

Dallas Oak Cliff: Brookville's first delivery of a modern streetcar and use of off-wire technology

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BROOKVILLE - From PCC Restorations to Modern Streetcar Innovations



- 2001-2012, BROOKVILLE delivers PCC restorations, heritage replicas, and propulsion kits/truck sets
- New Orleans, Philadelphia, San Francisco, Disney
- Experience with modern systems and integration on classic vehicles

American Cities Seek Modern Streetcars

- Trend in the market for Modern Articulated Streetcars
- Leverage our knowledge in modern systems (propulsion, HVAC, Doors, trucks, etc.) and package into a modern platform – Liberty Streetcar
- Structural and aesthetic design completed at BROOKVILLE



Liberty Platform

- Brookville introduced its Liberty Streetcar to the market in 2012
- Designed to fit in “legacy” modern systems such as Portland & Seattle
- Similar operating envelope
- Two carbody widths – narrow & wide



BROOKVILLE – Liberty Streetcar

- Other Key Features
 - 70% low floor area
 - Sleek, modern design
 - Designed & Manufactured in the USA
 - Passenger Amenities (WiFi, Bike Racks, Station Level Boarding)



Dallas Oak Cliff Streetcar



- Dallas / DART two initial vehicles for 1.6-mile Oak Cliff Streetcar
- Grassroots movement
- Connect urban neighborhood to downtown Union Station (Light Rail, Amtrak, Commuter Rail, Bus)
- Extended 0.8 miles (2.4 miles total) to serve Bishop Arts District
- OESS is sized to fit future off-wire segments on Dallas alignment

BROOKVILLE - OESS



- Dallas – Needed to cross 1-mile Houston Street Viaduct without using OCS
- BROOKVILLE – Battery management systems in trolley/battery rail equipment since 1990s

BROOKVILLE - OESS



- Two Lithium-ion battery trays – redundant system
- OESS acts as power source while off-wire
- VCU constantly monitors OESS system

BROOKVILLE – OESS Success



- Lessons Learned
 - Changeover speed
 - Automatic changeover vs. Operator changeover
 - Conservative simulations lead to better performance

BROOKVILLE – OESS Success



- Dallas success = new opportunities for U.S. Cities
- Detroit Opened May 12, 2017 – 6 Liberty Vehicles (60% off-wire over 6.6 miles of track)

BROOKVILLE – OESS Success



- Upcoming Off-Wire Systems: OKC, Milwaukee, & Tempe
- Other Current/Future Off-wire alignments: Seattle, Charlotte, Sacramento, Ft Lauderdale

Key Presentation Take-Aways

- Dallas Oak Cliff Streetcar opened March 2015
- Vehicles running 2 miles off-wire
- Cities appear to need/desire ESS technology
- Safe, reliable, proven ESS system available
- Multiple power scenarios (charge bars, OCS, super caps, batteries)
- Flexible on / off-wire actuation with TWC, GPS, operator-controlled, etc.