



# APTA BUS MAINTENANCE MANAGERS WORKSHOP

## APTA MOBILITY CONFERENCE

Monday April 24, 2023

Minneapolis, MN

### PROGRAM

*Organized by APTA Bus Technical Maintenance Committee officers Jerry Guaracino, Chair; Obed Mejia, Vice Chair; Geoff Lawrence, Secretary. APTA staff: Lisa Jerram, Tdisho Pendleton.*

**8:00 am**                      **Breakfast**

**8:30 am**                      **Welcome**  
**Jerry Guaracino**, Chair, APTA Bus Technical Maintenance Committee;  
Chief Engineer, WMATA

*Session Moderators: **Jerry Guaracino** and **Obed Mejia** (Senior Bus Equipment Maintenance Instructor, LA Metro)*

#### **Session 1:**

**9:00 - 10:00 am**            **ZEB Maintenance 101: Basic Operation of Fuel Cell and Battery Electric Buses**  
As the transition to zero emission buses (ZEBs) gets underway, some agencies may procure a combination of both battery electric and fuel cell electric buses. Learn the operation of each and the differences between these technologies.

*Presenter 1: James Hall, Program Manager, Technical Training, International Transportation Learning Center*

- *Battery electric bus operation*
- *Outline of components and their operation*
- *Charging*
- *Potential Issues*

*Presenter 2: Michael McDonald, Ph.D., Operations Manager, Vehicle Innovation Center, New Flyer*

- *Fuel cell bus operation*
- *Outline of components and their operation*
- *Fueling*
- *Potential Issues*

**10:00 am**                      **Break**



## **Session 2:**

**10:15 - 11:15 am**

### **ZEB Maintenance 102: Maintenance Infrastructure**

The equipment and shop infrastructure needed to work on ZEBs will change as you deploy these buses. Specific ZEB bays, Arc Rated fall arrest, insulated tools, and much more will become the norm in the maintenance shop. In this session learn what you need to do in preparation to maintain these buses.

*Presenter 1: Tabin Hinck, Fleet Service Supervisor, Metro Transit*

- *Tooling for employees*
- *Special tooling needed for component removal*

*Presenter 2: Bill Tonis, Director of Business Sciences, AC Transit*

- *Shop modifications such as designated bays, catwalks, fall arrest*
- *How we set up our shop*

**11:15 am – 1:00 pm    APTA BUS DISPLAY & LUNCH**

Buses will be on display for your inspection, and manufacturers' representatives will be on hand to discuss their products and answer your questions. Lunch provided.

## **Session 3:**

**1:00 - 2:00 pm**

### **ZEB Maintenance 103: Employee Safety and Training**

When it comes to safety and training for the high voltage systems of ZEBs, it is not business as usual. The regulatory and safety requirements established to safely maintain and diagnose these buses is much different than past practices. It's important that mechanics who work on ZEBs are specially trained. In this session learn about the regulatory training and personal protective equipment required to safely maintain these buses.

*Presenter: Michael Marks, King County Transit*

- *Regulatory requirements (OSHA/NFPA)*
- *Training requirements*
- *PPE and shop equipment*

**2:00 pm**

**Break**



#### **Session 4:**

**2:15 - 3:30 pm**

#### **ZEB Maintenance 104: Preventive Maintenance Practices**

Unlike diesel or CNG buses, ZEBs have electrical systems and components with specific inspection intervals and check procedures. For these inspections, developing standardized procedures and training is critical to ensuring buses are properly maintained and employees are safe. In this session learn what inspection can be performed by a regular mechanic and what inspection areas require specific processes and training.

*Presenters: Jeremiah Riter, Metro Transit; Obed Mejia, LA Metro; Mike Brock, Immersed Technologies*

##### *General Maintenance Practices*

- *Cover the 6000-mile inspection items*
- *Training requirements*

##### *Propulsion System Inspection on BEB and FCE Bus*

- *Propulsion system inspection process*
- *Forms or documentation*
- *Training requirements*

**3:30-3:45 pm**

Adjourn / Networking

**4:00-5:00 pm**

Main Conference Session: Federal Transit Administration Update

#### **HOW TO ATTEND:**

**To attend ONLY the Maintenance Managers Workshop:** Fee is \$650 for access to the workshop, which includes breakfast, lunch and access to the Bus Display. Register here: [https://s6.goeshow.com/apta/mc/2023/register\\_now.cfm](https://s6.goeshow.com/apta/mc/2023/register_now.cfm)

**If you are registered for the Mobility Conference,** you are welcome to attend this workshop as part of your conference registration. If you can, please RSVP with Tdisho Pendleton at [tpendleton@apta.com](mailto:tpendleton@apta.com) so we can be sure to accommodate everyone. **RSVP** Full conference details including registration can be [found here](#).

Questions? Please contact Tdisho Pendleton at [tpendleton@apta.com](mailto:tpendleton@apta.com)