

**2019
TENNESSEE PUBLIC
TRANSPORTATION ASSOCIATION**

**MAINTENANCE ROADEO
HANDBOOK**



A. General Information.

1. The TPTA Maintenance Roadeo will be held during the 2019 Tennessee Public Transportation Association Annual Conference in Chattanooga on Wednesday, October 30, 2019.

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 V-10 gasoline engine.

5. The van competition will consist of four individual events. 1) Written test, 2) Engine malfunction, 3) Wheel-chair lift, and 4) HVAC system.

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 – 1) Written test, 2) HVAC system, 3) Passenger door and 4) Brake system.

8. Transit systems must register their mechanics individually for the maintenance roadeo via the TPTA conference registration page at www.tntransit.org.

9. Contestants must arrive on time and participate in the mechanic orientation meeting which will be held on at the end of Tuesday afternoon's 1:30 to 4:30 PM mechanic training sessions (Ford V-10 training for van contestants; brake system training for bus contestants).

10. The first competition event, the written test, will occur at the end of each respective mechanic training session during the conference. The test material will be based on the training session subject matter provided by the respective vendor (ThermoKing, ACC, Meritor, Ford, etc.).

11. Mechanics late for scheduled maintenance roadeo events are subject to disqualification.

12. Each contestant must bring and wear safety glasses and appropriate foot wear during the competition on Thursday.

13. Hearing protection will be provided at the van engine event. Failure to wear hearing protection during the Ford engine event will count against contestants as a safety violation. Contestants may provide their 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.

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 time-keeper 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 van category will be presented to van mechanic who successfully starts the engine in the shortest time during engine malfunction event.

B. Competition Events.

1. Written test event (van & bus categories).

a. Each competitor will take a written test at the end of vendor provided training on Monday and Tuesday of the Conference.

b. All Vendor provided tests for each category (van and bus) will be consolidated and provided to select UTMA representatives.

c. The combined tests, should all questions be answered correctly, will total 100 points for the maintenance roadeo written test event.

2. Engine malfunction event (van category).

a. The van engine defect event will be performed on a Ford V-10 gasoline 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 is allotted to inspect, identify deficiencies, trouble shoot, diagnose, correct and start the engine.

e. 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 to receive 20 points. A total of 100 points is possible for the event.

f. 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.

g. An event time keeper will maintain a stop-watch and announce time warnings at two (2) minutes, one (1) minute, and 30 seconds remaining for the event.

3. Braun wheelchair lift event (van category).

a. The event will be conducted utilizing a cutaway provided by Alliance Bus Group with a Braun Century wheelchair Lift.

b. Five (5) defects are planted, one of which will render the lift inoperable. The mechanic must record all defects found on the blank form provided and demonstrate the lift operates.

c. Twenty (20) points are awarded for each defect for a total of 100 points for the event. The defect that prevents the lift from operating must be identified **and** repaired to receive 20 points for that defect.

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. ACC Air Conditioner (van category) and ThermoKing Air Conditioning Unit (bus category).

a. The event will be conducted using fully functioning ThermoKing Intelligair III (bus) and ACC (van) mock-ups. All components of each mock-up system will be functional.

b. Five (5) defects or problems related to the A/C not working properly are planted.

- c. Ten (10) minutes is allotted to troubleshoot and identify problems keeping the air conditioning systems from operating properly.
- d. Twenty (20) points are awarded for each defect identified 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.

5. Vapor door system event (bus category).

- a. The event will be conducted utilizing a Gillig lowfloor bus with vapor door system.
- b. Five (5) defects or problems related to the bus vapor passenger door system not working properly are planted.
- c. Ten (10) minutes is allotted to inspect and identify defects. The defect that causes the door system to not properly operate must be corrected.
- d. Twenty (20) points are awarded for each defect identified. The defect that prevents the vapor door system from not operating properly must be identified **and** corrected to receive 20 points. A total of 100 points is possible 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 event.
- f. All vapor door system access panels shall remain open for this event. No penalty shall be assessed if panels are not closed by the competing mechanic.

6. Transit Bendix air brake system event (bus category).

- a. The event will be conducted using a fully functioning air brake demonstration board. All components of the system will be functional.
- b. Five (5) defects or problems related to brakes not working properly are planted.
- c. Fifteen (10) minutes is allotted to troubleshoot and repair the air brake system placing it in an operational condition.
- d. Twenty (20) points are awarded for each defect found and corrected 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.

TPTA MAINTENANCE ROADEO
PERFORMANCE EVENT SCORE SHEET

VAN CATEGORY

Mechanic Name: _____ Transit System: _____

A. Points Earned

ACC HVAC Event:

Number of planted defects identified: _____ x 20 = _____

Engine Malfunction Event:

Number of planted defects found/corrected: _____ x 20 = _____

Elapsed Time To Start Engine: _____

Braun WC Lift 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

ThermoKing HVAC Event:

Number of planted defects identified: _____ x 20 = _____

Vapor Door Event:

Number of planted defects found/corrected: _____ x 20 = _____

Brake System 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: _____