a close situation. The bus operator contestant is required to steer the vehicle into a 90-degree turn without touching any of the cones.
- Points will be deducted for:
  - Touching cones
  - Shifting into reverse
  - Not completing the course as designed

### **3.2.8 Second Customer Stop**

- This event simulates another customer stop. The bus operator contestant should stop the vehicle with the front right tires within 6 inches of the simulated curb. Rear tires must be within 15 inches of the simulated curb. After stopping the vehicle, the bus operator contestant is required to open the door to complete the test. An ADA stop announcement must be made before exiting the passenger stop.
- Points will be deducted for:
  - Touching cones
  - Touching 'curb'
  - Front tire measurement over 6 inches
  - Rear tire measurement over 15 inches
  - Shifting into reverse
  - Not completing the course as designed

### **3.2.9 Right Hand Reverse**

- This obstacle tests the bus operator contestant's ability to back up the vehicle between 2 obstacles which requires the vehicle to back up to the right.
- Points will be deducted for:

- Touching cones
- Shifting into reverse after the initial reverse
- Rear clearance beyond 36 inches
- Not completing the course as designed

### **3.2.10 Diminishing Clearance**

- This obstacle tests the bus operator contestant's ability to judge the position and speed of the vehicle. The bus operator contestant is required to drive through a narrowing, V-shaped channel outlined with barrels. The bus must obtain a minimum speed of 20 miles per hour within the obstacle.
- Points will be deducted for:
  - Touching barrels
  - Speed below 20 miles per hour
  - Not completing the course as designed

### **3.2.11 Judgment Stop**

- This event tests the bus operator contestant's ability to judge stopping distances between the bus and a small object directly ahead. A small cone is placed on the final stop. The bus operator contestant must stop with the front bumper or bike rack within 6 inches of the cone.
- Points will be deducted for:
  - Touching cone
  - Excessive total stops
  - Excessive clearance beyond 6 inch limit
  - Not completing the course as designed

## **3.3 Other Scored Events**

### **3.3.1 Safety Habits**

- The bus operator contestant's safety habits will be reviewed while operating the vehicle.
- This event category is worth 25 points.
- Points will be deducted for:
  - Failure to use proper turn signals
  - Failure to sound the horn before backing up
  - Failure to use flashers while backing up
  - Moving vehicle with door open
  - Poor posture
  - Poor use of mirrors
  - Poor use of hands
  - Poor use of feet

### **3.3.2 Smoothness of Operation**

- The bus operator contestants' ability to deliver a smooth ride will be evaluated during the driving events.
- This event category is worth 25 points.
- Points will be deducted for:
  - Failure to make ADA announcements
  - Sudden stops
  - Sudden starts
  - Abrupt turns



### **3.3.3 Uniform Inspection** (*formerly Personal Appearance*)

- This category is worth 50 points. Contestants will be evaluated on their overall professional appearance, including uniform neatness, cleanliness, proper footwear, and adherence to their transit system's dress code. In addition to inspecting the operators current, valid driver's license/ID.
- Deductions may be applied for:
  - wrinkled, dirty, incomplete uniform
  - unpolished or dirty shoes; unapproved footwear such as heels that exceed 1½ inches will not be allowed to compete unless the shoes are changed before competing. Shoe heels built up for medical/corrective purposes will be allowed based on approval by the course judge (chair or vice-chair).

### **3.3.4 Total Course Time**

- Bus operator contestants are timed for each driving course event. Timing begins when the bus operator contestant begins the course and ends with the completion of the judgment stop.
- Time is stopped for mechanical trouble, any type of course blockage that would impede the bus operator contestant progress and where measurements are required for event scoring.
- 1 point is deducted for each second over the 7 minutes allotted to complete the course. The maximum deduction is 180 points.
- A maximum of 10 minutes will be allowed to complete the course. Bus operator contestants will be required to vacate the course after 10 minutes.

## **4. Bus Operator Contestant Scoring**

Bus Operator Contestant Score Sheets can be found in **Appendix 5**.

### **4.1 Driving Competition**

- There will be a first, second, and third place award.
- There are 650 maximum points for the driving portion of the competition.
- 50 points will be deducted for obstacles attempted in the wrong order.
- 10 points will be deducted for any course marker touched not associated with an event (obstacle).
- The full value of the event (obstacle) will be deducted for any event not attempted or completed as designed.
- 10 points will be deducted for failure to use your seat belt.
- In case of a tie, the tie breakers will be as follows:
  - Lowest time on the course
  - Closest measurement to the Judgement Stop Cone
- The judgment of events (obstacles) will be the responsibility of the Event Judges. All decisions made by Event Judges are final.
- Procedural questions must be directed to appropriate On-Course Roadeo Officials (Chairman or Vice Chairman).
- Bus Operator Contestants are only allowed on the course when competing.
- Bus Operator Contestants are not permitted to talk to Event Judges at any time during the competition.

- Rodeo Officials will enforce all Rodeo 'Rules and Regulations', supervise event judges, and provide on-the-spot procedural decisions. The Chair of the International Bus Rodeo Committee is the Chief Rodeo Official.

#### **4.2 Pre-Trip Inspection**

- There is a maximum of 50 points for the Pre-Trip Inspection.

**THE HIGHEST SCORE FOR THE PRE-TRIP INSPECTION WILL BE RECOGNIZED BY A SEPARATE AWARD. THE SPONSOR USSC WILL PROVIDE AN ADDITIONAL AWARD TO THE WINNER OF THIS EVENT. A TIE BREAKER WILL BE IDENTIFIED, IF NECESSARY.**

# MAINTENANCE TECHNICIAN ROADEO

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## 1. General Information

- Maintenance teams normally consist of 3 maintenance technicians. Maintenance teams with 2 members may compete but must compete without concessions.
- All members of the maintenance team may participate in all events.
- Contestant teams must arrive at the on-site check in 60 minutes prior to competition time and must arrive at the maintenance technician holding area at least 30 minutes prior to their scheduled competition time. Teams arriving late may be disqualified from the competition.
- Each team member will be supplied with a clipboard, paper, pencil, flashlight, necessary rags, and compartment door T-key. Each team will be supplied with team numbers and team stickers for each event.
- Each team member will be issued safety glasses when they report to on-site check in on competition day. Safety glasses must be worn when required by an event. Maintenance team members may bring their own safety glasses which will be subject to examination at on-site check-in to ensure they meet safety requirements.
- Hearing protection will be provided at both engine modules. Maintenance team members may bring their own hearing protection which will be subject to an examination at on-site check-in to ensure they meet safety requirements.
- Abbreviations used in the shop or industry are allowed as long as they are understandable to the judges.
- A general location must be given when identifying multiple equipment defects, i.e., window RR.
- Teams will incur penalties whenever they use tools/test equipment improperly and/or violate safety rules.
- When listing defects, write legibly.
- For events that only allow a limited number of defect listings, team members may cross out unwanted listings during the allotted time or they will be counted in the order they are listed.
- Any Maintenance team member seen at the Rodeo site on Saturday (practice day) may cause their team to be immediately disqualified.
- On competition day, contestants may not watch or be in any of the competition areas either before or after competing.
- Still photos are allowed during the competition. There will be absolutely no video cameras and/or videotaping in the maintenance technician competition area. Any violation of this rule will result in immediate disqualification.
- Maintenance teams must wear proper clothing including closed toe footwear and long pants (no shorts) for the competition.

## 2. Competition Events

Maintenance technicians are required to diagnose and repair complaints of low power, excessive smoke, harsh shifting, and/or other performance-related problems. Proper diagnostic and troubleshooting techniques then become essential in ensuring that buses meet the required levels of performance for daily revenue service. This, then, becomes another means of testing and measuring a team of maintenance technicians' knowledge, skills and abilities.

The Maintenance Technician Competition Events include the following:

- Written Test
- USSC Vehicle Inspection

- Allison Transmission/Cummins/EMP Powertrain Event
- Cummins/Voith/EMP Powertrain Event
- Custom Training Aid/Bendix Air Brake Board Event
- Thermo King HVAC IntelligAIRE Event
- MCI/New Flyer Multiplex Module
- Vapor Door Event

## **2.1 Written Test**

### **2.1.1 Description**

- Each maintenance team will jointly take a written test of 50 questions.
- The test will use the ASE format with questions split between general knowledge, engine, HVAC, brakes, electrical and transmission.

### **2.1.2 Time**

- Team members are allotted 30 minutes to answer all test questions.
- Time warnings will be given to the team at 2 minutes, 1 minute, and 30 second time marks.

### **2.1.3 Scoring**

- Each question is worth 2.5 points.
- There is a maximum of 125 points.

### **2.1.4 Tie Breakers**

- First tie breaker: least amount of time to complete the test.
- Second tie breaker: correct answers for 4 identified questions.

## **2.2 USSC Vehicle Inspection**

### **2.2.1 Defects**

- Fourteen 14 equipment-related defects are planted on or in a bus. These defects would make a bus operationally unready. Defects are of a type that a maintenance technician should find during a minor mechanical inspection.
- Each team member may list unlimited defects.
- Identification of defects does not require starting the bus or crawling under the bus.
- Teams will not be allowed to have a checklist of defects to refer to during the competition.
- Eligible defects might include broken, loose, bad, missing, or incorrect:
  - Seats
  - All types of lights
  - Windows
  - Stanchions
  - Flooring
  - Fire extinguisher
  - Door engines
  - Wipers
  - Windshield
  - Number
  - Mirrors
  - License plate
  - Doors
  - Dipsticks

- Bell cord
  - A security hazard
- Ineligible defects include:
  - Defects under the bus
  - Exterior body damage
  - Paint problems
  - Wheelchair operations
  - Kneeling functions
  - Radios
  - Fareboxes
  - Destination signs
  - Battery compartment
- Equipment where multiple defects are possible will be counted only once, i.e., seats, windows, lights.
- Front and rear windows, headlights, taillights, brake lights, mirrors, and turn signals will each count as separate defects.

### **2.2.2 Time**

- All members of a team are allotted 7 minutes to inspect, locate, identify, and legibly record any defects found.
- Time warnings will be given to the team at the 2-minute, 1-minute, and 30-second time marks.
- Recording defects and securing doors will not be allowed after time has elapsed.

### **2.2.3 Scoring**

- 25 points are awarded for each planted defect found, with a maximum of 350 points.
- Points will be awarded only for those recorded defects that were planted by the judges. No points will be awarded for the identification of defects which were not planted.
- The team will notify the judges when they are finished. Once notice is given, the team may not list additional defects.
- The judges will review the list of defects with each team for clarification.
- A penalty of 10 points will be assessed for each instance where the bus is not returned to its original condition; for example, 10 points assessed for each compartment door not secured including the entrance door, lights left on, wipers left running, master switch on, windows open, and escape hatches open, etc.
- A penalty of 10 points will be assessed for each incident of unsafe practice during the vehicle inspection.
- Starting the bus constitutes a safety violation and will result in the team being disqualified from this event. The inspection bus will be supplied with necessary electrical power and air pressure.

## 2.3 Allison Transmission / Cummins / EMP Powertrain Event

### 2.3.1 Description

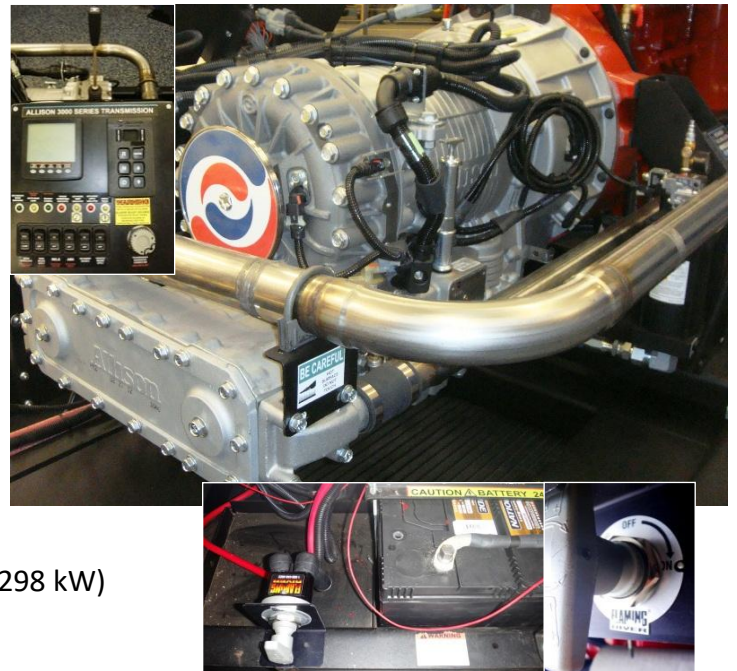
The Allison Transmission / Cummins / EMP Powertrain Module is composed of a Cummins EPA 2010 ISL9 engine combined with an Allison B400R transmission and EMP's Mini-Hybrid® system mounted on a portable frame. Laptops will be supplied to interface with the Allison DOC® for PC, Cummins INSITE™ and EMPower Connect™ diagnostic software programs. The Powertrain Modules feature simulations of typical transit bus vehicle interfaces.

#### Cummins engine specifications are:

- Cummins EPA 2010 ISL9
  - 540 cubic inch displacement
  - 280 hp (209 kW)
  - 900 lb-ft (1220 N-m) @ 1300 RPM
  - 2200 RPM governed speed
- Cummins XPI Fuel System
  - CM2250 control module
  - J1939 CAN interface
  - High pressure common rail system
- VGT™ Turbocharger
  - HE431VE variable geometry Turbocharger
- Fuel Pro Fuel Filter
  - Primary & secondary assembly
  - Integrated water separator
- EcoFit™ Ultra-Low Emission System
  - SCR technology & DEF injection

#### Allison transmission specifications are:

- Allison B400R Bus Series
- 300 hp (224 kW) 925 lb-ft (1254 N-m) Rating
  - TC418 Torque converter (1.98 stall torque ratio)
  - Integral output retarder
    - Low setting
    - 1100 lb-ft (1490 N-m) 400 hp (298 kW)
  - Air-actuated retarder accumulator
  - Integral sump cooling
  - Allison TransSynd TES295™ synthetic oil
- Allison Optimized Smart Controls
  - Allison 5th Generation controls
  - Load-Based Shift Scheduling (LBSS)



- Allison Prognostics
- Reduced Engine Load at Stop (RELS)
- Vehicle Acceleration Control (VAC)
- Increased lockup availability
- Retarder enable
- Multi-level retarder apply system
- Secondary shift schedule
- Auxiliary function range inhibit

#### **EMP cooling & charging system specifications are:**

- EMP Mini-Hybrid®
- Radiator and Charge Air Cooler
  - Brazed aluminum bar/plate construction
- Diagnostic capability
- 4 EMP FIL-15 24 VDC Pusher fans
- Integrated fan controllers + system controller
- J1939 CAN Interface for system to vehicle
- Fan reversal & diagnostic LED panel
- Amperage – 55-amp max @ 24 VDC each fan
- Power 450 brushless alternator
  - 450 Amp 28 VDC
  - Air cooled
  - Turn-on speed – 1250 RPM
  - Maximum speed – 6500 RPM
  - Maximum ripple voltage – 300 mV
  - Weight – 100 lbs. (45.4 kg)



#### **2.3.2 Defects**

- 7 defects or issues related to transmission, engine, and cooling system malfunctions are planted. 1 defect will render the engine inoperable. For purposes of the Roadeo, inoperable means that the engine will not start or when started will not maintain an idle RPM that meets engine manufacturer's specification. This is the only defect/issue that must be repaired.
- A battery disconnect switch is located next to the batteries. It is to be returned to the OFF position at the end of the event.
- A team may attempt to start the engine at any time to check for defects.
- Defects do NOT include fluid leaks such as oil, water, fuel, etc.
- The judges will review the list of defects with each team upon completion of time to clarify their list of defects. The team does not have to replant the 1 repaired defect.



- Defect determination which normally would require a running engine will not be scored if the engine is not started.
- Types of defects could include:
  - Improper activation of components
  - Malfunctioning fuel system
  - Obstruction with the flow of air, water, exhaust, fuel or oil
  - Improper fluid levels
  - Defective sensors, wires and/or connectors
  - Missing assemblies or parts thereof
  - Loose or missing caps or covers

### **2.3.3 Time**

- Team members will be allotted 10 minutes to inspect, trouble shoot, diagnose, correct, and legibly record the planted defects.
- The team is only required to correct that defect which prevents the powertrain from starting and/or maintaining an idle RPM that meets engine manufacturer's specification.
- Time warnings will be given to the team at the 2-minute, 1-minute, and 30-second time marks.

### **2.3.4 Safety**

- Wear PPE always
  - Safety Glasses
  - Hearing Protection
- Stay Clear of rotating components
  - Belts
  - Output Shaft
- Do not touch hot components
- Confirm "ALL CLEAR" before starting engine

### **2.3.5 Scoring**

- 50 points are awarded for each planted defect found, with a maximum of 350 points.
- Points will be awarded for each defect correctly identified, recorded, and, in the case of that defect which renders the powertrain inoperable, corrected. Only those defects planted by the judges will be considered for scoring purposes.
- Only 7 defects are to be listed. If more than 7 are listed, only the first 7 listed will count for scoring purposes. If more than 7 were initially listed, unwanted listings may be crossed out to leave the top choices but must be completed prior to time expiration.
- The team will notify the judges when they are finished. Once notice is given, the team may not list additional defects.
- The judges will review the list of defects with each team for clarification.

- A team will be penalized 50 points for not having the powertrain in operational condition before an engine start is attempted, i.e., air cleaner removed, fuel lines disconnected etc.
- The team will be penalized 10 points for misuse of any diagnostic/test equipment.
- The team will be penalized 10 points for each safety violation incident.
- In the event of a tie, the fastest time to correct the defect and start the engine which renders the engine inoperable will determine the winner.

## 2.4 Cummins/Voith/EMP Powertrain Event



### 2.4.1 Description

The Cummins / Voith engine transmission module is composed of a Cummins ISL 280 engine combined with a Voith 864.5 transmission and EMP's Mini-Hybrid® system mounted on a movable frame. The engine, transmission, and Mini-Hybrid® utilize the latest diagnostic software, ALADIN for Voith, INSITE™ for Cummins and EMPower Connect™ for EMP. The engine is outfitted with a non-functional air compressor.

#### The Cummins engine specifications are:

- The engine is a 2010 EPA Certified Cummins ISL 280 engine, 6 cylinders displacing 540 cubic inches. The engine is governed to 2200 rpm and produces 900 ft-lb of torque at 1300 RPM.
- It incorporates a CM 2250 Cummins ECM engine control using a J1939 signal for communication to the transmission.
- The fuel injection system is the XPI high pressure common rail system incorporated with a primary and secondary fuel filter assembly with an integrated water separator.
- The engine also utilizes a Variable Geometry HE431VE turbocharger which feeds into the Cummins After treatment System that utilizes the latest SCR technology and DEF injection.

**The Voith transmission specifications are:**

- The transmission is an 864.5

There is a 6-button pushbutton selector and switches to simulate brake stage 1, 2, and 3 to activate the retarder.

- Transmission shifting functions are controlled by the latest version of the E300 controller which has had the latest version of Voith's performance and fuel savings software (SensoTop) installed.
- There are 2 gauges mounted on a panel which show main operating pressure and converter pressure.
- The retarder is internal to the transmission and uses Voith technology to accelerate and decelerate the unit.
- The transmission design features an integrated heat exchanger which eliminates lines to the cooler for easier installation.
- The transmission is filled with the highest quality ATF and meets the specifications listed in our most recent Service Bulletin SB118.

**The EMP Mini-Hybrid® cooling system specifications are:**

- There are 4 EMP FIL-15 24VDC pusher fans with integrated controllers which are commanded by the TMC system controller via EMP-link and are reversible.
- The cooling is achieved through the use of a brazed aluminum bar/plate radiator and charge air cooler.
- Cooling system diagnostics utilize the J1939 CAN interface for system to vehicle diagnostics. Diagnostic capabilities are available either through the service tool, EMPower Connect™, or the LED lamp located near the system itself.

**The EMP alternator specifications are:**

- A P450 is an air-cooled brushless alternator providing up to 450 amps at 28VDC.
- It has a turn-on RPM of 1250 RPM with a Maximum speed of 6500 RPM.
- Alternator and fans are fully guarded to prevent injury.

**2.4.2 Defects**

- 7 defects or issues related to engine and transmission malfunctions are planted. 1 defect will render the engine inoperable. For purposes of the Roadeo, inoperable means that the engine will not start or when started will not maintain an idle of 700 rpm.
- A team may attempt to start the engine at any time to check for defects.
- Types of defects could include:
  - Improper activation of components
  - Malfunctioning fuel injector
  - Obstruction with the flow of air, water, exhaust, fuel, or oil
  - Improper fluid levels
  - Defective sensors, wires, and/or connectors
  - Missing assemblies or parts thereof

- Defects do NOT include fluid leaks such as oil, water, fuel, etc.
- The judges will review the list of defects with each team upon completion of time to clarify their list of defects. The team does not have to replant the 1 repaired defect.
- Defect determination which normally would require a running engine will not be scored if the engine is not started.

### **2.4.3 Time**

- Team members will be allotted 10 minutes to inspect, trouble shoot, diagnose, correct, and legibly record the planted defects.
- The team is only required to correct that defect which prevents the powertrain from starting and/or maintaining an idle speed of 700 rpm.
- Time warnings will be given to the team at the 2 minutes, 1 minute, and 30 seconds time marks.

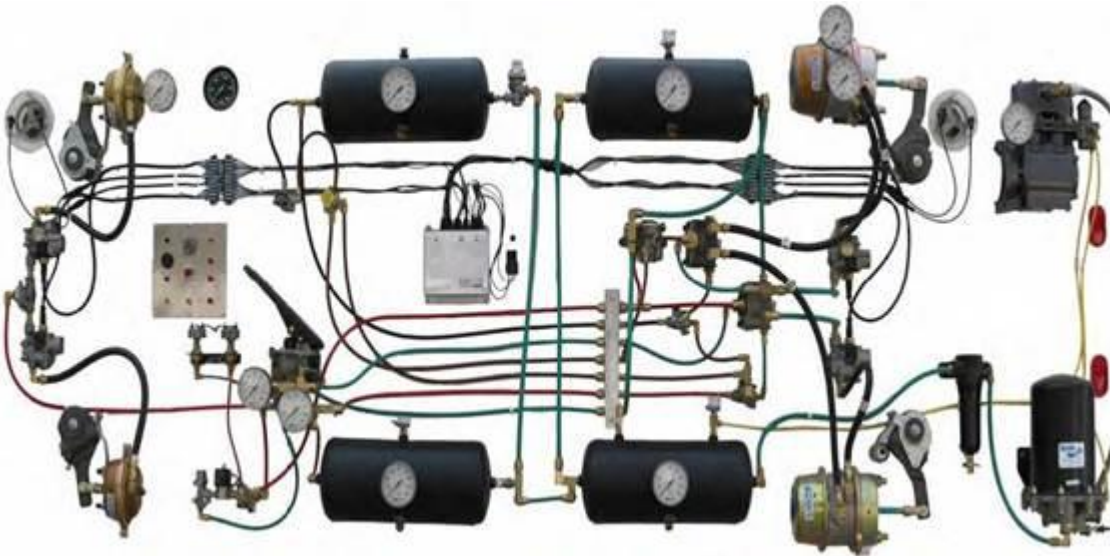
### **2.4.4 Safety**

- Wear PPE always
  - Safety glasses
  - Hearing protection
- Stay clear of rotating components
  - Belts
  - Output shaft
- Do not touch hot components
- Confirm “ALL CLEAR” before starting engine

### **2.4.5 Scoring**

- 50 points are awarded for each planted defect found, with a maximum of 350 points.
- Points will be awarded for each defect correctly identified, recorded, and, in the case of that defect which renders the powertrain inoperable, corrected. Only those defects planted by the judges will be considered for scoring purposes.
- Only 7 defects are to be listed. If more than 7 are listed, only the first 7 listed will count for scoring purposes. If more than 7 were initially listed, unwanted listings may be crossed out to leave the top choices but must be completed prior to time expiration.
- The team will notify the judges when they are finished. Once notice is given, the team may not list additional defects.
- The judges will review the list of defects with each team for clarification.
- A team will be penalized 50 points for not having the powertrain in operational condition before an engine start is attempted, i.e., air cleaner removed, fuel lines disconnected etc.
- The team will be penalized 10 points for misuse of any diagnostic/test equipment.
- The team will be penalized 10 points for each safety violation incident.
- In the event of a tie, the fastest time to correct the defect and start the engine which renders the engine inoperable will determine the winner.

## 2.5 Custom Training Aids/Bendix Air Brake System (ABS) Event



The competition will be conducted using a fully functional air brake system with Antilock Brake System (ABS) components. The components of the system will be functional with the exception of the air compressor.

### 2.5.1 Description

**NOTE:** The description, drawing, and component list contain the most current information and is subject to change.

The air brake demonstration board represents a current model year 40'-2 axle transit bus equipped with an antilock brake system. The board is manufactured to meet current Federal Motor Vehicle Safety Standard 121. Air reservoirs and brake chambers are reduced in size to limit air consumption while maintaining precise control and operation of system components. The foundation brake system represents an 'S' Cam spring braked vehicle. Anti-lock brake system is a Wabco 'D' version 4S/4M 12 volt system controlled by a cab mounted electronic control module with transmission retarder control relay. Brake valves are manufactured by Bendix and are common to most current transit buses meeting FMVSS 121. All air system components are fully functional with the exception of the air compressor. The air compressor is a cut-away demonstration unit with fully functional unloader valves.

### 2.5.2 System Components

- Tu-Flo 700 Air compressor
- D-2 Air Governor, cutout set to 120 PSI
- AD-9 Air Dryer with 175 psi ST-3 safety valve
- Puraguard oil separator mounted after the air dryer
- E-6 Brake application valve

- R-12DC Service brake relay valve with a crack pressure of 5.5 PSI
- R-14 Spring brake relay valve with a crack pressure of 4.0 PSI
- QR-1 Front service brake valve with a crack pressure of 0 PSI
- SR-1 Spring brake modulation valve
- SL-5 Stop light switches which light the 2 LED stop lights at 5 PSI
- LP-3 Low-pressure switches rated at 70 PSI
- RV-1 Interlock pressure regulator adjusted to 45 PSI
- PR-3 Pressure protection valve mounted on accessory reservoir opens at 92-98 PSI
- PP-1 Control valve with an application pressure of 40 PSI
- RD-3 Spring brake emergency release valve
- Duplex instrument panel air pressure gauge with green and red needles representing Primary and Secondary air brake systems
- RD-3 Spring brake
- Duplex instrument
- ST-3 Safety valve, 150 PSI
- SC-3 single check valves
- DC-4 double check valves
- Wabco open style modulator valves
- SAB automatic slack adjusters
- Type-20 front service brake chambers
- Type-24 Service/Spring brake chambers

**Air Lines are color coded to represent:**

- Supply air system: Black
- Primary brake system: Green
- Secondary brake system: Red
- Emergency system: Brown
- Governor control: Yellow

### **2.5.3 Defects**

#### **Part I – Air Brake System Electrical/Pneumatics Diagnostics**

- The team will be required to use a Digital Multimeter (DMM) to diagnose an electrical component. The electrical component may include, but is not limited to: electric relays, sensors, wiring harness, etc.
- Part I will be timed and will be used as a tie breaker for the event.

#### **Part II – Air Brake System Trouble Shooting**

- The team will be required to inspect, locate, identify, and legibly record, including location, the 6 planted defects.



- Defects will be mechanical in nature but will not be air line or connection leaks.
- Identification of defects will not require the system to be repaired, taken apart, or disconnected.

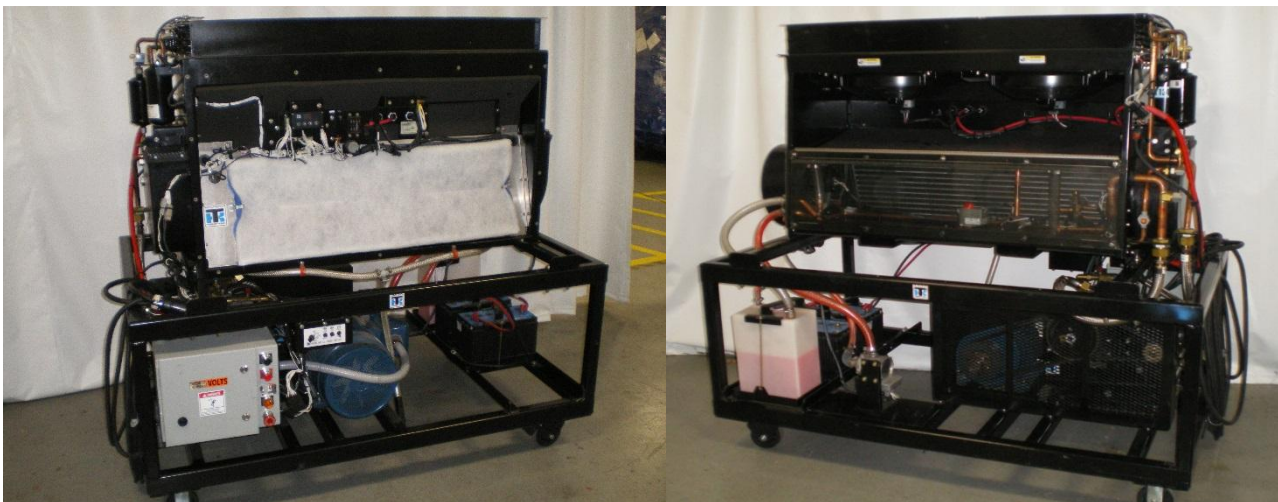
#### 2.5.4 Time

- 7 minutes will be allotted for this event.
- Time warnings will be given to the team at the remaining time of 2 minutes, 1 minute, and 30 seconds.

#### 2.5.5 Scoring

- Total Possible Points for this event is 350.
- 50 points will be awarded for the successful diagnosis of Part I, Air Brake System Electrical/Pneumatics Diagnostics.
- Part II, Air Brake System Trouble Shooting, will be worth 300 points. 50 points will be awarded for each of the 6 planted defects found in the Air Brake System.
- Points will be given only for those recorded defects that were planted by the judges. No consideration will be given for listed defects not planted.
- Only 6 defects are to be listed. If more than 6 are listed, only the first 6 listed will count for scoring purposes. If more than 6 were initially listed, unwanted listings may be crossed out to leave the top choices but must be done prior to time expiration.
- The team will be penalized 10 points for misuse of any diagnostic/test equipment.
- The team will be penalized 10 points for safety violation incident.
- The team will be penalized 10 points if the ABS board is not returned to its original status, i.e. Air: on/off, Power: on/off and tools not returned to their original location.
- The team will notify the judges when they are finished. Once notice is given, the team may not list additional defects.
- The judges will review the list of defects with each team for clarification.
- In the event of a tie, the fastest time to correctly diagnose and record the defects in Part I Air Brake System Electrical/Pneumatics Diagnostics will determine the winner.

### 2.6 Thermo King HVAC IntelligAIRE Event







### **2.6.1 Description**

The competition will be conducted on a fully operational bus air conditioning Maintenance Technician training simulator.

### **2.6.2 Components**

- Thermo King Model T Series rear mount bus air conditioning unit
- IntelligAIRE III controls
- Thermo King brushless motors
- QS391 compressor and clutch assembly
- Belt driven 150 amp, 27 VDC Battery-less alternator
- 469VAC/3 phase, 20 horsepower electric motor and batteries

### **2.6.3 Equipment**

- The following equipment will be provided for this event:
  - Laptop computer with interface cable
  - Thermo King IntelligAIRE III CANDiag software to provide diagnostic capabilities
  - Digital Multi-meter with test leads
  - No other hand tools will be needed for the competition

### **2.6.4 Defects**

- 1 defect will render the air conditioning system inoperable. For purposes of the Rodeo, inoperable will mean that the 20-horsepower electric motor, which is belt driving the compressor/alternator, is running; however, the air conditioning unit does not operate.
- The team will only have to correct the defect that prevents the air conditioning unit from starting.
- Defects will be mechanical or electrical in nature, but leakage of refrigerant or oil will not be considered a defect.
- Defects will be such that they do not require the A/C system to be repaired or taken apart.

### **2.6.5 Time**

- The team will be allotted 10 minutes to inspect, troubleshoot, diagnose, and legibly record the planted defects.
- Time warnings will be given to the team at the 2 minutes, 1 minute and 30 second time marks.

### **2.6.6 Scoring**

- Points for this event total 350.
- 50 points are awarded for each of 6 planted defects found and recorded including 1 defect that must be recorded and corrected to enable the air conditioning unit to function.
- 50 points will be awarded for recording all active logged codes.
- Points will be given only for those 6 defects and 1 logged code that are planted by the judges. No consideration will be given for listed defects or codes not planted.
- Only 6 defects are to be listed. If more than 6 are listed, only the first 6 listed will count for scoring purposes. If more than 6 were initially listed, unwanted listings may be crossed out to leave the top choices but must be completed during the competition's allowed time.
- When finished, all team members are to return behind the start/finish line and notify judges. The clock will then be stopped.
- Once notice is given, the team may not list additional defects or make additional corrections to the air-conditioning system.
- The team will be penalized 10 points for not returning the A/C unit simulator to original status when they are finished.
- The team will be penalized 10 points for misuse of any diagnostic/test equipment or tools.
- The team will be penalized 10 points for each safety violation incident.
- In the event of a tie, the fastest time to get the compressor running will determine the winner.

## 2.7 MCI/New Flyer Multiplex Event



### 2.7.1 Description

The competition will be conducted on an operational board using the Dinex I/O T2 Control electrical system. The board will have multiple electrically related defects.

### 2.7.2 Components

- 2 Motor Coach Industries I/O boards similarly equipped with I/O T2 Controls Multiplex Electrical System will be used for this competition.

### 2.7.3 Equipment

The following equipment will be provided for this event:

- Digital Multi-meter with test leads
- I/O Control ladder logic
- Hand tools as required

### 2.7.4 Defects

- Defects will be electrical in nature.
- A total of 7 defects will be inserted into the I/O electrical board.

### 2.7.5 Time

- The team will be allotted 7 minutes to inspect, troubleshoot, diagnose, and legibly record the planted defects.
- Time warnings will be given to the team at the 2-minute, 1-minute and 30-second time marks.

### **2.7.6 Safety**

- Teams will be expected to work in a safe manner during competition.
- Teams may choose to wear PPE at their own decision.

### **2.7.7 Scoring**

- Possible points for this event total 350.
- 50 points are awarded for each of the 7 planted defects found including recording and defining the cause and symptom of the defect.
- Points will be given only for those 7 defects that were planted by the judges. No consideration will be given for listed defects not planted.
- Only 7 defects are to be listed. If more than 7 are listed, only the first 7 listed will count for scoring purposes. If more than 7 are initially listed, unwanted listings may be crossed out, but must be completed prior to time expiration.
- Points will be awarded for each defect correctly identified and recorded.
- The team will notify the judges when they are finished. Once notice is given, the team may not list additional defects.
- The team will be penalized 10 points for misuse of any diagnostic/test equipment or tools.
- The team will be penalized 10 points for each safety violation incident.
- In the event of a tie, the fastest time to complete the event will determine the winner.

## 2.8 Vapor Door Event



FRONT



REAR

### 2.8.1 Description

The competition will be conducted on a fully operational, half-height bus door system mockup.

### 2.8.2 Components

Vapor rear-door, slide-glide door system. Electric actuator baseplate assembly includes a Vapor Electric Transit Operator (ETO), v300 ETO door controller, connecting rods, door shaft levers, Contact-Less Acoustic Sensing System (CLASS), pressure wave switches, wiring and air hoses. Also included: 2, halfheight Vapor Ameriview® door panels equipped with CLASS panel sensors and sensitive leading edges, roller brackets, brushes and door seals; vertical shafts and arms; emergency release mechanism; and a driver's door controller handle. An air compressor will provide 90-120psi air supply to the door system.

### 2.8.3 Equipment

All necessary tools and equipment required to compete in this event will be provided.

#### **2.8.4 Time**

- The team will be allotted 7 minutes to inspect, locate, identify, and legibly record the planted defects.
- Time warnings will be given to the team at the remaining time of 2 minutes, 1 minute, and 30 seconds.

#### **2.8.5 Defects**

- The competition will consist of 7 planted defects.
- The defects will be mechanical or electrical in nature. The team will not be required to repair the defect. Leakage of air will not be considered a defect.
- The team may attempt to open and close the doors to check for defects.

#### **2.8.6 Safety**

- Each team will designate a team member as the “Door Opener”.
- Door Opener to yell “CLEAR” prior to moving the door control handle. Must hear verbal acknowledgement “CLEAR” from each of the other team members before moving the door control handle.
- A 10-point Safety Violation will be given for each instance this procedure is not followed.
- A team member is allowed to stand on the inboard side (inside) of the mockup.

#### **2.8.7 Scoring**

- 50 points are awarded for each planted defect found, with a maximum of 350 points.
- Only those defects planted by the judges will be considered for scoring purposes. No consideration will be given for listed defects not planted.
- Only 7 defects are to be listed. If more than 7 are listed, only the first 7 will count for scoring purposes. If more than 7 were initially listed, unwanted listings may be crossed out to leave the top choices but must be completed prior to the time expiration.
- The team will notify the judges when they are finished. Once notice is given, the team may not delete or add additional defects.
- The judges will review the list of defects with each team for clarification.
- The team will be penalized 10 points for each safety violation incident.
- In the event of a tie, the fastest time to identify and record the most planted defects will determine the winner.

### **3. Maintenance Technician Scoring**

Maintenance Technician Score Sheets can be found in **Appendix 6**.

#### **Overall Maintenance Technician Awards**

- There will be a first, second, and third place award for the overall Maintenance Technician competition. The awards will be determined by highest point values.
- In case of a tie for any place, the tie will be settled in the order as follows:
  - The highest combined score from the Cummins / Allison and Cummins / Voith Powertrain Event Problems
  - The highest vehicle inspection score
  - The lowest combined time required on the Cummins / Allison and Cummins / Voith Powertrain Event Problems
- All decisions of the event judges are final.

#### **Individual Maintenance Technician Events:**

- The highest scores in each of the Maintenance Technician events will be recognized by a separate award.
- Sponsors of the Maintenance Technician events also provide prizes.



## 2025 APTA INTERNATIONAL BUS ROADEO COMPETITION BUS

### OPERATORS DRIVING COMPETITION BUS



40' New Flyer	
ENGINE TYPE	Electric – Siemens ELFA3
ENGINE SERIAL NUMBER	TBD
TRANSMISSION TYPE	N/A
BRAKE TYPE	Fr & Rr Disc
TIRE SIZE	305/70R22.9
VEHICLE MAKE	NEW FLYER
VEHICLE MODEL	Xcelsior (XE40)
YEAR MANUFACTURED	2024
VEHICLE CLASS	40-FT
VEHICLE FUEL CAPACITY	660 kwh
VEHICLE FUEL TYPE	ELECTRIC
VEHICLE LENGTH	41' 0"
VEHICLE HEIGHT	133"
VEHICLE WIDTH	8' 6"
VEHICLE WHEELBASE	23' 7.75"
TURNING RADIUS TIRE	43'
DIFFERENTIAL RATIO	5.67:1
GAWR REAR	28,600 lbs
GAWR FRONT	15,783 lbs
MAXIMUM GVWR	44,533 lbs
MIRRORS	Four ext., 1 int.



# PRE-TRIP & INSPECTION BUS

## OPERATOR COURSE PRE-TRIP & MAINTENANCE INSPECTION



40' GILLIG	
ENGINE TYPE	Cummins, ISL9
ENGINE SERIAL NUMBER	TBD
TRANSMISSION TYPE	Automatic, Voith, D864.6
BRAKE TYPE	Disc, Meritor, Front and Rear
TIRE SIZE	225/70R19.5 J
VEHICLE MAKE	GILLIG
VEHICLE MODEL	Low Floor, G27D102N4
YEAR MANUFACTURED	2020
VEHICLE CLASS	40-FT Bus
VEHICLE FUEL CAPACITY	120 Gallons
VEHICLE FUEL TYPE	DIESEL
VEHICLE LENGTH	502 inches
VEHICLE HEIGHT	125.32 inches
VEHICLE WIDTH	102 inches
VEHICLE WHEELBASE	279 inches
TURNING RADIUS TIRE	39'-9" Outside tire
DIFFERENTIAL RATIO	5.38
GAWR REAR	27,000 lbs.
GAWR FRONT	14,600 lbs.
MAXIMUM GVWR	41,600 lbs.
MIRRORS	Safe Fleet, High Mount, 9"x13" 2-Piece Flat Faced & Convex, remote

# ROADEO SITE

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Toney Burger Center, 4709 S. Lamar Sunset Valley, TX 78745



# **APPENDICES**

## **APPENDIX 1: SWAP MEET AND RECEPTION**

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All Rodeo participants, managers, supervisors, vendors, family, and friends with a ticket are welcome to attend the APTA Bus Rodeo Swap Meet and Reception. The Swap Meet is a place where Rodeo memorabilia, transit related pins, hats, shirts, patches, and other items are traded, exchanged, or distributed.

Participating agencies are encouraged to bring items for exchange and join the group for a memorable, social networking evening. However, trading or exchanging memorabilia and other items is not a requirement to attend this event.

Mailing instructions for swap meet materials will be posted on the APTA International Bus Rodeo webpage and emailed to the registration contact. The Swap Meet and Reception will be held on Sunday night after the Rodeo. See the Rodeo Schedule for more information.

### **Notes:**

- Participants are responsible for any fees/charges from the hotel to receive/store boxes shipped for the swap meet.
- The selling of Rodeo material or swap items is prohibited.
- Early access to the ballroom is allowed for each agency to set up one (1) 6-foot table (see online schedule for set-up time)

## APPENDIX 2: FREQUENTLY ASKED QUESTIONS AND ANSWERS

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*NOTE: Questions and answers are provided to assist Roadeo contestants with familiarization of the Roadeo competition. On-course officials are responsible for interpretations and decisions during competition.*

### **GENERAL QUESTIONS:**

**Q: Where is registration and its hours?**

A: Registration will be at the Austin Marriott Downtown. Registration hours can be found on the [Roadeo Schedule](#) at [www.apta.com/mobility](http://www.apta.com/mobility).

**Q: Can I attend Mobility Conference sessions?**

A: Yes, all registered Roadeo attendees will have access to the Mobility Conference sessions.

**Q: Can I register for the Roadeo competition onsite?**

A: No. Teams, including all participants, must be registered by Monday, March 10, 2025.

**Q: Can I buy tickets for guests to attend the International Bus Roadeo Grand Awards Celebration once onsite?**

A: Yes, you can buy tickets for the awards celebration onsite. Awards Celebration tickets are included for participants and with the purchase of a personal guest registration, but additional tickets can be purchased in advance during the online registration process and on-site for \$150.

**Q: Will I be able to pick up a hard copy of the handbook on site?**

A: No. The handbook is only available as a pdf online. You are encouraged to print a copy in advance of attending the Roadeo.

**Q: Where do I ship my items for the swap meet?**

A: Ship your items to the following address. **Please note** that you are responsible for any package handling and storage fees that may apply. To avoid additional storage fees, schedule your shipment(s) to arrive 4 days or less prior to your check-in date. Please schedule your shipments accordingly. Access detailed shipping instructions [here](#).

(Add Guest's Name) (Guest Cell Number)  
c/o FedEx Office at Austin Marriott Downtown  
304 E Cesar Chavez  
Austin, TX 78701  
APTA Int'l Bus Roadeo - Swap Meet  
Box \_\_\_\_ of \_\_\_\_

**Q: Are the Roadeo events and mobility conference in the same hotel?**

A: No. The Roadeo hotel is the Austin Marriott Downtown and the Mobility Conference hotel is the JW Marriott Austin.

**Q: What is included with a paid guest ticket?**

A: A guest ticket provides access to all Roadeo events, swap meet and reception, awards afterparty, ticketed meal functions such as the showcase and bus display lunches.

**Q: When should I arrive in town for the Roadeo?**

A: We suggest all participants arrive by 2pm on the day of orientation (Friday, April 4).

**Q: When is the setup time for the swap meet?**

A: You will set up immediately after the Roadeo and before the swap meet opens to the public. Set-up hours can be found on the Roadeo [Schedule](#).

**Q: How many items can we bring for the swap meet?**

A: APTA will provide one (1) six-foot table for each agency. You will need to be able to fit your items on this table.

**Q: What happens with items I'm not able to give away at the swap meet?**

A: You will need to dispose of the leftover items or take them back with you. APTA has no place to store leftover items.

**Q: Are non-paid guests allowed to attend the bus display and showcase?**

A: Yes, your guest may attend but they will need to obtain a complimentary entrance badge from registration to gain access and they **will not** have access to the lunch provided at the bus display and showcase.

**Q: When are scores shared for the Roadeo competition?**

A: All scores will be shared immediately following the awards ceremony.

**BUS OPERATOR QUESTIONS:**

**Q: Can I register more than one operator for the competition?**

A: Yes, you can register another operator as a backup in case something happens to your main operator. However, they both cannot compete. Only one of them may compete. As the second registered operator, they can attend all Roadeo events. But they will not be able to compete unless the other operator backs out.

**Q: Can I ride with another contestant?**

A: No. Each contestant is only allowed to ride/drive the course once.

**Q: Can someone ride with me?**

A: On course orientation / practice day, yes as long as they are not disruptive. On competition day, no.

**Q: Are you going to guide me through the course?**

A: No. You will be provided with a diagram of the course, and it is your responsibility to negotiate the obstacles in proper order.

**Q: Do I have to use the horn and turn signals?**

A: Yes. If you fail to use your horn and/or signals as in live service, you will lose points from the on-board safety judge.

**Q: Am I allowed to go outside the line of perimeter cones?**

A: No. You must stay within the course lines. Each course marker or perimeter cone touched will count as a penalty. All cones count during the Roadeo Course – 10 points deduction for marker and most cones, except the pivot cones are 25 points.

**Q: May I take off my jacket when I compete?**

A: Yes.

**Q: Can I use the mirrors that I am used to?**

A: No. You must use the mirrors provided on the host property buses.

**Q: Will I be driving the same type of bus that I drive in my system?**

A: You will be driving the vehicle provided by the host property; a 2024 40' New Flyer electric bus. See page 39 for more details.

**Q: On practice day do I have to wear my uniform?**

A: No, but proper footwear is required.

**Q: Can I go through the course more than once on practice day?**

A: No. Time permits only 1 trip on practice day (10-minute max. time limit)

**Q: Do I have to be on time for practice and competition?**

A: Yes. Everyone is scheduled for a certain time and the schedule must be maintained. You must report to on-site registration at least 45 minutes before competition time and to the starter no later than 30 minutes before the competition time listed in the official schedule.

**Q: Will there be transportation from the hotel to the Roadeo site?**

A: Yes. Refer to the Roadeo Schedule, or APTA website for the shuttle schedule.

**Q: Do I have to take a safety quiz?**

A: No.

**Q: Do I go through the defect bus?**

A: Yes. The Bus Operator competition includes a scored pre-trip inspection. The Pre-Trip Inspection takes place on Saturday.

**Q: Will I have a personal appearance inspection?**

A: Yes, there will be a uniform inspection (*formerly personal appearance*) worth 50 points during check-in at the Rodeo site on Sunday.

**Q: May I adjust my mirrors?**

A: Yes. You are responsible for adjusting your mirrors.

**Q: Do I lose points if I back up?**

A: Yes. In all course events, except for the first backup in the left and right reverses, you will lose points each time you reverse.

**Q: If I hit the same cone twice, do I lose double points?**

A: No. Once you are charged with hitting a cone you are not charged for it the second time.

**Q: If a cone becomes lodged under the bus will my time stop to remove it?**

A: No. It will become a part of the bus, and you must continue. If the lodged cone knocks down other cones before removal, points will be deducted for the other cones knocked down.

**Q: If I touch the base of a cone, does it count against me?**

A: Yes. Hitting or even touching any portion of the cone counts as a hit.

**Q: Is my manager allowed to walk behind my bus when I am competing?**

A: No. Only Rodeo Officials and judges are allowed on the course while competition (or practice) is in progress. Spectators may watch from the spectator areas.

**Q: Will I be allowed to walk through the course?**

A: No. Familiarize yourself with the course through the materials provided and your practice trip. You may observe the course from the perimeter on practice day.

**Q: Does time on the course count?**

A: Yes. The course time limit is before points are deducted is 7 minutes. Points will be deducted for every second over 7 minutes, and you will be stopped and removed from the course at the 10 minute mark.

**Q: Does smoothness of operation count?**

A: Yes. You will be observed by the On-Board Judge.



**Q: Does speed count?**

A: Your speed within the diminishing clearance obstacle must be at least 20 mph (32 kph).

**Q: Do you award dual prizes for a tie score?**

A: No. The contestant with the lowest time through the course wins.

**Q: How many prizes are awarded?**

A: We have various award categories and types of prizes given to the top combined teams, and the top bus operators and maintenance technicians.

**Q: Do I have to wear my badge or nameplate?**

A: Only if it's part of your uniform.

**Q: Can I wear sneakers?**

A: Wear the same kind of shoes you wear when you are operating in passenger service at your transit system.

**Q: Will there be refreshments?**

A: Refreshments will be available on competition day.

**Q: Can I bring my family to the Rodeo?**

A: Yes, they can come and enjoy the festivities and competition. Spectator areas are available for the Bus Operator course.

**Q: Do I have to come to orientation?**

A: No, but it is strongly encouraged.

**Q: Do I have to use a seat belt?**

A: Yes. 10 points will be deducted for failure to use your seat belt.

**Q: Is the course set up as shown in the APTA handbook?**

A: Obstacle configurations are the same, but dimensions and sequence may be different. The course will be set up on practice day in competition sequence.

**Q: Is the rear cone in the backups fixed or does it vary?**

A: The rear cone is fixed.

**Q: Will there be a bus available for familiarization purposes?**

A: Yes. After the orientation on Friday and on practice day a bus will be available.

**Q: Do I only have to call ADA announcements at the passenger stops?**

A: Yes. You must call the stop before you start forward movement out of the bus stop.

**Q: Can I get out of the bus during practice?**

A: No.

**Q: Do I need to use the P.A. (Public Announcement) System to announce ADA Stops?**

A: No.

**Q: On the Right and Left reverses do I start at a 45-degree angle?**

A: You can start at whatever angle you prefer.

**Q: Do the buses have bike racks?**

A: If provided by the host property, the bike racks will remain on the buses.

**Q: Can I palm the steering wheels on Turns?**

A: No.

**Q: When do I have to turn on the flashers?**

A: Before you back your bus at the left and right reverses and any time you back your bus while on the course.

**Q: Do hazard lights have to be on in the passenger stop?**

A: No. Only the proper turn signals have to be used.

**Q: Do I practice in the same bus I compete in?**

A: Yes. Unless a bus becomes disabled, then all the remaining buses will be mixed up.

**Q: Do I apply the passenger/parking/emergency brake on passenger stops or reverses?**

A: No.

**Q: Can I shift the bus from drive to reverse without going into neutral?**

A: It depends on the bus type used.

**Q: Do I open the doors at passenger stops?**

A: Yes.

**Q: On the Right and Left Reverses, does the clock stop when I open the doors?**

A: You do not open the doors. You will honk your horn when you have completed your backing. The clock will stop until you start a forward movement.

**Q: Will the time for practice be the same time on competition day?**

A: Yes.

**Q: Whenever the bus is disabled, does my time stop?**

A: Yes.

**Q: If the doors are open when you drive off, will points be deducted?**

A: Yes. It is a safety issue. Most buses will not let the bus move when the doors are open.

**Q: On the right and left reverses, do I need to turn on my flashers and honk my horn before backing?**

A: Yes. You must use the flashers and horn anytime you back your bus on the course.

**Q: Do I need to use my turn signals on free turns?**

A: Yes. Any time you move right or left on the course; you must use your turn signals.

**Q: On my practice day, may my rider open the emergency window to see how close I am?**

A: No. The emergency windows are never to be opened while practicing on the course.

**Q: Will there be judges on board the bus on practice day?**

A: No.

**Q: Will someone ride with me on the practice day to show me the course?**

A: No. A course map will be given to you at orientation the night before.

**Q: Can my support person get out of the bus on practice day?**

A: No. They must remain on the bus.

**Q: When I back into the reverses and stop and then continue backing into the reverses, will I be penalized?**

A: No. You will only be penalized if you pull forward and back in a second time.

**Q: How will the judges know when I have completed my backing into the reverses?**

A: You will honk your horn.

**Q: On practice day will I be told how far I am from the curb?**

A: Yes.

**Q: How long may I be on the course on practice day?**

A: 10 minutes. After 10 minutes, you will be asked to exit the course.

**Q: Do I have to compete in my uniform?**

A: Yes. If applicable, you may remove your tie and coat to become more comfortable.

**Q: Do I have to wear my uniform on practice day?**

A: No.

**Q: Can I video record or voice record my practice?**

A: No. No video recording devices are allowed to be used during practice or during competition. Violation of this rule will lead to immediate disqualification from the Roadeo.

**Q: Can I be coached on practice day?**

A: No, you will not receive any coaching during your practice or during the competition.

**PRE-TRIP INSPECTION QUESTIONS**

**Q: How early should we check-in before our scheduled pre-trip time?**

A: Check-in at the pre-trip inspection no less than 15 minutes before your assigned time.

**Q: At the Pre-Trip Inspection, will we get a countdown on our time left?**

A: Yes. 2 minutes, 1 minute, and 30-second warnings will be given.

**Q: At the Pre-Trip Inspection, can we walk around the bus and then record the defects?**

A: Yes. Any way you want to do it is acceptable.

**Q: Will a judge be writing down the defects for us as we find them?**

A: No. You must write them down yourself in as legible a manner as possible.

**Q: Wheels are under the bus, aren't they? Then we don't have to check them?**

A: Just don't crawl under the bus.

**Q: Will there be a similar bus to check out ahead of time?**

A: Yes. There will be a display bus for you to become familiar with during orientation

**Q: Will the Pre-Trip Inspection be performed on a 35-' or 40+' bus?**

A: A 40-foot bus will be used for the pre-trip inspection.

**Q: Does checking the bus windows mean opening the windows?**

A: No. Keep the windows closed.

**Q: Why don't we have the Pre-Trip on Roadeo competition day before the contestant drive?**

A: Scheduling the Pre-Trip prior to driving on competition day might impact the timing of the driving competition. As we have more experience with the Pre-Trip the Roadeo committee may decide to change it, but at this time it remains on the practice day.

## **MAINTENANCE TECHNICIAN QUESTIONS**

### **Q: Can my team's competition be videotaped?**

A: No. There will be absolutely no video cameras or video recording in the competition area. Violation of this rule will lead to immediate disqualification from the Roadeo.

### **Q: Can photos be taken of the events?**

A: Yes, but anyone taking photos must not interfere or distract the contestants.

### **Q: What type of ABS system is used in the Roadeo?**

A: Wabco 'D' 45/4M

### **Q: How many members can a Maintenance team have?**

A: The standard maintenance team is made up of 3 maintenance technicians; 2-person teams may compete, but no special compensation will be made for them.

### **Q: Can all team members participate in each of the Maintenance Technician problems?**

A: All members can work on all problems. Each team must decide the best use of team members and not create a safety issue due to space constraints.

### **Q: Are the Saturday maintenance technician training sessions mandatory?**

A: No. They are not mandatory but strongly encouraged. Teams that attend are brought up to date on the latest information regarding the maintenance technician tasks and are provided important information about the competition modules.

### **Q: Do I have to come to orientation?**

A: No, but you are strongly encouraged to come to orientation. However, it is not mandatory.

### **Q: Why was driving removed from the Maintenance Technician Roadeo?**

A: The Roadeo Committee determined that the amount of time to complete the Roadeo was creating a safety and fairness issue. They also wanted to keep the focus of the Maintenance Technician competition on primary maintenance skills.

### **Q: Will the defects be revealed after the event is completed?**

A: No.

### **Q: Will there be transportation from the Hotel to the Roadeo site?**

A: Yes. The shuttle schedule will be posted online as soon as available.

### **Q: Do I get a personal appearance inspection? Can it be added if we add it to the operator?**

A: No, although you must wear safe clothing, including proper shoes, ear, and eye protection.

**Q: Can I bring my family?**

A: Yes. Come and enjoy the festivities and competition.

**Q: Are my family, manager, friends allowed with the team while we compete?**

A: Only if space allows. Some years there isn't room for spectators in the Maintenance events. Your team manager(s) will be allowed in the area. Note: We cannot hold up the competition waiting for anyone to arrive.

**Q: Will there be refreshments/lunch?**

A: Refreshments will be available on competition day.

**Q: Will there be a bus available for familiarization purposes?**

A: Yes. A competition bus will be available.

**Q: What time should I arrive to compete?**

A: Contestant teams must arrive at the on-site check-in at least 45 minutes before competition time and must arrive at the maintenance technician holding area at least 30 minutes before their scheduled competition time. Teams arriving late may be disqualified from the competition.

**Q: What if I am late to the competition?**

A: Teams who report late to the Maintenance check-in may be disqualified from the competition. You must allow yourself enough time to arrive at the Roadeo site early.

**Q: Can I go to the Roadeo site before the Sunday competition?**

A: No. Maintenance team members are not allowed at the Roadeo site before the day of the competition. Any violation of this policy may cause your team to be disqualified from competition.

**ROADEO WINNERS QUESTIONS**

**Q: When can I expect my custom ring and monetary winnings?**

A: You can expect your monetary winnings within six weeks from the event

**Q: Will I need to pay taxes on the money I win?**

A: This is based on your state and federal taxes. Please check with a tax professional.

**Q: Can I bring my family with me on stage if I win?**

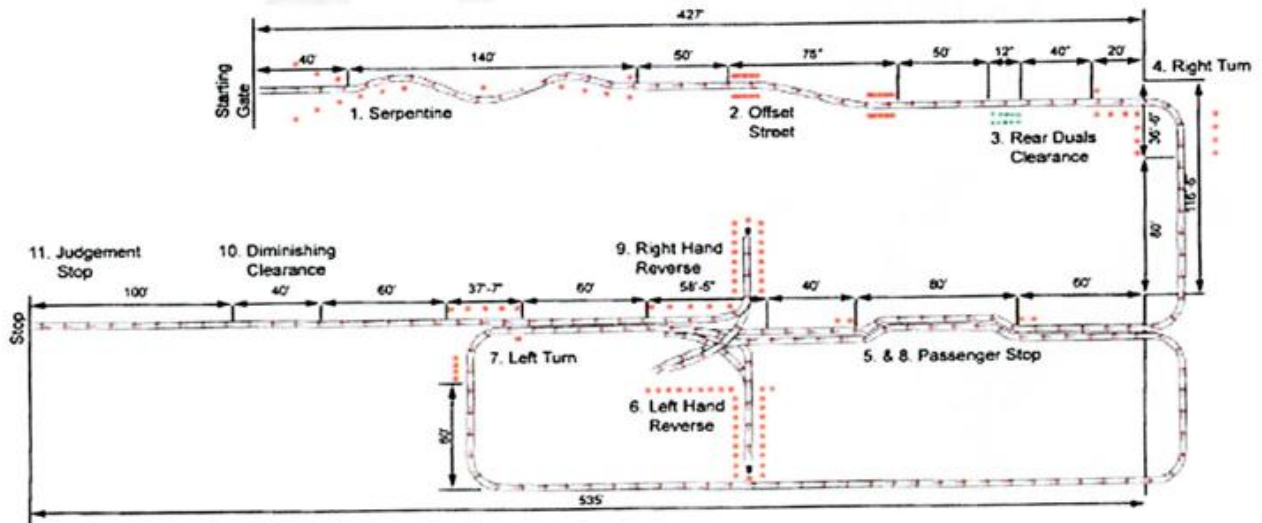
A: No. Due to time restrictions, we kindly ask that only winners come on stage to accept their award. But you're welcome to take pictures after the ceremony.

## APPENDIX 3: BUS OPERATOR COURSE DESCRIPTIONS

**\*\* The 2025 International Bus Rodeo will only use the 40+ foot bus \*\***

Both course layouts are typical. The order of the obstacles may vary in the International Bus Rodeo competition.

### Bus Operators' Rodeo Course: 40 ft. Bus



#### LEGEND

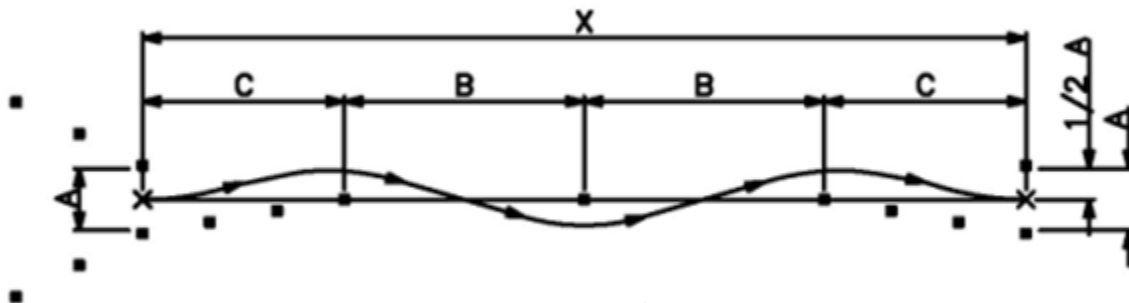
40' Distance between arrowheads  
→ PATH OF BUS

NOT TO SCALE

## APPENDIX 4: BUS OPERATOR OBSTACLE DESCRIPTIONS

### SERPENTINE

This obstacle tests a driver's ability to negotiate tight turns. The driver is required to enter a gate, steer in and out through 3 cones, and exit the obstacle through another gate. The bus is not permitted to touch any portion of any cone.



40' x 102' BUS;

A = 9'-6"

B = 36'-0"

C = 32'-0"

X = 136'-0"

### LEGEND

" 28" CONE

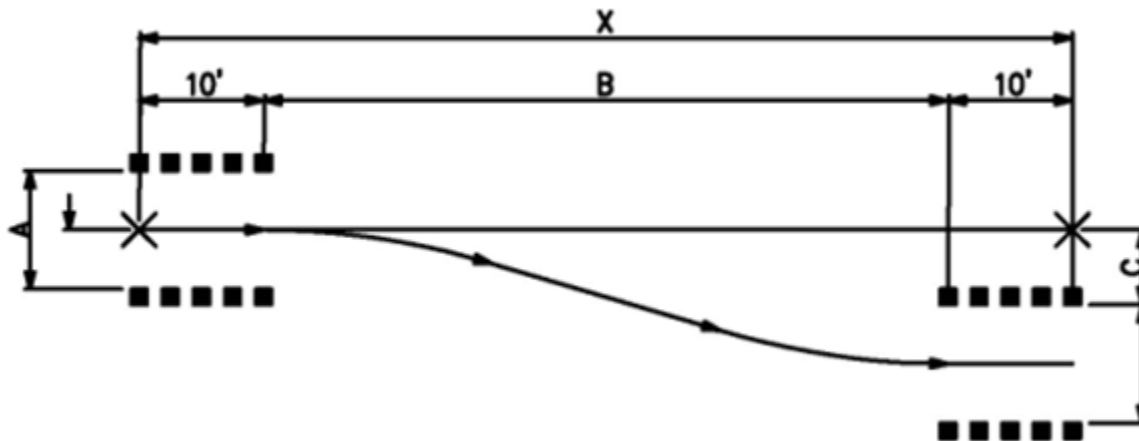
→ PATH OF BUS

X — X SURVEY BASELINE

NOT TO SCALE

### OFFSET STREET

In this obstacle, the driver is required to drive through 2 separate narrow lanes that are offset to the right 1 full lane's width from each other.



40' x 102' BUS;

A = 9'-6"

B = 55'-0"

C = 6'-0"

X = 75'-0"

### LEGEND

" 28" CONE

→ PATH OF BUS

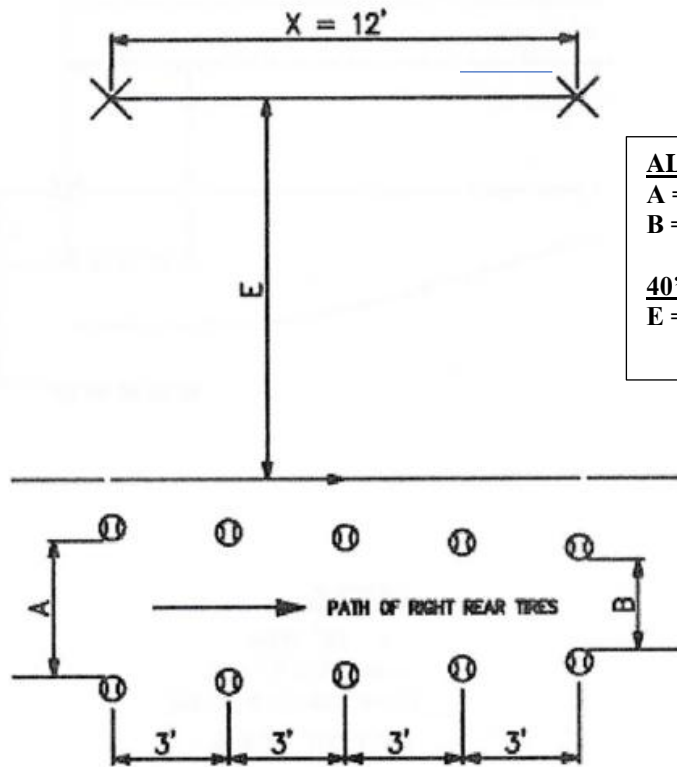
X — X SURVEY BASELINE

NOT TO SCALE



## REAR DUALS CLEARANCE

This is a judgment obstacle in which the driver must drive through a line with their right dual tires. The lane is only slightly wider than the total outside width of a pair of rear duals and is marked out with large flat washers and tennis balls. It is wider at the entrance and narrower at the exit.



### ALL BUSES:

A = WIDTH OF RIGHT REAR DUAL TIRES + 6"

B = WIDTH OF RIGHT REAR DUAL TIRES + 3"

### 40' x 102' BUS:

E = 10'-9"

### LEGEND



TENNIS BALL



PATH OF BUS

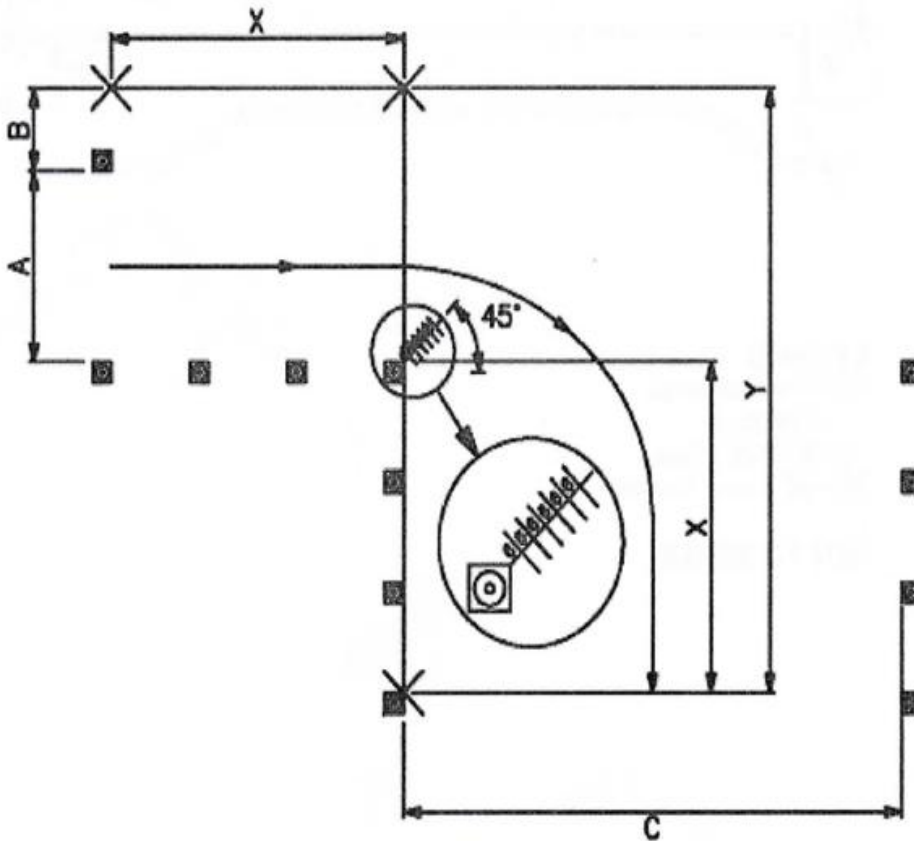
X — X SURVEY BASELINE

NOT TO SCALE

## RIGHT TURN

This obstacle tests a driver's ability to negotiate a right 90-degree turn. The corner is marked with cones and the rear tire of the bus is to pass within 6 inches of the corner pivot cone.

To measure this, a line should be marked out of 45-degrees from the corner and divided into 6-inch segments. The judge has only to see which segment the outside of the tire passes over to judge the driver.



### 40' x 102' BUS:

A = 11'-6"

B = 5'-0"

C = 34'-0"

X = 20'-0"

Y = 36'-6"

### LEGEND



28" CONE



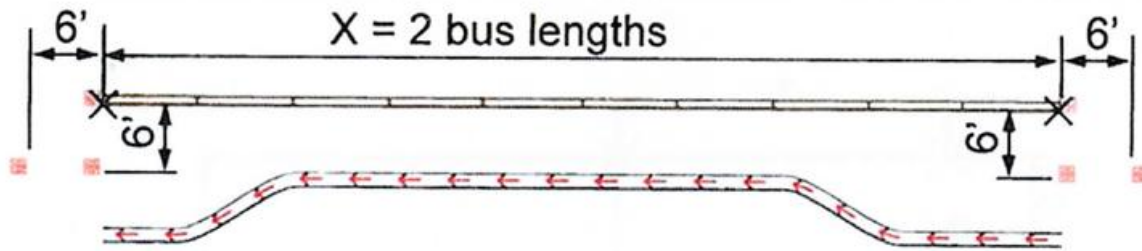
PATH OF BUS

X — X SURVEY BASELINE

NOT TO SCALE


### FIRST & SECOND CUSTOMER STOP

In this obstacle, the bus operator is required to stop the bus with the front wheels within 6 inches of the curb and the rear wheels within 15 inches of the curb.



### LEGEND

 Railroad tie



**28" Cone**

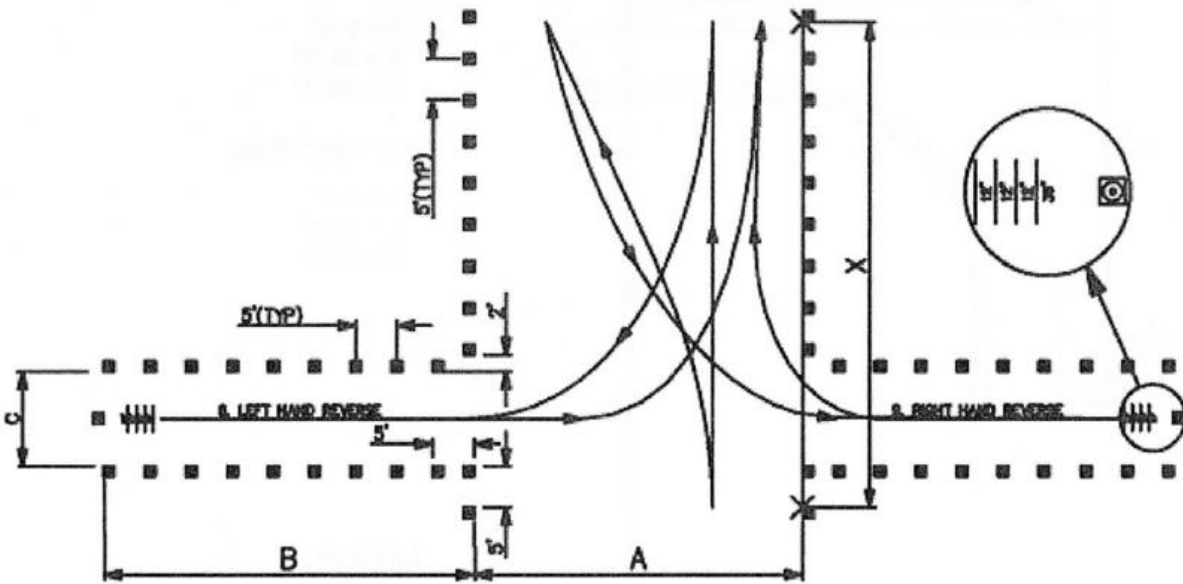
→ **Path of bus**

**X — X SURVEY BASELINE**

**NOT TO SCALE**

### LEFT AND RIGHT HAND REVERSE

This obstacle requires the bus operator to reverse the bus to the right or left between a set of cones stopping with the rear bumper within 36 inches of the cone in the rear without touching any of the cones.



#### 40' x 102' BUS:

A = 40'-0"

B = 45'-0"

C = 11'-5"

X = 58'-5"

#### LEGEND



28" CONE



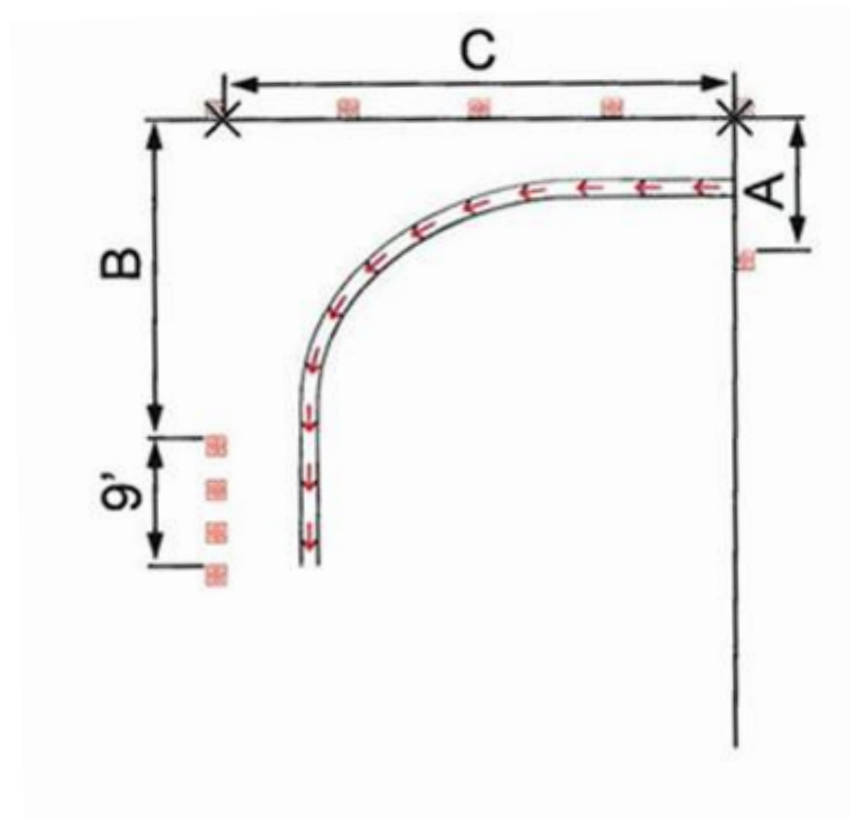
PATH OF BUS

X SURVEY BASELINE

NOT TO SCALE

### LEFT TURN

This obstacle tests a driver's ability to make a tight left turn in a close situation. The driver is required to steer the bus into a 90-degree turn and not hit any of the cones outlining the obstacle.




40' x 102' BUS:

A = 9'-9"

B = 23'-0"

C = 36'-7"

### LEGEND

 28" CONE

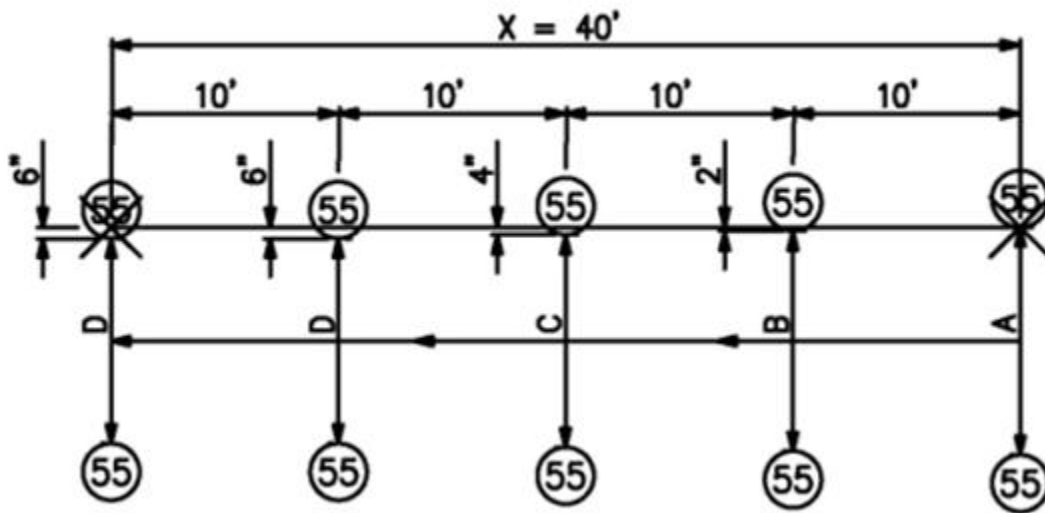
 PATH OF BUS

X — X SURVEY BASELINE

NOT TO SCALE

### DIMINISHING CLEARANCE

This obstacle tests the driver's ability to judge the position and speed of their vehicles. The driver is required to drive through a narrowing v-shaped channel outlined with barrels while maintaining a minimum speed of 20 miles per hour.



#### 40' x 102' BUS;

A = 10'-0"

B = 9'-8"

C = 9'-4"

D = 9'-0"

X = 40'-0"

#### LEGEND



55 GALLON DRUM



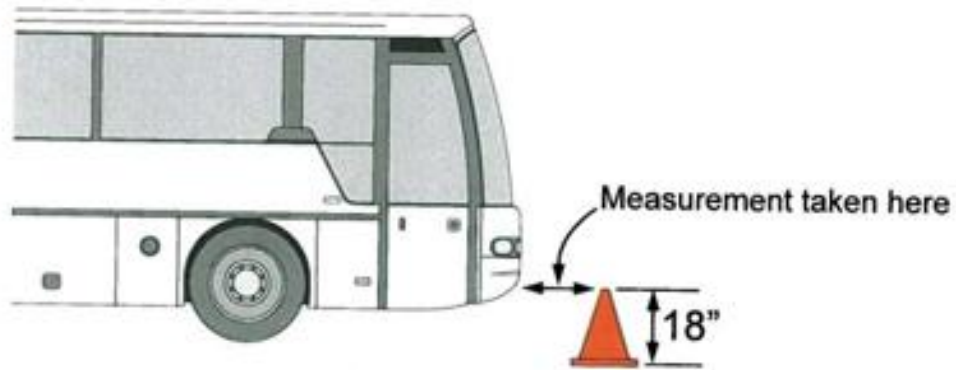
PATH OF BUS

X — X SURVEY BASELINE

NOT TO SCALE

### **JUDGEMENT STOP**

This obstacle tests a driver's ability to judge stopping distances between the bus and a small object directly ahead. A small 18 inch cone is placed on the finish line, the driver's final stop. The bus must stop with the front bumper within 6 inches of the cone.



## APPENDIX 5: BUS OPERATOR SCORE SHEETS

Contestant Number

Contestant Name

### FIXED ROUTE SCORE SHEET SUMMARY

Event	Possible Points	Points Earned
- Pre-Trip Inspection	50	<input type="text"/>
- 1. Serpentine	50	<input type="text"/>
- 2. Offset Street	50	<input type="text"/>
- 3. Rear Dual Clearance	50	<input type="text"/>
- 4. Right Turn	50	<input type="text"/>
- 5. First Customer Stop	50	<input type="text"/>
- 6. Left Hand Reverse	50	<input type="text"/>
- 7. Left Turn	50	<input type="text"/>
- 8. Second Customer Stop	50	<input type="text"/>
- 9. Right Hand Reverse	50	<input type="text"/>
- 10. Diminishing Clearance	50	<input type="text"/>
- 11. Judgement Stop	50	<input type="text"/>
- Safety Habits	25	<input type="text"/>
- Smoothness of Operation/A.D.A.	25	<input type="text"/>
- Uniform Inspection	50	<input type="text"/>
<b>TOTAL POINTS POSSIBLE</b>	<b>700</b>	<input type="text"/>

- Timekeeper's Record

A. Elapsed Time :

B. Overall Penalty :

(Deduct 1 point for each second over 7 minutes. Not to exceed a maximum penalty of 180 points)

**Total Score**



# Pre-Trip Inspection Report Form

Defects:

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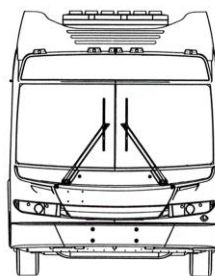
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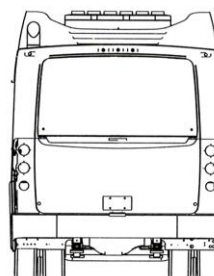
Security item:

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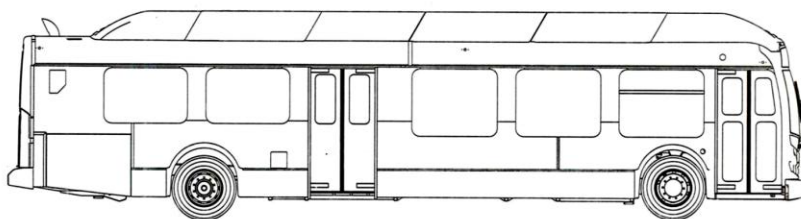
Front



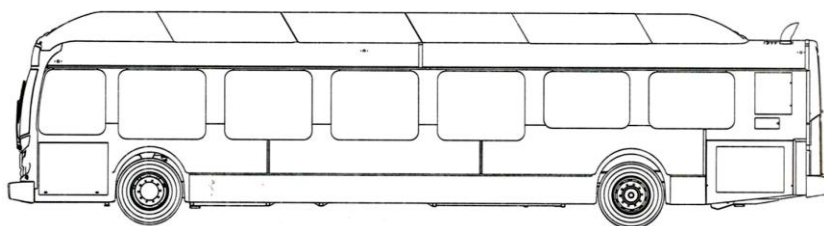
Rear



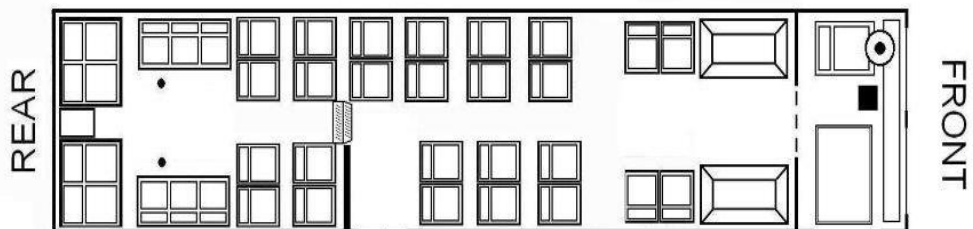
Curb Side



Driver Side



LOW FLOOR



Contestant Number

Bus Number

## PRE-TRIP INSPECTION

VEHICLE CLASS: FIXED ROUTE

- Identify and record eight (8) planted defects.
- Identify and record one (1) security problem

- Number of planted defects found : \_\_\_\_\_
- Security problem found : \_\_\_\_\_
- Item(s) not returned to original condition : \_\_\_\_\_  
(Compartment doors, lights, windows, etc.)

Calculations		
X 5 =	_____	
If yes, add 10 =	_____	
X 1 =	_____	
50	-	<input type="text"/>
Possible Points	Points Deducted	<input type="text"/>
		<b>Final Score</b> (No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

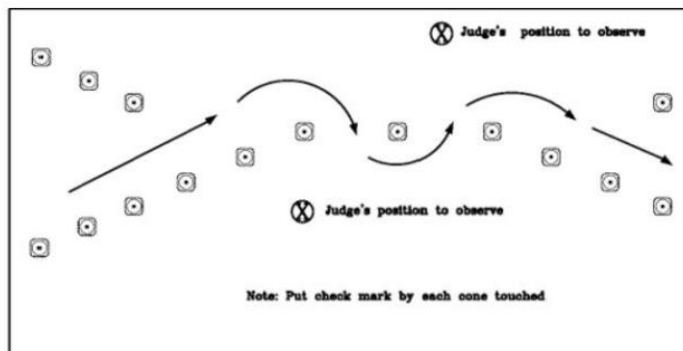
Contestant Number

Bus Number

## SERPENTINE

VEHICLE CLASS: FIXED ROUTE

- Circle each cone that is touched.
- Touching the base of a cone is the same as touching the side.
- Each cone only counts against the contestant once (the first time it is touched).



- Pivot cone touched : \_\_\_\_\_
- Number of other cones touched : \_\_\_\_\_
- Number of times shifted into reverse : \_\_\_\_\_
- Completed obstacle as designed : \_\_\_\_\_

### Calculations

If yes, deduct 25 = \_\_\_\_\_

X 10 = \_\_\_\_\_

X 10 = \_\_\_\_\_

If no, deduct 50 = \_\_\_\_\_

50

-

=

Possible Points

Points Deducted

**Final Score**  
(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

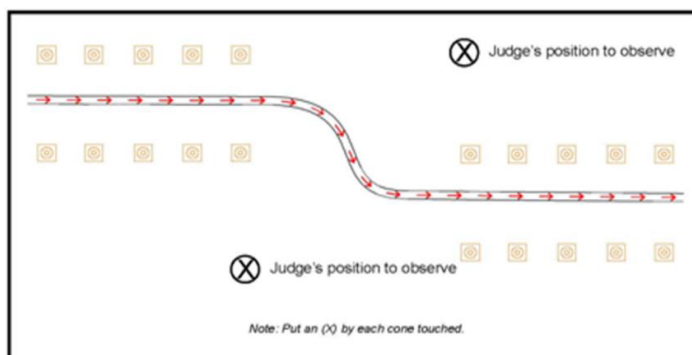
Contestant Number

Bus Number

## OFFSET STREET

VEHICLE CLASS: FIXED ROUTE

- Circle each cone that is touched.
- Touching the base of a cone is the same as touching the side.
- Each cone only counts against the contestant once (the first time it is touched).



- Number of cones touched : \_\_\_\_\_
- Number of times shifted into reverse : \_\_\_\_\_
- Completed obstacle as designed : \_\_\_\_\_

### Calculations

X 10 = \_\_\_\_\_

X 10 = \_\_\_\_\_

If no, deduct 50 = \_\_\_\_\_

50 -  =

Possible Points

Points Deducted

Final Score

(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

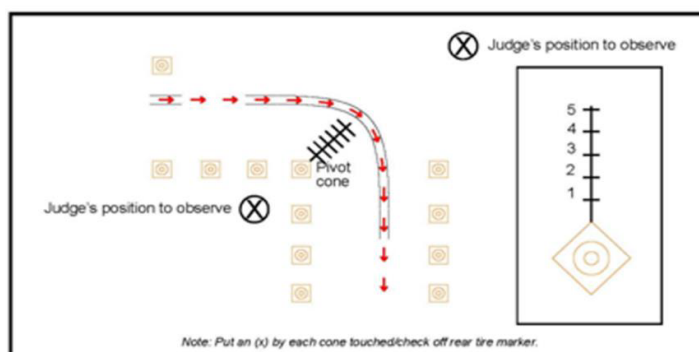
Contestant Number

Bus Number

## RIGHT TURN

VEHICLE CLASS: FIXED ROUTE

- Circle each cone and rear tire marker that is touched.
- Touching the base of a cone is the same as touching the side.
- Each cone only counts against the contestant once (the first time it is touched).
- Note the number of 6" segments beyond the first 6" segment the right rear tire passes by the pivot cone.



- Pivot cone touched : \_\_\_\_\_
- Number of other cones touched : \_\_\_\_\_
- Number of times shifted into reverse : \_\_\_\_\_
- Number of 6" segments beyond the first 6" segment : \_\_\_\_\_
- Completed obstacle as designed : \_\_\_\_\_

### Calculations

If yes, deduct 25 = \_\_\_\_\_

X 10 = \_\_\_\_\_

X 10 = \_\_\_\_\_

X 5 = \_\_\_\_\_

If no, deduct 50 = \_\_\_\_\_

50

-

=

Possible Points

Points Deducted

Final Score

(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

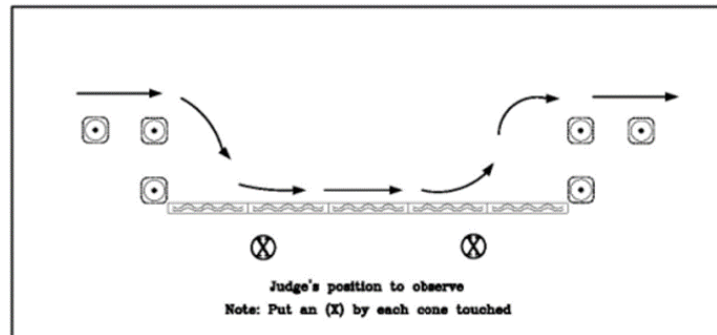
Contestant Number

Bus Number

## FIRST CUSTOMER STOP

VEHICLE CLASS: FIXED ROUTE

- Circle each cone that is touched.
- Touching the base of a cone is the same as touching the side.
- Each cone only counts against the contestant once (the first time it is touched).
- If the vehicle tire strikes the curb, mark first contact with a circle.
- Measure distance in inches from the top of the curb to the tire sidewall, directly under the center of the wheel hub.



- Number of entrance cones touched : \_\_\_\_\_
- Curb touched : \_\_\_\_\_
- Front tire distance from curb (in inches) : \_\_\_\_\_  
(1 point penalty for each inch **beyond 6 inches**. All distances are rounded up or down to the nearest inch. A measurement less than ½ inch is rounded down and a measurement ½ inch or more is rounded up.)
- Rear tire distance from curb (in inches) : \_\_\_\_\_  
(1 point penalty for each inch **beyond 15 inches**. All distances are rounded up or down to the nearest inch. A measurement less than ½ inch is rounded down and a measurement ½ inch or more is rounded up.)
- Number of exit cones touched : \_\_\_\_\_
- Number of times shifted into reverse : \_\_\_\_\_
- Completed obstacle as designed : \_\_\_\_\_

### Calculations

X 25 = \_\_\_\_\_

If yes, deduct 25 = \_\_\_\_\_

X 1 = \_\_\_\_\_

X 1 = \_\_\_\_\_

X 25 = \_\_\_\_\_

X 10 = \_\_\_\_\_

If no, deduct 50 = \_\_\_\_\_

50



Possible Points

Points Deducted

**Final Score**  
(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

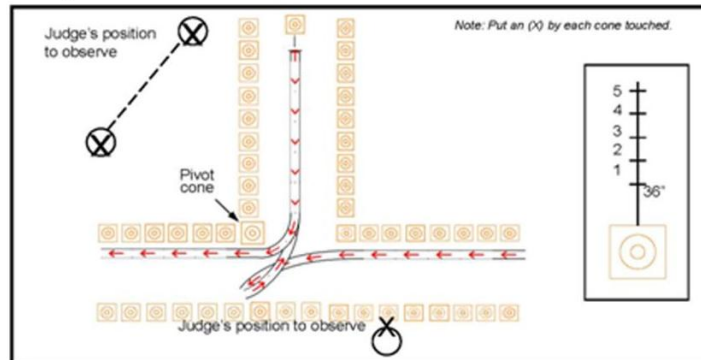
Contestant Number

Bus Number

## RIGHT HAND REVERSE

VEHICLE CLASS: FIXED ROUTE

- Circle each cone that is touched.
- Touching the base of a cone is the same as touching the side.
- Each cone only counts against the contestant once (the first time it is touched).
- When the vehicle stops backing, measure the distance (in inches) from the base of the rear cone to the rear bumper.



- Rear cone touched : \_\_\_\_\_
- Pivot cone touched : \_\_\_\_\_
- Number of other cones touched : \_\_\_\_\_
- Number of times shifted into reverse : \_\_\_\_\_  
(after initial shift into reverse)
- Number of 12" segments **beyond** the 36" limit from rear cone : \_\_\_\_\_
- Completed obstacle as designed : \_\_\_\_\_

### Calculations

If yes, deduct 25 = \_\_\_\_\_

If yes, deduct 10 = \_\_\_\_\_

X 5 = \_\_\_\_\_

X 10 = \_\_\_\_\_

X 5 = \_\_\_\_\_

If no, deduct 50 = \_\_\_\_\_

50

-

=

Possible Points

Points Deducted

**Final Score**  
(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

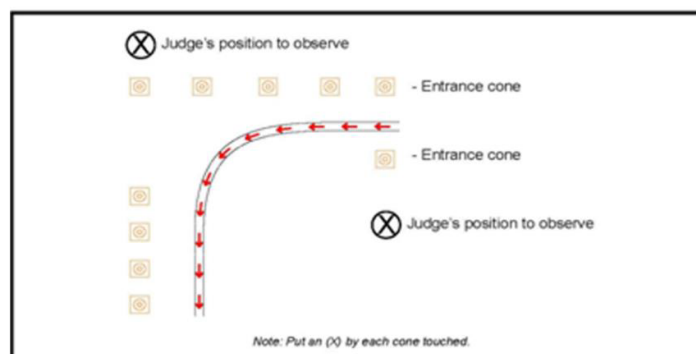
Contestant Number

Bus Number

## LEFT TURN

VEHICLE CLASS: FIXED ROUTE

- Circle each cone that is touched.
- Touching the base of a cone is the same as touching the side.
- Each cone only counts against the contestant once (the first time it is touched).



- Number of entrance cones touched : \_\_\_\_\_
- Number of other cones touched : \_\_\_\_\_
- Number of times shifted into reverse : \_\_\_\_\_
- Completed obstacle as designed : \_\_\_\_\_

### Calculations

X 25 = \_\_\_\_\_

X 10 = \_\_\_\_\_

X 10 = \_\_\_\_\_

If no, deduct 50 = \_\_\_\_\_

50

-

=

Possible Points

Points Deducted

Final Score

(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_



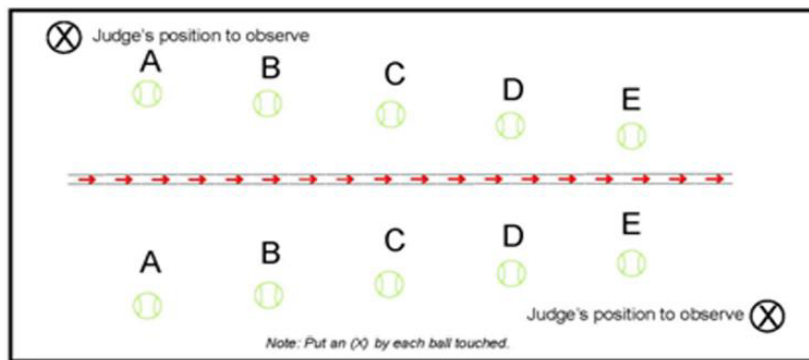
Contestant Number

Bus Number

## REAR DUAL CLEARANCE

VEHICLE CLASS: FIXED ROUTE

- Circle each ball that is touched.
- Each ball only counts against the contestant once (the first time it is touched).
- Ball does not need to move off of washer for it to count as a touch.



- Number of A balls touched : \_\_\_\_\_
- Number of B balls touched : \_\_\_\_\_
- Number of C balls touched : \_\_\_\_\_
- Number of D balls touched : \_\_\_\_\_
- Number of E balls touched : \_\_\_\_\_
- Shifted into reverse : \_\_\_\_\_
- Completed obstacle as designed : \_\_\_\_\_

### Calculations

X 20 = \_\_\_\_\_

X 16 = \_\_\_\_\_

X 8 = \_\_\_\_\_

X 4 = \_\_\_\_\_

X 2 = \_\_\_\_\_

If yes, deduct 10 = \_\_\_\_\_

If no, deduct 50 = \_\_\_\_\_

50

-

=

Possible Points

Points Deducted

Final Score

(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

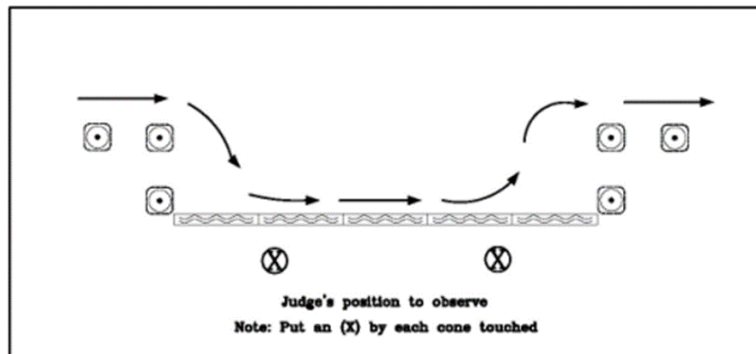
Contestant Number

Bus Number

## SECOND CUSTOMER STOP

VEHICLE CLASS: FIXED ROUTE

- Circle each cone that is touched.
- Touching the base of a cone is the same as touching the side.
- Each cone only counts against the contestant once (the first time it is touched).
- If the vehicle tire strikes the curb, mark first contact with a circle.
- Measure distance in inches from the top of the curb to the tire sidewall, directly under the center of the wheel hub.



- Number of entrance cones touched : \_\_\_\_\_
- Curb touched : \_\_\_\_\_
- Front tire distance from curb (in inches) : \_\_\_\_\_  
(1 point penalty for each inch beyond 6 inches. All distances are rounded up or down to the nearest inch. A measurement less than ½ inch is rounded down and a measurement ½ inch or more is rounded up.)
- Rear tire distance from curb (in inches) : \_\_\_\_\_  
(1 point penalty for each inch beyond 15 inches. All distances are rounded up or down to the nearest inch. A measurement less than ½ inch is rounded down and a measurement ½ inch or more is rounded up.)
- Number of exit cones touched : \_\_\_\_\_
- Number of times shifted into reverse : \_\_\_\_\_
- Completed obstacle as designed : \_\_\_\_\_

### Calculations

X 25 = \_\_\_\_\_

If yes, deduct 25 = \_\_\_\_\_

X 1 = \_\_\_\_\_

X 1 = \_\_\_\_\_

X 25 = \_\_\_\_\_

X 10 = \_\_\_\_\_

If no, deduct 50 = \_\_\_\_\_

50

-

=

Possible Points

Points Deducted

Final Score

(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

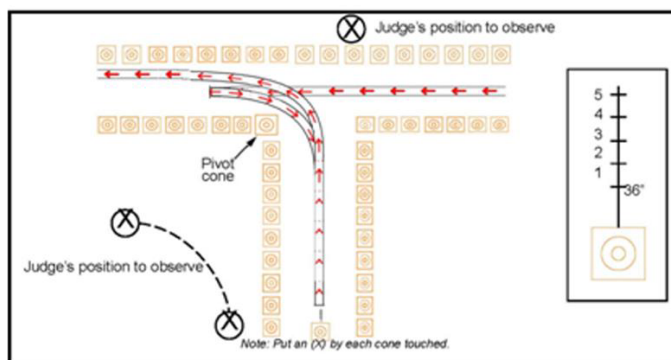
Contestant Number

Bus Number

## LEFT HAND REVERSE

VEHICLE CLASS: FIXED ROUTE

- Circle each cone that is touched.
- Touching the base of a cone is the same as touching the side.
- Each cone only counts against the contestant once (the first time it is touched).
- When the vehicle stops backing up, measure distance (in inches) from the base of the rear cone to the rear bumper.



- Rear cone touched : \_\_\_\_\_
- Pivot cone touched : \_\_\_\_\_
- Number of other cones touched : \_\_\_\_\_
- Number of times shifted into reverse : \_\_\_\_\_  
(after initial shift into reverse)
- Number 12" segments **beyond** the 36" limit from rear cone: \_\_\_\_\_
- Completed obstacle as designed : \_\_\_\_\_

### Calculations

If yes, deduct 25 = \_\_\_\_\_

If yes, deduct 10 = \_\_\_\_\_

X 5 = \_\_\_\_\_

X 10 = \_\_\_\_\_

X 5 = \_\_\_\_\_

If no, deduct 50 = \_\_\_\_\_

50 -  =

Possible Points

Points Deducted

**Final Score**

(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

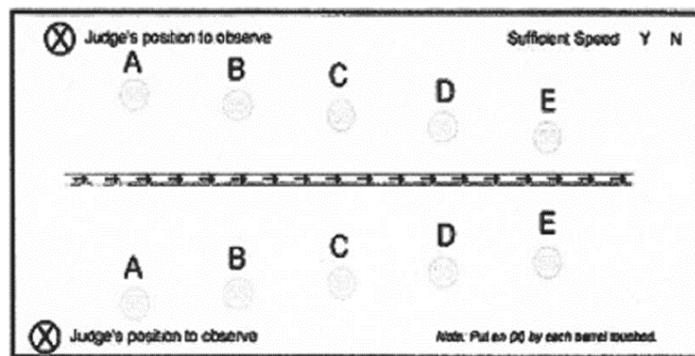
Contestant Number

Bus Number

## DIMINISHING CLEARANCE

VEHICLE CLASS: FIXED ROUTE

- Circle each barrel that is touched.
- Each barrel only counts against the contestant once (the first time it is touched).
- Speed detection will determine if the vehicle maintains a minimum speed of 20 MPH through all ten barrels.



- Number of A barrels touched : \_\_\_\_\_
- Number of B barrels touched : \_\_\_\_\_
- Number of C barrels touched : \_\_\_\_\_
- Number of D barrels touched : \_\_\_\_\_
- Number of E barrels touched : \_\_\_\_\_
- Maintained minimum speed of 20 MPH : \_\_\_\_\_  
Actual Speed : \_\_\_\_\_ MPH
- Completed obstacle as designed : \_\_\_\_\_

### Calculations

X 20 = \_\_\_\_\_

X 16 = \_\_\_\_\_

X 8 = \_\_\_\_\_

X 4 = \_\_\_\_\_

X 2 = \_\_\_\_\_

If no, deduct 25 = \_\_\_\_\_

If no, deduct 50 = \_\_\_\_\_

50

-

=

Possible Points

Points Deducted

Final Score

(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

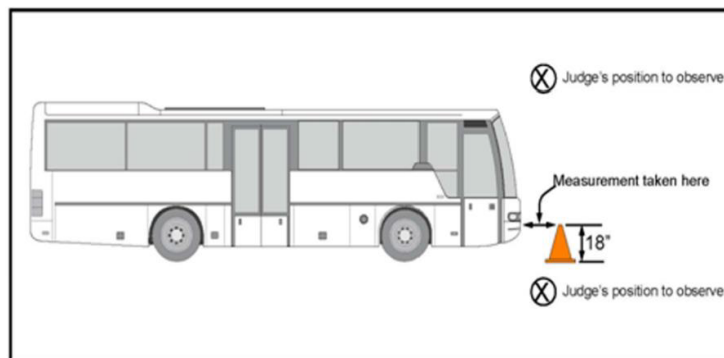
Contestant Number

Bus Number

## JUDGEMENT STOP

VEHICLE CLASS: FIXED ROUTE

- Circle cone if contact is made.
- Touching the base of the cone is the same as touching the side.
- Measure distance (in inches) from top of cone to vehicle bumper after vehicle has stopped.



- Cone touched : \_\_\_\_\_

- Distance from cone (in inches) : \_\_\_\_\_

(1 point penalty for each inch **beyond 6 inches**. All distances are rounded up or down to the nearest inch. A measurement less than ½ inch is rounded down and a measurement ½ inch or more is rounded up.)

- Additional full stops :

(after initial full stop) \_\_\_\_\_

- Completed obstacle as designed : \_\_\_\_\_

### Calculations

If yes, deduct 50 = \_\_\_\_\_

X 1 = \_\_\_\_\_

X 25 = \_\_\_\_\_

If no, deduct 50 = \_\_\_\_\_

50

-

=

Possible Points

Points Deducted

**Final Score**

(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

Contestant Number

Bus Number

## SAFETY HABITS

VEHICLE CLASS: FIXED ROUTE

### SECTION A

- Failure to use proper turn signal : \_\_\_\_\_
- Failure to sound the horn when backing : \_\_\_\_\_
- Failure to use flashers when backing : \_\_\_\_\_
- Moving with door open : \_\_\_\_\_
- Failure to use seat belt : \_\_\_\_\_

### SECTION B – (Deduct Points if Operator Exhibits:)

- Poor posture : \_\_\_\_\_
- Poor use of mirrors : \_\_\_\_\_
- Poor use of hands : \_\_\_\_\_
- Poor use of feet : \_\_\_\_\_

### Calculations

X 1 = \_\_\_\_\_

X 3 = \_\_\_\_\_

X 3 = \_\_\_\_\_

X 3 = \_\_\_\_\_

If yes, deduct 5 = \_\_\_\_\_

X 2 = \_\_\_\_\_

X 2 = \_\_\_\_\_

X 2 = \_\_\_\_\_

X 2 = \_\_\_\_\_

25 -  =

Possible Points

Points Deducted

Final Score

(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

Contestant Number

Bus Number

## SMOOTHNESS OF OPERATION AND TIMEKEEPER'S RECORD

VEHICLE CLASS: FIXED ROUTE

- Evaluate each contestant on their ability to deliver a smooth ride on the bus.
- The following criteria is to be employed in making each evaluation.

### SMOOTHNESS OF OPERATION

- Number of sudden stops : \_\_\_\_\_
- Number of sudden starts : \_\_\_\_\_
- Number of abrupt turns : \_\_\_\_\_
- Number of ADA announcements not made : \_\_\_\_\_

Time stops for mechanical trouble and at each course problem where measurements are taken. Time stops at the completion of the judgment stop.

- Contestant's Time : \_\_\_\_\_

- Penalty of 1 point per second over 7 minutes.

(Maximum penalty of 180 points)

### Calculations

X 1 = \_\_\_\_\_

X 1 = \_\_\_\_\_

X 1 = \_\_\_\_\_

X 10 = \_\_\_\_\_

25

-

=

Possible Points

Points Deducted

**Final Score**

(No less than 0)

Time (in Seconds) Greater Than  
7 Minutes

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

Contestant Number

## UNIFORM INSPECTION

VEHICLE CLASS: FIXED ROUTE

- Deduct 12.5 points for each instance of not meeting the uniform inspection criteria
  - Valid Driver's License
  - Clean, Neat, Wrinkle Free Uniform
  - Appropriate and Clean Shoes
  - Overall Appearance

- Number of deductions noted : \_\_\_\_\_

(Maximum of 4 deductions)

Explanation of deductions noted : \_\_\_\_\_

Calculations		
X 12.5	=	_____
50	-	<input type="text"/>
Possible Points	Points Deducted	Final Score (No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_



## APPENDIX 6: MAINTENANCE TECHNICIAN SCORE SHEETS

---

Team Name

Team Members

### MAINTENANCE SCORE SHEET SUMMARY

Maintenance Technician Tests	Base Score	Points Earned
- Written Test	125	<input type="text"/>
- USSC Vehicle Inspection	350	<input type="text"/>
- Cummins / Allison Power Train Event	350	<input type="text"/>
- Cummins / Voith Power Train Event	350	<input type="text"/>
- Custom Training Aid Air Brake Board Event	350	<input type="text"/>
- Thermo King HVAC Event	350	<input type="text"/>
- MCI Multiplex Event	350	<input type="text"/>
- Vapor Door Event	350	<input type="text"/>
<hr/>		
TOTAL POINTS POSSIBLE	2,575	<div><input type="text"/> Total Score</div>

## WRITTEN TEST

Team Name

Bus Number

1) A B C D

2) A B C D

3) A B C D

4) A B C D

5) A B C D

6) A B C D

7) A B C D

8) A B C D

9) A B C D

10) A B C D

11) A B C D

12) A B C D

13) A B C D

14) A B C D

15) A B C D

16) A B C D

17) A B C D

18) A B C D

19) A B C D

20) A B C D

21) A B C D

22) A B C D

23) A B C D

24) A B C D

25) A B C D

26) A B C D

27) A B C D

28) A B C D

29) A B C D

30) A B C D

31) A B C D

32) A B C D

33) A B C D

34) A B C D

35) A B C D

36) A B C D

37) A B C D

38) A B C D

39) A B C D

40) A B C D

41) A B C D

42) A B C D

43) A B C D

44) A B C D

45) A B C D

46) A B C D

47) A B C D

48) A B C D

49) A B C D

50) A B C D

Number Correct \_\_\_\_\_ x 2.5 =

**TOTAL POINTS EARNED**

(maximum 125 points)

Tie Braker: Time to Complete

\_\_\_\_\_:\_\_\_\_\_  
(min:sec)

Judge's Name: \_\_\_\_\_

Judge's Initials \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials \_\_\_\_\_

Team Name

Bus Number

## USSC VEHICLE INSPECTION MAINTENANCE

- Identify and record 14 planted defects.

### POINTS EARNED

- Number of planted defects found : \_\_\_\_\_

### PENALTIES

- Item(s) not returned to original condition : \_\_\_\_\_  
(compartment door, lights, windows, etc.)
- Unsafe inspection practices : \_\_\_\_\_  
(crawling under the bus)

### DISQUALIFICATION

- Attempt to start the vehicle : \_\_\_\_\_

### Calculations

$$\times 25 = \underline{\hspace{2cm}}$$

$$\times 10 = \underline{\hspace{2cm}}$$

$$\times 10 = \underline{\hspace{2cm}}$$

Points Earned

Points Deducted

**Final Score**  
(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

Team Name

## CUMMINS / ALLISON / EMP POWER TRAIN EVENT MAINTENANCE

- Identify and record seven (7) planted defects.
- Identify, record, and correct defect which renders the power train inoperable.

### POINTS EARNED

- Number of planted defects found : \_\_\_\_\_

### PENALTIES

- Engine not returned to original status : \_\_\_\_\_

- Improper use of tools/test equipment : \_\_\_\_\_

- Safety violation(s) : \_\_\_\_\_

### TIE BRAKER

- Elapsed time to correct  
disabling defect \_\_\_\_\_ : \_\_\_\_\_  
*minutes* *seconds*

### Calculations

X 50 = \_\_\_\_\_

If yes, deduct 50 = \_\_\_\_\_

If yes, deduct 10 = \_\_\_\_\_

X 10 = \_\_\_\_\_

Points Earned

Points Deducted

Final Score  
(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

Team Name

## CUMMINS / VOITH / EMP POWER TRAIN EVENT MAINTENANCE

- Identify and record seven (7) planted defects.
- Identify, record, and correct defect which renders the power train inoperable.

### POINTS EARNED

- Number of planted defects found : \_\_\_\_\_

### PENALTIES

- Engine not left in proper working order : \_\_\_\_\_

- Improper use of tools/test equipment : \_\_\_\_\_

- Safety violation(s) : \_\_\_\_\_

### TIE BRAKER

- Elapsed time to correct  
disabling defect

\_\_\_\_\_ : \_\_\_\_\_  
*minutes* *seconds*

### Calculations

X 50 = \_\_\_\_\_

If yes, deduct 50 = \_\_\_\_\_

If yes, deduct 10 = \_\_\_\_\_

X 10 = \_\_\_\_\_

Points Earned

Points Deducted

Final Score  
(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

Team Name

Bus Number

## CUSTOM TRAINING AIDS AIR BRAKE BOARD EVENT

### MAINTENANCE

- Diagnosis planted electrical defect.
- Identify and record 6 planted Air Brake System defects.

#### POINTS EARNED

- Correct diagnosis of electrical planted defect : \_\_\_\_\_

- Number of Air Brake System defects found : \_\_\_\_\_

#### PENALTIES

- Air Brake System not returned to original status : \_\_\_\_\_

(excluding planted defects)

- Improper use of tools/test equipment : \_\_\_\_\_

- Safety violation(s) : \_\_\_\_\_

#### TIE BRAKER

- Elapsed time for electrical defect portion event

\_\_\_\_\_ : \_\_\_\_\_  
minutes seconds

#### Calculations

If yes, add 50 = \_\_\_\_\_

X 50 = \_\_\_\_\_

If yes, deduct 10 = \_\_\_\_\_

If yes, deduct 10 = \_\_\_\_\_

X 10 = \_\_\_\_\_

Points Earned

Points Deducted

Final Score

(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

Team Name

Bus Number

## THERMO KING HVAC INTELLIGIAIRE EVENT MAINTENANCE

- Identify, record, and correct one (1) disabling defect.
- Identify and record five (5) other defects.
- Record and identify all logged alarm code(s).

### POINTS EARNED

- Disabling defect found and corrected : \_\_\_\_\_
- Number of planted defects found : \_\_\_\_\_
- Record & identify all logged alarm code(s) : \_\_\_\_\_

### PENALTIES

- A/C unit & simulator not returned to original status : \_\_\_\_\_  
(excluding planted defects)
- Improper use of tools/test equipment : \_\_\_\_\_
- Safety violation(s) : \_\_\_\_\_

### TIE BRAKER

- Elapsed time for HVAC event \_\_\_\_\_ : \_\_\_\_\_  
*minutes* *seconds*

### Calculations

If yes, add 50 = \_\_\_\_\_

X 50 = \_\_\_\_\_

If yes, add 50 = \_\_\_\_\_

If yes, deduct 10 = \_\_\_\_\_

If yes, deduct 10 = \_\_\_\_\_

X 10 = \_\_\_\_\_

Points Earned

Points Deducted

**Final Score**  
(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

Team Name

Bus Number

## MCI/NEW FLYER MULTIPLEX EVENT MAINTENANCE

- Identify and record 7 planted multiplex defects.

### POINTS EARNED

- Number of planted defects found : \_\_\_\_\_

### PENALTIES

- Improper use of tools/test equipment : \_\_\_\_\_

- Safety violation(s) : \_\_\_\_\_

### TIE BRAKER

- Elapsed time to complete event \_\_\_\_\_ : \_\_\_\_\_  
minutes seconds

### Calculations

X 50 = \_\_\_\_\_

If yes, deduct 10 = \_\_\_\_\_

X 10 = \_\_\_\_\_

Points Earned

Points Deducted

**Final Score**  
(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_



Team Name

Bus Number

## VAPOR DOOR EVENT

### MAINTENANCE

- Identify and record 7 planted door defects.

#### POINTS EARNED

- Number of planted defects found : \_\_\_\_\_

#### PENALTIES

- Improper use of tools/test equipment : \_\_\_\_\_
- Safety violation(s) : \_\_\_\_\_

#### TIE BRAKER

- Elapsed time for door event \_\_\_\_\_ : \_\_\_\_\_  
*minutes* *seconds*

#### Calculations

$$X \ 50 \ = \ \underline{\hspace{2cm}}$$

If yes, deduct 10 = \_\_\_\_\_

$$X \ 10 \ = \ \underline{\hspace{2cm}}$$

Points Earned

Points Deducted

**Final Score**  
(No less than 0)

Judge's Name: \_\_\_\_\_

Judge's Initials: \_\_\_\_\_

Course Expert's Name: \_\_\_\_\_

Course Expert's Initials: \_\_\_\_\_

## 2025 INTERNATIONAL BUS ROADEO COMMITTEE (as of 2/5/25)

---

**Markey, Brian D., Chair**

President

Custom Training Aids, Inc.

**Aragon, Dietter**

Director of Operations

OMNITRANS

**Loza, Gil, Vice-Chair Operations**

Operations Supervisor

Trinity Metro

**Arojo, Ayodeji**

Chief Operating Officer

Metro Transit

**Garcia, Ted E., Vice-Chair Maintenance**

Project Manager, Vehicle Maintenance

Capital Metropolitan Transportation Authority

**Atwood, III, Homer**

Technical Training Instructor

New Flyer of America

**Reed, Vicky, Secretary**

Assistant Transportation Manager

OMNITRANS

**Babin, Steven**

Regional Service Project Manager - Southeast

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**Acevedo, Rafael**

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LYNX

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Florida Public Transportation Association

**Aguilera, Hector**

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**Barnes, Craig**

Senior Route Planner

Victor Valley Transit Authority

**Aguirre, Joel**

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Central Ohio Transit Authority

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MTA New York City Transit

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San Francisco Municipal Transportation Agency

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Community Transit

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Allison Transmission, Inc.

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AC Transit (Alameda-Contra Costa Transit  
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MAN Engines & Components Inc.

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**Jones, Napoleon**

Retired  
Napoleon Jones

**Jones, Forrest**

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VP Fraser Gauge  
Fraser Gauge

**Lawrence, Trista**

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**Lewis, Stanley**

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OMNITRANS

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& Security  
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3-2-1 Transit Logic

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**Nass, TJ**

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**Nicolosi, Areca D'Nese**

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City of Santa Monica's Department of  
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Montgomery County Government

**O'Neal, Phillip**

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Capital Metropolitan Transportation Authority

**Osorio, Santiago Efrain**

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**Parker III, Ralph**

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**Parsons, Todd R.**

Learning & Development Facilitator  
Center for Urban Transportation  
Research/College of  
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**Perkins, Shawntia Nadine**

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**Platero, Rodrigo**

Section Manger III  
Orange County Transportation  
Authority

**Poteat, Jason Scott**

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Inspection and Assessments  
WSP

**Povinelli, Michael**

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Allison Transmission, Inc.

**Pretty, Eric**

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**Priddy, Jeremy**

Executive Communications Manager  
Transit Authority of River City (TARC)

**Quinn, Tammy L.**  
Program Manager  
Capital Metropolitan Transportation Authority

**Ramirez, Robert**  
Bus Account Executive, Southern Region  
Cummins Inc.

**Reeves, Andrew**  
Training Supervisor  
Kansas City Area Transportation Authority

**Reinhardt, Bryce James**  
Maintenance Training Coordinator  
Intercity Transit

**Remshifski, Robert**  
Technical Trainer  
Motor Coach Industries

**Remtulla, Shah N.**  
Regional Sales Manager  
Complete Coach Works

**Rivera, Wilfredo**  
Superintendent  
MTA New York City Transit

**Rivers, Esther**  
Manager, Service Management  
North County Transit District

**Rivetti, Jr., Donald**  
Chief Operating Officer – Maintenance  
Pittsburgh Regional Transit (PRT)

**Roberts, John**  
Maintenance Instructor  
San Mateo County Transit District (SamTrans)

**Robey, Brian**  
Transit Operations Supervisor  
Alexandria Transit Company

**Rocha, Juan Ricardo**  
Parts Manager  
WeGo Public Transit

**Rodman, Charles (Chuck)**  
Technical Sales Manager, The Byk-Rak  
Midwest Bus Corporation

**Rodriguez, Manuel**  
Assistant General Superintendent  
MTA New York City Transit

**Rodriguez, Mario**  
Fleet Foreman  
VIA Metropolitan Transit

**Rokos, Carl J.**  
Director of Maintenance  
WeGo Public Transit

**Rozier, Leda Melara**  
Sr. Operations Manager (Rail and Bus)  
San Francisco Municipal Transportation Agency

**Ruthven, Rob**  
Eastern Regional Sales and Service  
Manager, Commercial Vehicles  
Voith Turbo

**Ryall, John**  
Specialty Glazing Leader  
SABIC Functional Forms

**Salas, Ruben**  
Assistant Vice President of Bus Maintenance  
Trinity Metro

**Salcido, Anthony**  
Manager  
Los Angeles County Metropolitan  
Transportation Authority

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GILLIG LLC

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Chicago Transit Authority

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**Showkatian, Ali**

Director of Customer Service and  
Operations  
Foothill Transit

**Shuey, Denton**

Altro Transflor

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**NOTES**

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