

# TENNESSEE PUBLIC TRANSPORTATION ASSOCIATION



## 2023 MAINTENANCE ROADEO HANDBOOK

## **A. General Information.**

1. The TPTA Maintenance Roadeo will be held during the 2023 Tennessee Public Transportation Association Annual Conference in Memphis on Thursday, September 21, 2023.
2. The maintenance roadeo is a competition designed for individual mechanics to compete against other mechanics from both urban and rural transit systems across the State. This event promotes friendly competition and an opportunity for mechanics to meet their peers in sister transit systems, exchange information and make new friends.
3. There will be two competition categories. Mechanics may only compete in one of the two categories, not both.
  - a. Van — designed primarily for the rural systems who maintain light-duty cutaway van vehicles.
  - b. Bus — designed for urban systems who maintain heavy-duty transit buses.
4. Van competition events will be based upon a late model Ford E-350 or E-450 chassis cutaway and Ford Transit gasoline engine.
5. The van competition will consist of four individual events.

Written test, Engine defects/no start, ThermoKing air conditioning event, and P.M. Event.
6. Bus competition events will be based on a heavy-duty bus and heavy-duty bus components.
7. The bus competition will consist of four individual events  
Written test, I/O Control Event, Engine defects/no start, and P.M. Event.
8. Transit systems must register their mechanics individually for the maintenance roadeo via the TPTA conference registration page at [www.tntransit.org](http://www.tntransit.org)
9. Contestants must arrive on time and participate in the mechanic orientation meeting which will be held at the beginning of Tuesday's 1:00 to 5:00 PM mechanic training sessions (Combined training classes this year, (ThermoKing air conditioning training , Vapor Pneumatic door systems training, Cummins training)
10. The first competition event, the written test, will occur at the beginning of the Maintenance Roadeo.
11. Mechanics late for scheduled maintenance roadeo events are subject to disqualification.
12. Each contestant must bring and wear safety glasses and appropriate footwear during the competition on Thursday.
13. Contestants please provide your own hearing protection which will be subject to examination by assistant judges to insure they meet safety requirements.
14. During events, each contestant will be supplied a clipboard, forms/paper, pencil, flashlight, rags, required vehicle keys (van ignition key, bus T-key), necessary tools and test equipment.
15. Contestants will incur penalties whenever using tools/test equipment improperly and/or violate safety rules.
16. Abbreviations used in the transit maintenance industry are allowed to be entered on forms/paper as long as they are understandable to the judges.
17. When listing defects, write legibly. Sheets mechanics fill out during the competition will be the primary means by which scoring judges will score each competitor. Always have the event judge review your event sheet for clarification before leaving each event.
18. On roadeo competition day, contestants may not watch or be in the immediate vicinity of the performance events either before or after competing. All contestants will, instead, remain in designated holding areas both before and after they compete.
19. All performance events will be judged by vendors (scoring judges) attending and supporting the conference. No Maintenance Alliance member will serve in a scoring judge capacity; they shall only serve as assistant judges to provide logistical assistance and ensure the vehicle/device is re-set and prepared for the next competitor.
20. The performance events will be organized "round-robin" style where mechanics will compete in an event and then rotate to the next performance event.
21. A maintenance roadeo site timekeeper will sound a horn when event timing begins and ends. All performance (hands-on) events are ten (10) minutes in duration.

- 22. During performance events, contestants should record all identified defects. Only planted defects, however, will count for scoring.
- 23. If two mechanics in the same category reach a tie for first, second or third placement, the maintenance alliance members will determine a fair competitive means of breaking the tie.
- 24. Scoring placements for trophy awards include first place, second place, and third place in both the bus and van categories. Additionally, a separate recognition award for the bus and van category will be presented to the bus van mechanic who successfully starts the engine in the shortest time during engine malfunction event.

## **B. Competition Events.**

**The Competition will consist of four (4) events for Van and four (4) events for bus. Those events will be as follows:**

**Van:**

- 1. Written Test**
- 2. Engine Malfunction Event**
- 3. ThermoKing Air Conditioning Event**
- 4. PM Inspection Event**

**Bus:**

- 1. Written Test**
- 2. Engine Malfunction Event**
- 3. I/O Control Event**
- 4. PM Inspection Event**

### **Event Descriptions:**

#### **1. Written test event (Bus & Van categories).**

- a. Each competitor will take a written test at the beginning of the competition.
- b. Written tests are ASE derived tests and will consist of fifty (50) questions.
- c. Time limits for the written test is thirty (30) minutes.
- d. Questions will be multiple choice, true/false or a combination there of.
- e. Each question is worth two (2) points for a possible total of 100 points.

#### **2. Engine malfunction event (Bus & Van category).**

- a. The van engine defect event will be performed on a Ford V-10 gasoline engine. The bus engine defect event will be performed on a late model Cummins ISL9 or ISB diesel engine.
- b. Five (5) defects or problems related to engine malfunctions are planted, one of which prevents the engine from starting or running properly.
- c. The contestant may attempt to start the vehicle at any time to check for defects.
- d. Ten (10) minutes are allotted to inspect, identify deficiencies, trouble shoot, diagnose, correct and start the engine.
- e. Note the elapsed time taken to locate the defect that prevents the engine from starting will be maintained by a separate event judge. Once the contestant starts the engine, that time will be recorded. There will be a separate engine start award and also the best elapsed time will be used in the case of a placement tie.
- f. Twenty (20) points are awarded for each defect found. The defect that prevents the engine from starting or running properly must be identified **and** corrected **and** the engine started to receive 20 points. A total of 100 points is possible for the event.
- g. A penalty of five (5) points will be assessed for each incident of unsafe practice and each incident of improperly using a tool during the event.

### **3. ThermoKing Air Conditioning Event (Van category).**

- a. The event will be conducted utilizing a Ford Transit with a ThermoKing rear air conditioning.
- b. Five (5) defects are planted and must be identified and recorded on the blank form provided. The contestant will be told by the judge on site if any defects exist that require correction/repair in order to receive points.
- c. Twenty (20) points are allotted for each defect for a total of 100 points possible for the event.
- d. A penalty of five (5) points will be assessed for each incident of unsafe practice and each incident of improperly using a tool during the event.

### **4. Preventative Maintenance Inspection (Bus and Van)**

- a. The van PM event will be conducted on a Ford Transit.
- b. The bus PM event will be conducted on a late model Gillig Low Floor diesel or hybrid bus.
- c. Ten (10) equipment related equipment defects are planted on the vehicle. Defects are of a type that a mechanic should find during a routine P.M. inspection.
- d. Ten (10) minutes are allotted to inspect and identify defects.
- e. Defects will render the vehicle operationally unfit/and or operationally in a degraded state.
- f. The mechanic will list all defects identified on the blank form provided by the judge within the allotted ten(10) minute time period.
- g. Identification of defects does not require crawling under the vehicle.
- h. Ten (10) points shall be awarded for each planted defect found. Maximum of 100 possible points.
- i. Immediately following the event, the scoring judge will review the contestants list of defects for clarification.
- j. All components must be returned to their original condition, for example compartment doors, rotary ignition switch, lights, wipers etc. Two penalty points will be assessed for Each component not returned to its original position.
- k. A penalty of five (5) points will be assessed for each incident of unsafe practice and each incident of improperly using a tool during the vehicle inspection.

### **5. I/O Control Event (Bus category).**

- a. The event will be conducted using a I/O Control in a late model Gillig Low Floor transit bus.
- b. Five (5) I/O control defects are planted and must be identified and recorded on the blank form provided. The contestant will be told by the judge on site if any defects exist that require correction/repair in order to receive points.
- c. Ten (10) minutes is allotted to troubleshoot, identify problems and, if required, correct.
- d. Twenty (20) points are allotted for each defect for a total of 100 points for the event.
- e. A penalty of five (5) points will be assessed for each incident of unsafe practice and each incident of improperly using a tool during the vehicle inspection.

For all events, an event timekeeper will maintain a stopwatch and announce time warnings at two (2) minutes, one (1) minute, and 30 seconds remaining for the event.

**TPTA MAINTENANCE ROADEO  
PERFORMANCE EVENT SCORE SHEET**

**VAN CATEGORY**

**Mechanic Name:** \_\_\_\_\_ **Transit System:** \_\_\_\_\_

**A. Points Earned**

**PM Inspection Event:**

Number of planted defects identified: \_\_\_\_\_ X 10 = \_\_\_\_\_

**Engine Malfunction Event:**

Number of planted defects found/corrected: \_\_\_\_\_ X 20 = \_\_\_\_\_

**Elapsed Time to Start Engine:** \_\_\_\_\_

**ThermoKing air conditioning event:**

Number of planted defects found/corrected: \_\_\_\_\_ X 20 = \_\_\_\_\_

**Total Points Earned**

**B. Penalties**

**Unsafe practices:**

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

**Improper use of tool(s):**

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

**Total Penalty Points**

**TOTAL INDIVIDUAL SCORE (Points Earned Minus Penalty Points):**

**Judge Signature:** \_\_\_\_\_

**TPTA MAINTENANCE ROADEO  
PERFORMANCE EVENT SCORE SHEET**

**BUS CATEGORY**

**Mechanic Name:** \_\_\_\_\_ **Transit System:** \_\_\_\_\_

**A. Points Earned**

**I/O Control Event:**

**Number of planted defects identified:** \_\_\_\_\_ X 20 = \_\_\_\_\_

**P.M. Inspection Event:**

**Number of planted defects found/corrected:** \_\_\_\_\_ X 10 = \_\_\_\_\_

**Engine Defect Event:**

**Number of planted defects found/corrected:** \_\_\_\_\_ X 20 = \_\_\_\_\_

**Total Points Earned**

**B. Penalties**

**Unsafe Practices:**

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

**Improper Use of Tool(s):**

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

**Total Penalty Points**

**TOTAL INDIVIDUAL SCORE (Points Earned Minus Penalty Points):**

**Judge Signature:** \_\_\_\_\_