

# National Bus Trader

The Magazine of Bus Equipment for the United States and Canada

Volume XLVI, No. 1

December, 2022

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- Fire Risks Associated With EVs and HEVs
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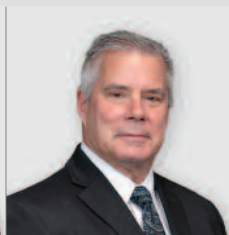
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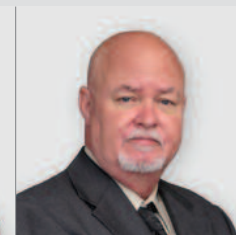
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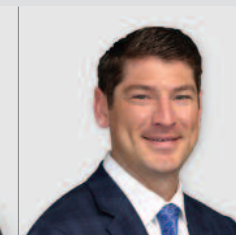
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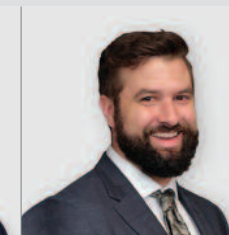
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# National Bus Trader

The Magazine of Bus Equipment for the United States and Canada

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## Features



**Cyr Bus Line Celebrates 110 Years**  
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2022 marks the 110th anniversary of Cyr Bus Line. Headquartered in Old Town, Maine, Cyr Bus Line, operating both coaches and school buses, is one of the most respected operators in the industry.



**The New Fire Risks Associated with EVs and HEVs**  
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**Thrasher Brothers Celebrating 50 Years**  
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## Cover Photo

Founded in Old Town, Maine in 1912 by 53-year-old John T. Cyr and his oldest son as John T. Cyr and Sons, Cyr Bus Line celebrates 110 years in 2022. Operating coaches and school buses, the company is one of the more respected members of the bus industry. See the article on page 20 for more information. CYR BUS LINE.

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## CONTRIBUTORS

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Ned Einstein

Dave Millhouser

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# Equipment News

## Tips for Cold Weather from MCI

"Inspections are an integral part of a preventative maintenance program to ensure your coaches run smoothly in every season," says William Pfeifer, technical solutions manager, MCI.

Follow MCI's maintenance "to-do" list to keep things running smoothly when the weather is not.

- Keep coolant mixture strength and pH levels as specified by the coolant manufacturer.
- Pressurize the engine cooling system and check for leaks. Cooling systems may develop "cold water leaks" at lower temperatures.
- Check the main blower, defroster motors, brushes and amperage draws.
- Unclog heater cores if needed and clean or replace air filters.
- Clean battery posts and check water levels for the proper state of charge.
- Verify that all electrical cable connections are tight and corrosion free. Apply protective coating to prevent corrosion.
- Inspect engine and lavatory holding tank immersion heaters and connections.
- Make sure the windshield washer solvent is at the right concentration level to prevent freezing.
- Turn off the windshield wipers to ensure the motor and washer are operating properly and look for cracking rubber on the wiper blades to determine if replacements are needed.



With the cold winter weather upon us once again, extra attention must be paid to make sure that your buses run smoothly. Here is a list of suggestions from MCI on what to do and look for to keep your fleet running in this season. Paying attention to these tips will improve reliability on the road for your buses.

- Replace cracked or chipped windshields.
- Install valve stem caps on all tires and keep tire pressure at recommended levels.
- Refer to auxiliary heater maintenance manuals for pre-winter preparation instructions.

- Inspect the spare tire and fire extinguisher and keep a belt and bulb kit on board.

Heeding these tips helps to improve reliability on the road and maintain the longevity of your coach. If you need maintenance assistance, contact your nearest MCI Service Center, which can provide service, parts and warranty work to complete coach refurbishing by MCI-training technicians.

For technical or emergency roadside assistance, MCI stands alongside you 24/7 at (800) 241-2947.

## Bidirectional Electric Vehicle Charging

A new project funded by the California Energy Commission (CEC) will demonstrate the value of bidirectional electric vehicle charging to support a first-of-its-kind vehicle-to-building (V2B) resilience hub. This groundbreaking project will leverage stored energy from zero-emission electric buses, owned and operated by AC Transit, to provide filtered air conditioning at the West Oakland Branch of the Oakland Public Library for local residents in the event of unhealthy heat or smoke conditions. CEC's Electric Program Investment Charge program awarded the project \$3.2 million in funding, with combined \$400,000 in matching funds

In addition to transporting passengers, electric buses can also serve as a portable energy source. The California Energy Commission is experimenting with using battery power from AC Transit buses to power the air conditioning at a branch of the Oakland Public Library. Each battery bus will be able to contribute six hours of backup power for this project while the hydrogen fuel cell buses will be able to provide 11 hours of backup power.





## Equipment News

contributed by West Oakland Environmental Indicators Project (WOEIP) and AC Transit. This pilot study is known locally as “V2B Oakland” and will be executed by a powerhouse green energy project team: Center for Transportation and the Environment (CTE), the Mobility House, AC Transit, New Flyer, Schneider Electric, City of Oakland and WOEIP.

Each battery-electric bus (BEB) will contribute six hours of backup power to the critical loads at the library, and each hydrogen fuel cell-electric bus (FCEB) will provide up to 11 continuous hours of backup power, displacing nearly 100 pounds of carbon emissions per hour compared to traditional diesel backup generators. Working in close coordination with bus manufacturer New Flyer of America Inc. (New Flyer), a subsidiary of NFI Group Inc. (NFI), this project also marks the first time a U.S. transit agency will have the capability to use a hydrogen vehicle for V2B backup power.

“Initiating the first community resilience hub powered by a bidirectional V2B charging system has been an incredible journey. By bringing together leading-edge technological innovation and sustainability, we are able to offer much needed emergency response benefits for both transit agencies and communities,” said Jason Hanlin, director of technology research at CTE. “For a project with so many key players, we are excited to apply CTE’s proven project management approach to usher this novel project from concept to fruition.”

The resilient backup power system, which combines Bus Exportable Power Supply (BEPS) capability with bidirectional

chargers and smart software, will be integrated and tested at NFI’s Hayward facility, then deployed at an AC Transit bus division and the Oakland Library. The system is designed to power the library’s upgraded HVAC and air filtration system, providing clean air and electricity inside the building to create a public shelter during emergencies and outages.

“We are thrilled to bring our ‘vehicle-to-everything’ expertise from numerous projects in Europe and Asia to now develop the first ever vehicle-to-building resilience hub in the U.S.,” said The Mobility House U.S. Managing Director Gregor Hintler. “Our ChargePilot system ensures all transit mobility needs are met and orchestrates the charge and discharge of the bidirectional chargers so that the buses can power critical building loads.”

Electric-drive bus fleets are uniquely suited for backup power and emergency relief because of their energy storage capacity, electrical architecture, independent mobility and ability to be quickly dispatched. When compared to diesel generators – the current default technology for emergency backup power – BEPS provides quicker response times, avoids emission of harmful pollutants, can be more cost-effective and increases the value of procuring zero-emission vehicles and chargers by providing community support benefits.

“Powering emergency shelters with islanded energy supply is an innovative feat we are honored to help facilitate,” said Jana Gerber, president of Microgrids North America at Schneider Electric. “It is also exciting to demonstrate how different technologies

can integrate with each other so seamlessly and intelligently to allow for crucial backup power for the community and infrastructure.”

“Unquestionably, delivering reliable public transit service to nearly 22 million annual riders is our highest priority, but we also pursue partnerships and initiatives that advance zero emissions technology,” said AC Transit General Manager Michel Hursh. “V2B is one example of a zero emission program that permits us to leverage our resources to enhance the resiliency and emergency preparedness of the diverse communities we’ve served for the past 60 years.”

“NFI is proud to work with AC Transit and our other partners on this exciting project that enables our vehicles to act as generators supporting resiliency and emergency preparedness. This platform, the first vehicle-to-everything fuel cell-electric bus in the world, will change the game for electric propulsion technology and will vastly expand the capabilities and utility of our mobility solutions,” said Paul Soubry, president and chief executive officer, NFI.

“Many low-income communities of color share streets and fence lines with the freight industry and suffer deadly pollution from petroleum combustion. With our electrical grids straining under the demands of global warming and solar and wind not keeping pace with the urgent need, hydrogen may offer another tool in the toolbox of zero-emission freight transportation opportunities. Communities like West Oakland will benefit from an expanded set of transportation energy options by getting cleaner, safer streets and air quality,” stated Brian Beveridge, co-executive director of WOEIP.

Infrastructure is expected to be installed by mid-2023. Demonstration, analysis, evaluation and knowledge transfer for the pilot program will continue until July 2025.

### ECHO AFC Transportation Celebrates 30th Anniversary

ABC Companies, a leading provider of motorcoach, transit and specialty passenger transport equipment in the U.S. and Canada, continues to fulfill orders for 47 Van Hool CX45 motorcoaches in 2022 to ECHO AFC Transportation, as the full-service ground transportation and logistics management provider celebrates 30 years in business this month. ECHO AFC’s service area spans the state of Texas and parts of Florida and ongoing deliveries of new, custom-specified Van Hool models will be utilized to serve, attract and retain customers throughout the region.

From its inception in 1992, ECHO’s mantra “People Powered, Safety Driven,” has defined the brand, highlighting the oper-

Founded in 1992, ECHO AFC Transportation celebrates its 30th anniversary in 2022. ABC Companies is providing 47 Van Hool CX45 coaches to ECHO AFC in 2022. These new coaches feature leatherette seating, enclosed parcel racks, collision mitigation, security cameras, a reflective paint scheme and 360 camera systems.





## Equipment News

ator's number one goal of safety and dedicated customer service. "Recognizing the value that every member brings to our team is central to the company's culture," said John Ferrari, ECHO AFC president/CEO. "In conjunction with a continuous improvement mindset, we believe that our laser focus on elevating the customer experience has been essential to our success for the past 30 years. As we celebrate this major milestone, we are excited to expand our fleet with these current Van Hool models that enable us to offer all of the comforts, high performance, style and safety features that customers appreciate and expect when they travel with our operation."

The new Van Hool models include a number of passenger safety, comfort and signature ECHO AFC amenities such as full leatherette seating and enclosed parcel racks that provide a sleek interior look. The coaches also include a complement of integrated safety features including ACC/collision mitigation, interior security cameras and 360 camera systems all designed to ensure a seamless, luxurious and memorable passenger experience. Additionally, all new models feature a custom black on black reflective paint scheme that showcases the ECHO AFC brand, creating a cohesive and elegant signature look for the fleet.

"Consistency is key to our marketing and user-experience strategy," said Ferrari, "From the moment a passenger sees and then steps aboard any vehicle in our fleet,

they will experience the same look, feel and level of luxury and comfort. This focus on uniformity and dependability also extends to the hospitality and professionalism customers can expect when interacting with every member of the ECHO AFC staff." The new coaches will be used primarily for charter service with professional sports teams, as well as university athletics, public or private school charter field trips, sports, educational outings, youth group transportation and more.

"John and the entire ECHO AFC Transportation team emulate a passion for unparalleled customer service," said Brenda Wordelman, senior vice president midwest & southwest sales. "Their attitude and dedication parallels ABC Companies' own focus on providing an excellent customer experience, which may explain why this leader in ground transportation has been a loyal customer with ABC for 30+ years. We are grateful and excited to support ECHO AFC's continued growth for decades to come."

### **NYMTA Orders Five Battery-Electric Nova Buses**

Nova Bus, a member of the Volvo Group and a leading North American transit bus manufacturer, is delighted to announce it has been awarded a contract for five LFSe+, the 40-foot, long-range, 100 percent battery-electric bus model of Nova Bus, by the New York State Metropolitan Transportation Authority (MTA). The first delivery is expected by the fourth quarter of 2023. The

buses will be assembled at the Nova Bus facility in Plattsburgh, New York State.

This purchase is in line with the MTA's goal of transitioning its entire 5,800 bus fleet to zero-emission vehicles by 2040. All bus procurements will be exclusively zero-emissions by 2029. This order of five Nova Bus LFSe+ will support the MTA's transition by integrating a new electric bus model to its fleet.

The MTA operates the largest public transportation agency in North America, carrying 16 percent of all bus passengers. This year, it received \$116 million through the Federal Transit Administration's (FTA) Low or No Emission Grant Program to buy battery-electric buses to replace older diesel buses and launch a comprehensive workforce training and development program.

With an electric drive motor coupled with BAE Systems' next-generation power electronics focused on efficiency, the Nova Bus LFSe+ long-range electric bus provides reduced maintenance costs and eliminates all emission of pollutants and greenhouse gases. The LFSe+ is the perfect pairing of Nova Bus' proven expertise with the latest innovations in clean and sustainable technologies, making it a first-choice solution for the transition to sustainable public transport.

"We are delighted that our LFSe+ will be joining the growing MTA fleet of electric buses," said Martin Larose, president of Nova Bus. "The MTA is a long-standing partner of Nova Bus and we are thrilled to be part of its transition to electromobility, as well as humbled to be supporting its goal of reaching a zero-emission fleet by 2040. We are excited about the future and looking forward to every community benefiting from cleaner air thanks to zero-emission buses in New York."

### **Thomas Built Buses Celebrates 200th Proterra-Powered Electric School Bus Delivery**

Thomas Built Buses (TBB), a leading manufacturer of school buses in North America, has announced delivery the TBB's 200th Proterra-powered Saf-T-Liner C2 Jouley battery-electric school bus to Monroe County Public Schools in Indiana.

Monroe became the first county in the state to receive an electric school bus in fall 2020. Since then, the district has continued to grow its zero-emission fleet, ordering an additional two buses in 2021 and 10 buses in 2022.

"Our district is delighted to have received the 200th Jouley from TBB as we continue to lead electrification efforts for our students,

The New York State Metropolitan Transportation Authority recently ordered five LFSe+ 40-foot battery-electric buses from Nova Bus. MTA operates a fleet of 5,800 buses and is moving towards a fleet of zero-emission vehicles by 2040. The buses will be assembled at the Nova Bus facility in Plattsburgh, New York.





## Equipment News

staff and the larger Bloomington community,” said Dr. Jeff Hauswald, superintendent for

Monroe County Community School Corporation (MCCSC). “Beyond the long-term cost

savings benefits, converting our fleet also helps us meet safety and sustainability goals set forth by school administration, reducing CO<sub>2</sub> emissions by 27 tons and saving 1,080 gallons of diesel per bus in our fleet. With every additional bus we convert, we’re only adding to those numbers.”

Thomas Built Buses is celebrating the delivery of its 200th battery-electric school bus. This 200th bus was a Proterra-powered Saf-T-Liner C2 Jouley battery-electric school bus delivered to Monroe County Public Schools in Indiana. Monroe County became the first county in the state to operate electric school buses when they received their first in the fall of 2020.



This will be the sixth delivery of 13 electric school buses ordered by the district from Kerlin Bus Sales, a full-service TBB dealer in Indiana. MCCSC has committed to electrify all (approximately 85) primary bus routes by 2028, exclusively with Jouley electric buses from TBB. The district has been applauded for its strong electrification efforts, including recognition in the “Electric School Bus Fleet Award” by Drive Clean Indiana.

TBB's Safe-T-Liner C2 Jouley electric school bus is equipped with the same vehicle quality, durability, performance, safety and comfort as the popular Saf-T-Liner C2. Jouley is powered by Proterra electric vehicle technology and is equipped with 226 kilowatt hours (kWh) of total energy capacity in a Proterra-powered battery system, a two-speed transmission and an estimated operating range of up to 138 miles. Thomas Built Buses is currently the only school bus manufacturer to offer DC (direct current) fast

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## Equipment News



MCI recently delivered a new luxury J4500 clean diesel coach with impressive legroom and aftermarket support to Ebmeyer Charter & Tour, a leading provider of charter service in the Southwestern United States. The company serves more than 120 cities in 10 states.



Making its way across Canada, New Flyer's battery-electric CHARGE NG bus made a stop on November 3 at the Guelph Transit Commission in Guelph, Ontario. The Guelph Transit Commission team tested several features of the bus during a demo test drive.

charging architecture as standard equipment. Jouley can charge in approximately three hours and can supply power back to the power grid using vehicle-to-grid (V2G) technology.

"We are thrilled to pave the way for a cleaner future for the children in Indiana and across the country," said Kevin Bangston, president and CEO of TBB. "We believe electric school buses to be the future of pupil transportation and with a quieter operation, lower operating costs and zero emissions. MCCSC will continue to reap the cost and social benefits of school bus fleet conversion. This milestone delivery is an important marker for Thomas Built Buses on our mission to provide school districts with the tools and technology needed to transition to cleaner futures for our students and communities."

"Schools across America are driving towards a clean transportation future. Proterra congratulates Monroe County Schools for their leadership in the growing movement of school districts that are embracing zero-emission, all-electric school buses. Now, with 200 Proterra-powered electric school buses on the road, we look forward to helping clean air for more schoolkids and communities throughout the country," said Chris Bailey, president of Proterra Powered & Energy.

TBB and Proterra offer school bus operators a comprehensive, turn key electric vehicle program that includes EV planning and funding consultation, electric school buses, charging systems and charging infrastructure design and installation.

"Kerlin Bus Sales is on a mission to make Indiana a pioneer for electric school bus

operation and fleet management in the U.S.," said Melanie Zehr, vice president of Kerlin Bus Sales. "MCCSC is a leading example of the many benefits beyond zero emissions that make the transition to electric worthwhile, including greater fuel cost savings as well as lower maintenance and operating costs."

As the Electric Bus Authority, TBB continues to help school districts make the switch to electric. For more information visit <https://thomasbuiltbuses.com/electric-school-buses/electric-bus/>.

Daimler Truck North America (DTNA), TBB, a subsidiary of DTNA, is fully committed to leading the way to carbon-neutral (tank to wheel) transportation in the U.S. by reaching their 2039 goal to offer only new vehicles that are carbon-neutral in driving operation. The school bus industry is the ideal application based on the use case to introduce battery-electric vehicles to the market. Already in 2018, TBB and Proterra unveiled the high performance Jouley electric school bus. Now, the 200th nationwide deployment of battery-electric school buses represents a big milestone as cities, towns and school districts continue to transition to all-electric school bus fleets.

### California's Ebmeyer Charter Welcomes New MCI Luxury Motorcoach

MCI has recently delivered its luxury J4500 clean-diesel motorcoach to Ebmeyer Charter & Tour, one of the leading providers of charter services in the Southwestern United States, servicing more than 120 cities in 10 states.

Ebmeyer Charter's passengers will benefit from MCI's state-of-the-art J4500

coach, which comes with the market's best-in-industry legroom and MCI aftermarket support.

### NFI's High Performance EV Tours Across Ontario

On November 3, New Flyer's battery-electric Xcelsior CHARGE NG™ bus visited Guelph, Ontario, Canada, for a zero-emission bus demonstration with the Guelph Transit Commission.

The Guelph Transit Commission team tested the high-performance EV technologies of the Xcelsior CHARGE NG bus with a test drive. During the demo, the team also tested New Flyer's smart leveling system – SmartRider™ – by using objects of different heights to simulate different curb heights.

The demo results provided that the Xcelsior CHARGE NG has unmatched accessibility, ease of maneuverability, an efficient electric traction drive system and convenient interior design to provide passengers with a quiet, smooth and comfortable ride.

### Gillig to Equip 45 Communities Across America with Low- and Zero-Emission Buses

Gillig LLC, the leading manufacturer of heavy-duty transit buses in the U.S., announced that 45 transit agencies have chosen to partner with Gillig to utilize their federal awards to invest in Gillig's clean-energy buses for their fleets.

These awards were made possible through Federal Transit Administration (FTA)'s annual Buses and Bus Facilities and Low- and No-Emission (Low-No) Vehicle programs. These dovettailed programs were developed in 2016 to support upgrading and expanding public mass transit fleets,





National Underground Railroad Freedom Center, Cincinnati, Ohio – Photo by Mark Bealer



Northern Kentucky Skyline with Roebling Suspension Bridge – Photo by Liz Dufour



The Beast Roller Coaster at Kings Island, Mason, Ohio – Photo by Kings Island



Ark Encounter, Williamstown, Kentucky – Photo by Ark Encounter



Newport Aquarium, Newport, Kentucky – Photo by Newport Aquarium



Cincinnati Museum Center at Union Terminal, Cincinnati, Ohio – Photo by Robert Webber



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improving bus facilities and for the Low-No program specifically, funding the transition from older, higher-emissions vehicles to more efficient, less polluting fleets.

With a remarkable \$1.66 billion available, FTA's competitive grant process selected 150 projects across 48 states and territories. Out of the 115 projects that include the acquisition of new vehicles, 1,100 new zero-emission vehicles will join America's transit systems, nearly doubling the current no-emission transit buses in-service. This historic level of funding was made possible by the 2021 Bipartisan Infrastructure Investment and Jobs Act, as well as through other federal investments aimed at increasing access to public transit and decreasing overall carbon emissions.

Selected by nearly half of all bus-acquisition projects, Gillig plays a crucial role in fulfilling the goals of these FTA programs. Gillig's portfolio of clean-tech buses provides transit agencies with a range of solutions that align with the purposes of FTA's Low-No Emissions program. With Gillig's proven platform supporting CNG, hybrid-electric, clean diesel and battery-electric options, customers can utilize their funding as it best serves their unique transit systems' needs.

"We are honored to be the trusted partner for each of these awarded agencies, and we look forward to celebrating the impact these new buses will have in their communities," said Bill Fay, Gillig's vice president of sales. "Gillig buses have long set the standard of quality and reliability for American public transit. This historic funding will allow Gillig and our partners throughout American to shape a greener, cleaner future of our nation's public transit systems."

Fitting the needs of transit agencies shifting to cleaner, lower-emission technology, nearly half of Gillig's partnerships are utilizing Low-No funding to purchase Gillig's zero-emissions battery-electric bus. This third-generation iteration of their battery-electric bus, dubbed the Gen3, is built on the same proven platform durability as previous generations but now has a battery capacity of up to 686 kWh, as well as increased compatibility with depot and opportunity modular charging solutions, including plug-in, overhead conductive and wireless inductive charging options.

The Gen 3 battery-electric bus is built on the industry-proven, low-floor platform shared across all Gillig's bus products, ensuring a high degree of operator and mechanic familiarity and part commonality. With the all-new battery capacity, this next generation offers a 32 percent increase from previous models, ensuring customers do

Gillig recently announced that 45 transit agencies have chosen to partner with Gillig for clean energy buses for their fleet. Gillig offers clean diesel, CNG, hybrid-electric and battery-electric power options. Nearly half of all bus acquisition projects select Gillig.



not have "range anxiety" as they work to reduce their fleet's emissions.

The advancement in capacity and range is a result of Gillig's new partnership with the modular lithium-ion battery manufacturer Akasol. Akasol's ultra-high energy batteries have industry-leading proprietary safety features and other various scalable capacity configurations. Alongside the new batteries reducing concerns about range, Gillig offers customers further support by creating customized charging solutions to be fulfilled with their new battery-electric buses.

The Gillig team works with each customer to tailor their charging solution to the optimal equipment based on their duty cycle and operational needs. They offer a variety of Gillig-compatible chargers supplied by the largest and most experienced electric vehicle supply manufacturers in the U.S. Every product meets the latest SAE International standards, and Gillig independently validates each charger to ensure compatibility.

The FTA allows awardees to utilize funds for supportive zero-emission infrastructure. By choosing Gillig's charging solutions, the awardees have the peace of mind that their new battery-electric buses can start serving the public from day one. Coupled with Gillig's legacy of quality and durability, customers can be confident in their stewardship of this historic investment into a cleaner future for America's mass transit systems.

### ABC Offers Turtle Top Odyssey

ABC Companies, a leading provider of motorcoach, transit and specialty passenger transport equipment in the U.S. and Canada, continues to expand its equipment lineup with the unveiling of the Turtle Top Odyssey XL S2C at NLA's Chauffeur Driven Show. The feature-rich, 41-passenger shuttle bus is available from ABC on both the Freightliner S2C and Ford F600 chassis, offering fully customizable options for exterior and interior

components, as well as a variety of seating configurations.

"We're seeing many operators diversify their fleets with more transport options to expand their service and better serve evolving customer bases," said Roman Cornell, president and CCO ABC Companies. "It's a savvy move, and customers are extremely receptive to this premium product. They also appreciate the confidence of partnering with seasoned industry experts for all of their parts, service, support and technical needs – which full-size coach operators have enjoyed with ABC for decades."

Business owners can expect high quality as well as generous passenger appointments aboard the 41-passenger Turtle Top Odyssey XL series featuring:

- Increased passenger capacity for churches, colleges, city or country transportation authorities, assisted living services, cross-country touring companies, excursion companies and many more.
- High-quality Ford F600 or Freightliner S2C chassis
- Aerodynamic automotive exterior
- Bi-fold or 29-inch plug door passenger entry option
- Wide interior with double row 19-inch luxury seating
- Custom audio-video packages available
- Large passenger windshield option
- Five-sided steel roll cage with rust inhibitor
- Drop floor rear luggage option
- Available restroom packages
- Standard white full body paint

The Chauffeur Driven show floor model is customized with executive livery "wow" factor features including a scenic view front windshield and side windows, onboard charge ports, color LED lighting package, sleek leather seating, parcel racks and rear luggage stowage. Additionally, optional wheelchair spaces make the Turtle Top



## Equipment News

Odyssey XL an ideal solution for a variety of operators, including those servicing ADA routes or requiring full accessibility. Show visitors can inspect the new Turtle Top Odyssey XL at ABC Companies booth #240. ABC is taking orders now with new inventory on the way. View at abc-companies.com.

### **NFI Named as Partner of Choice for More Than \$380 Million in FTA Low-No and Buses and Bus Facilities Grants**

NFI Group Inc. (NFI or the company), a leading independent bus and coach manufacturer and a leader in electric mass mobility solutions, on November 3 announced that NFI subsidiary New Flyer of America Inc. (New Flyer) has been named partner of choice by a total of 38 major transit agencies across the United States for its successful project awards from the Federal Transit Administration's (FTA) 2022 Low or No Emission (Low-No) and Buses and Bus Facilities Grant Programs.

New Flyer supported the successful applications for more than \$380 million in grants awarded to 38 U.S. public transit agencies and was the named partner for two individual agency awards of more than \$25 million each. This was an increase from the \$40 million in Low-No grants awarded to nine U.S. public transit agencies that NFI subsidiaries supported in 2021. While New Flyer has been named as a partner, new awards will not be added to NFI's backlog until contract documentation is completed and a formal purchase order is received. New Flyer's success with Low-No and Buses



New Flyer has been named as the partner of choice by a total of 38 major transit agencies across the United States for Low or No Emission and Buses and Bus Facilities Programs. New Flyer offers the widest range of zero-emission, battery and fuel cell buses and coaches. The company has electric vehicles in more than 110 cities in six countries.

and bus Facilities grants provide future backlog growth opportunities.

"NFI is proud that subsidiary New Flyer has been selected as the partner of choice for numerous public transit agencies as they look to reduce emissions in their cities through these FTA grant programs," said Chris Stoddart, president, North American

Bus and Coach, NFI. "Our success demonstrates NFI's leadership in low- and zero-emission buses, including our wide range of battery- and fuel cell-electric products and our Infrastructure Solutions offering charging. The growth in these FTA grant programs from \$182 million in 2021 to more than \$1.6 billion of funding in 2022, is a testament to the strong tailwind of public support that will inevitably transform American into an electric bus future. NFI looks forward to continuing to lead the evolution to zero-emission mobility – what we call the ZEvolution."

Grant funds support the procurement of ZEBs and the associated charging infrastructure from New Flyer. In addition to those awards where New Flyer is a named partner, almost \$800 million of Low-No and Buses and Bus Facilities awards were made to other U.S. public transit agencies that have not yet to select a specific provider. The company expects these awards to create future bidding opportunities for NFI's businesses as unique programs are released by agencies.

Introduced in 2015, with the first disbursements in 2016, the FTA Low-No Grant Program is a competitive application process and exists to support the U.S. transition to low- and zero-emission public transit fleets. Funding can be used to purchase or lease low- and zero-emission buses, including acquisition, construction and leasing of the necessary charging infrastructure and facilities. The FTA has now awarded U.S. public transit agencies Low-No grants to

ABC Companies continues to expand its product line with the addition of the Turtle Top Odyssey XL S2C. This 41-passenger shuttle bus is available from ABC on both the Freightliner S2C and Ford F600 chassis. A list of options and special features is available.





## Equipment News

procure New Flyer buses and charging infrastructure for seven consecutive years.

The Buses and Bus Facilities Competitive Program makes federal resources available to states and direct recipients to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities, including technological changes or innovations to modify low- or no-emission vehicles or facilities. Funding is provided through formula allocations and competitive grants. For more information on the FTA Grant Programs for 2022, visit <https://www.transit.dot.gov/lowno>.

NFI is a leader in zero-emission mobility, with electric vehicles operating (or on order) in more than 110 cities in six countries. NFI offers the widest range of zero-emission battery and fuel-cell-electric buses and coaches, and its vehicles have completed more than 70 million EV service miles.

Today, NFI supports growing North American cities with scalable, clean and sustainable mobility solutions through a four-pillar approach that includes buses and coaches, technology, infrastructure and workforce development. NFI also operates the Vehicle Innovation Center (VIC), the first and only innovation lab of its kind dedicated to advancing bus and coach technology and providing workforce development. Since opening in late 2017 the VIC has hosted more than 300 interactive events, welcoming 5,000 industry professionals for EV and infrastructure training.

Leveraging 450 years of combined experience, NFI is leading the electrification of mass mobility around the world. With zero-emission buses and coaches, infrastructure and technology, NFI meets today's urban demands for scalable smart mobility solutions. Together, NFI is enabling more livable cities through connected, clean and sustainable transportation.

With 7,500 team members in nine countries, NFI is a leading global bus manufacturer of mass mobility solutions under the brands New Flyer® (heavy-duty transit buses), MCI® (motorcoaches), Alexander Dennis Limited (single- and double-deck buses), Plaxton (motorcoaches), ARBOC® (low-floor cutaway and medium duty buses) and NFI Parts™. NFI currently offers the widest range of sustainable drive systems available, including zero-emission electric (trolley, battery and fuel cell), natural gas, electric hybrid and clean diesel. In total, NFI supports its installed base of more than 105,000 buses and coaches around the world.

New Flyer is North America's heavy-duty transit bus leader and offers the most advanced product line under the Xcelsior® and Xcelsior CHARGE® brands. It also offers infrastructure development through NFI Infrastructure Solutions™, a service dedicated to providing safe, sustainable and reliable charging and mobility solutions. New Flyer actively supports more than 35,000 heavy-duty transit buses (New Flyer, NABI

and Orion) currently in service, of which 8,600 are powered by electric motors and battery propulsion and 1,900 are zero-emission. Further information is available at [www.newflyer.com](http://www.newflyer.com).

### Cherokee County Put First Propane-Powered Public Transit Buses in Georgia in Service

Cherokee County put the first propane-powered public transit buses in the state of Georgia in service in late October.

Cherokee Area Transportation Service (CATS) purchased three propane-powered buses from Coach and Equipment Bus Sales Inc. in February to replace aging buses in the fleet. The cost for all three totaled \$307,553 with 261,420 paid for with a Federal Transportation Authority grant and \$46,132 from Special Purpose Local Option Sales Tax (SPLOST). Two have been received, and the county is awaiting delivery of the third bus.

The new vehicles will replace three aging buses currently in the fleet that provide service for the Fixed Route Service by CATS. The Fixed Route Service offers those in need of transportation assistance a regularly scheduled route for a small fee. CATS also provides a Demand Response Service where residents can schedule their rides for things like doctor's appointments.

"We are excited to bring in three new vehicles that use a cleaner fuel source and have expected lower maintenance costs," said Community Services Agency Director Bryan Reynolds. "With the purchase, we were able to secure increased federal transportation support and a Federal Transit Authority fuel subsidy, saving our taxpayers money."

In partnership with the Cherokee Chamber of Commerce, the county unveiled two of the three new buses prior to the Board of Commissioners' work session, inviting representatives from Roush CleanTech and the Propane Education and Research Council. Roush CleanTech's Gen 5 propane system was integrated with the Ford 7.3 liter engine. It is more compact, cleaner and more efficient.

"Roush CleanTech's advanced propane autogas technology is helping states like Georgia tackle their air quality problems and budget challenges by operating economical, emissions-reducing buses," said Todd Mouw, executive vice president of sales for Roush CleanTech.

Steve Whaley, director of autogas business development for the Propane Education & Research Council, talked about the

Late October saw Cherokee County, Georgia put the first propane-powered public transit buses in service in the state of Georgia. The new propane buses replace three older buses in the fleet that provide fixed route service for Cherokee Area Transportation Service. CATS also provides Demand Responsive service.



## Equipment News

economic and environmental benefits of propane autogas.

Propane autogas vehicles have the lowest total cost of ownership due to reduced fuel costs and lower maintenance costs, and their power is comparable to gasoline-fueled vehicles. According to a 2020 survey of fleet end users, respondents identified reduced emissions as one of the primary advantages of propane autogas vehicles with 87 percent reporting equal or better performance compared to diesel and gasoline. Additionally, 90 percent of orders for propane autogas vehicles in 2020 were for transit vehicles, delivery vehicles and school buses.

"We're proud to add Cherokee County to the growing list of paratransit fleets across this country that are operating with propane autogas," Whaley said. "Cherokee County is prioritizing providing a safe, clean rider for their community while lowering their operating costs. It's a win for environmental sustainability and a win for their financial sustainability."

### Thomas Built Buses Commends EPA's Commitment to Clean School Bus Program

Thomas Built Buses (TBB), a leading manufacturer of school buses in North America, commends the U.S. Environmental Protection Agency (EPA) and the Biden-Harris administration on their continued support of the EPA Clean School Bus Program, in a

ceremony recently in Seattle, Washington. Vice President Kamala Harris and EPA Administrator Michael Regan began awarding recipient school districts with funds from the program to procure zero- and low-emission school buses.

"We appreciate and applaud the EPA's efforts on the Clean School Bus Program," said Kevin Bangston, president and CEO of TBB. "Their continued support allows us to accelerate electrification efforts across the nation, getting money quickly to help transition school buses to electric or zero-emission, providing immediate environmental benefits and better, cleaner rides for our kids."

Last month, the EPA announced it would nearly double the funding awarded for zero- and low-emission school buses, from the previously committed \$500 million to \$965 million, following increased demand from school district in all 50 states, in addition to Washington D.C., Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa and federally-recognized Tribes. The 2022 Clean School Bus Program is part of the infrastructure investment and jobs act (IIJA), which provides a total of \$5 billion over five years for clean school bus transportation. The rebate program prioritizes low-income, rural and Tribal communities.

"The EPA's efforts on the Clean School Bus Program are to be applauded," said Sean Waters, vice president of compliance

and regulatory affairs for Daimler Truck North America. EPA's efforts will help provide immediate environmental benefits and cleaner rides for our kids, while also helping to accelerate the transition of school buses to electric or zero-emission."

Two Proterra-powered Safe-T-Liner® C2 Jouley® battery-electric school buses from Thomas Built Buses were present at the event, one on display and one in the Harris motorcade.

In offering the services of its Electric Bus Authority, TBB continues to help school districts make the switch to electric.

### Busworld Southeast Asia Successful

The second edition of Busworld Southeast Asia, organized by Busworld and its partner, GEM Indonesia, was held for three days, from October 5-7, 2022 in the Jakarta International Expo in Indonesia.

With the presence of the four biggest body builders in Indonesia – good for 90 percent of the Indonesian market – and two imported Chinese brands, the exhibition had a large and diversified offering of buses and coaches. Together with an interesting conference program, the show attracted more than 4,000 visitors coming from 42 countries.

Due to the Indonesian government plans to electrify the bus fleet, manufacturers have seen the light: Six out of eight buses in the show were battery-electric driven.

From the coach perspective, the international press was astounded by the high quality and luxury standards of the vehicles. Especially the high comfort of the seats was impressive. Since the coaches in the booths were all sold, one can be sure that they are the real standard in Indonesia.

Vincent Dewaele, general manager of Busworld International, confirmed the future potential of this business event: After a second successful edition, we believe that Busworld Southeast Asia has a significant potential to grow. We will use all of our channels to inform the international Busworld network of the qualitative Indonesian products and we will bring more international exhibitors and visitors in 2024."

New Armada launched its newest coach, Skylander R22, at the show. The view of what is in front of the bus was shown on a screen at the back of the bus, so any driver behind the coach is able to anticipate the traffic situation in front of the bus. Especially in traffic areas with many scooters, this safety feature surely improves road safety. They also brought the Citouro bus.

Thomas Built Buses recently commended EPA's commitment to the Clean School Bus Program. At a recent ceremony in Seattle, Washington, Vice President Kamala Harris and EPA Administrator Michael Regan began awarding recipient school districts with funds from the Clean School Bus Program. Thomas Built Buses provided two battery-electric school buses for the Seattle event including one used in the motorcade.





Laksana had a coach premier with their SR3 XHD Prime, with an extra high deck and enormous luggage compartment. They also presented their electric bus Cityliner and a medium coach, Tourista.

Tentrem's eye catcher was the new electric bus, Velocity W5, completely produced with Indonesian parts, even the chassis. Usually bus body builders only build on foreign chassis in Indonesia. Their second vehicle on show was their sleeper coach, Avante H9 Priority.

Newcomer Adi Putro's most important novelty was their Jetbus Transit, the first monocoque low-floor bus in Indonesia. They revealed that the company is working on an electric version and will bring it to the next Busworld in 2024. All the (not less than) six coaches in their booth were top quality, with different seating arrangements of 2+2, 2+1 and even 1+1+1 in combination with sleeper seats on the lower deck.

Golden Dragon presented two electric buses in their booth: the six-meter All Star and a 12-meter City bus version.

Zhongtong Buses, distributed in Indonesia by PT Mobilindo, showcased two electric buses, a small six-meter bus and a 12-meter bus.

### Alexander Dennis Announces Order for 200 Double-Deck Buses

NFI Group Inc (NFI or the company), a leading independent bus and coach manufacturer and a leader in electric mass mobility solutions, their subsidiary Alexander Dennis Limited (Alexander Dennis) on November 10 announced that it has received an order for 200 low-emission Enviro400 double-deck buses from Stagecoach. This represents the UK bus industry's largest single order by number of vehicles since 2019.

Stagecoach's 200 new buses will be built in Britain and will have Alexander Dennis's SmartPack efficiency technology, giving them low-emission bus status and helping Stagecoach to cut emissions in the communities it serves. All are expected to be delivered in 2023 and to be allocated to depots across England, ranging from Torquay in the Southwest to Newcastle upon Tyne in the Northeast. The investment means that Stagecoach will remove older buses from its fleet, benefitting local air quality.

"We are proud of the continued investment we are making to our fleet with the largest single order for new buses in the UK for several years," said Sam Greer, engineering director, Stagecoach. "This really shows our commitment to the future prosperity of our communities and to our people



Alexander Dennis recently announced that Stagecoach has ordered 200 low-emission Enviro400 double-deck buses. This represents the largest single bus order by number of vehicles in the UK since 2019. The buses will be built in Britain and will be assigned to depots across England.

who can all benefit from cleaner transport and a growing bus sector. "These new double-deck buses will complement the investment we are already making with our electric buses to modernize our fleet in some of Britain's major towns and cities, enabling reduced pollution and meaning customers can benefit from more comfortable, quieter and newer vehicles on their everyday journeys. We look forward to working with Alexander Dennis to get our new buses into service starting early next year."

"We are delighted to continue to support Stagecoach in making buses across the U.S. cleaner and greener," said Paul Davies, president and managing director, Alexander Dennis. "Our low-emission Enviro400 is a tried and tested product that combines efficiency with high passenger capacity. Robust and easy to maintain, the 200 new buses will integrate seamlessly into Stagecoach's fleet. "After the challenges both operators and manufacturers in the UK bus industry have faced in the last years, it is a heartening step on the road to recovery to see significant volumes of vehicles being ordered again by the country's largest bus operator, Stagecoach," he added.

NFI is a leader in low- and zero-emission mobility, with vehicles operating in 13 countries, moving millions of people every day. NFI offers the widest range of vehicles including clean diesel, compressed natural gas, diesel electric hybrids and zero-emission battery- and fuel cell-electric buses and coaches.

### Euro Bus Expo Brings the Bus and Coach Industry Together After Three Years

Visitors turned out in the thousands for Euro Bus Expo, the bus and coach industry's largest gathering in more than three years, November 1-3 – a show that visitors and exhibitors are calling the "most successful show" they have attended.

Held at NEC Birmingham, England, the event brought together bus and coach operators, transport planners, local authorities, stakeholders and decision-makers from across the industry. More than 200 exhibitors showcased their innovations, solutions, services and insights, including more than 80 of the latest vehicles.

Helen Conway, event director, said: "We are delighted with the exceptional turnout. It was the chance to reconnect we all needed and fantastic to see the industry out in force again. The show was a real celebration of the progress made through what has been one of its toughest periods in recent memory. It really showcased the very best of the industry. We're overwhelmed with the feedback we have received. It's clear from the sheer volume of business done at the event that the industry is well along its path to recovery. We're so pleased to be a part of that."

Visitors were the first to hear from England's new minister for bus and coach, Richard Holden MP, who addressed the industry for the first time, following his



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appointment as Under-Secretary of State for Transport on October 28. His address highlighted work completed so far and what is still to be done.

The Masterclass Theatre was a hive of activity throughout the show, with visitors enjoying presentations and roundtable discussions from an impressive line-up of industry experts.

Graham Vidler, CEO of trade association and show partner, the Confederation of Passenger Transport (CPT), opened the show. He welcomed the industry back after a pandemic-induced event hiatus and looked ahead to the future.

Alex Hornby from Transdev Blazefield, Richard Grey from Greys of Ely and Scott Rattle from Passenger Plus took to the stage in a panel session on "Tackling the Driver Shortage."

Says Alex Hornby: "One of the most positive things about our sector is our shared willingness to be open about our experiences. Euro Bus Expo enabled us to all come together and remind ourselves of the collective power of our industry and our agility to grasp the opportunities that lie ahead. This was perhaps none more so in the Masterclass Theatre where we were able to remind ourselves of the challenges and solutions we can all share."

### Alexander Dennis Unveils Hydrogen Bus at the 2022 Euro Bus Expo

Teams across Alexander Dennis came together in Birmingham, UK, for the Euro Bus Expo where they unveiled Alexander Dennis' next generation zero-emission bus (AEB) lineup, including the Enviro400FCEV hydrogen-fuel cell double-decker, the first of a new generation of zero-emission buses fully designed and built by Alexander Dennis and backed up with AD24 whole-vehicle aftermarket support; as well as the Enviro400EV double-deck bus and the new mid-size midibus the Enviro100EV, which each feature next-generation electric driveline and the new future-proof Alexander Dennis battery system.

"Alexander Dennis is taking the next step in leading the ZEvolution with our next generation of zero-emission buses fully designed and built in-house, while continuing our very successful partnership with BYD which has been leading the market for the last six years and will continue to offer excellent products that meet further operational needs," said Paul Davies, president and managing director, Alexander Dennis.

"First, the Enviro400FCEV which adds a hydrogen-fuel cell bus that is ready to meet



Euro Bus took place on November 1-3 in Birmingham, England. This proved to be the largest gathering in more than three years with more than 200 exhibitors. Shown here is the booth of Alexander Dennis and Plaxton.

the requirements of any bus operator, transport authority or city. Next the crowd-shifting Enviro400DV and the Enviro100EV, which introduces a big bus feel to the small bus market specifically designed for the requirements of bus operation in the UK and Ireland, giving operators, transport authorities and their customers the best bus for the zero-emission age."

The team also announced promotions in the Alexander Dennis commercial team to

better serve customer needs, including Mat Lawrence as fleet sales director; Charlie Miller as retail sales director and Debbie McCreath as group marketing director. All will work under the direction of Group Commercial Director Martin West, who joined the business earlier in 2022.

"Our team had a great week reconnecting with many of our customers, suppliers and industry partners in person at Euro Bus

Alexander Dennis unveiled their new hydrogen fuel cell bus at the Euro Bus Expo in early November. This new double-deck model is known as the Enviro400FCEV. Also shown at this event was the battery-electric Enviro 100EV with its next generation electric drive.





Expo,” continued Davies. “We were pleased to showcase and preview our new zero-emission products and advanced services that will enhance the customer experience for our partners around the world. Thank you to the entire Euro Bus team for a fantastic event.”

### Irizar e-Mobility Presents the Irizar ie Tram at Euro Bus Expo

Those attending the Euro Bus Expo 2022 had the opportunity to exclusively visit the first right-hand drive Irizar ie tram, purchased by Go Ahead London as part of an order for 20 buses with charging infrastructure.

At stand number A10 Irizar was showing four latest generation vehicles: the new Irizar i6S Efficient, an Irizar i8, an Irizar i4 and the Irizar ietram electric bus. This will be the first time Irizar was showing to the UK market those vehicles focused on efficiency, making the brand a leader in the sustainable mobility sector.

The Irizar i6S Efficient has been recently awarded Sustainable Bus of the Year 2023 in the coach category and the British market has already had the opportunity to discover this new vehicle via a roadshow held throughout the summer. All the operators expressed their satisfaction with the improvements that the product incorporates, especially with the reduction in the vehicle's fuel consumption. The i6S Efficient on display will be registered as a demonstration coach after the Expo to be trailed by operators.

The Irizar ie tram presented on the fair was one of the 20 buses that Irizar e-mobility will supply to Go Ahead London, together with



Irizar e-Mobility presented its Irizar ie Tram at the Euro Bus Expo. Additional buses on display included the new Irizar 86 Efficient, an Irizar i8 coach and an Irizar i4. The ie Tram shown was one of 20 that will operate for Go Ahead London.

the charging infrastructure to electrify Route 358 in South London, the first ultra-fast opportunity charging route in the capital.

In addition, Irizar also had on the stand the first light-weight Irizar i4 with 71 seats and PSVAR compliance; and the first mirrorless Irizar i8, 14 meters long, with a seating capacity of 50 seats and delivered ready for conversion to Premiership football duties with Ellisons Travel of St. Helens.

The Irizar i8 remains a combination of design, technology and sustainability and

it provides exceptional comfort for the driver, guide and passengers. With the most advanced technology on the market, the Irizar i8 is chosen, since its launch, by sporting giants and coach legends.

After two difficult pandemic years, Irizar came to the show in Birmingham, England, with the clear goal of tackling the new challenges of the future of mobility and with the invariable goal of responding to the challenges of efficiency and sustainability that these times require of us.

### VDL Reusing Bus Batteries

Intensively-used batteries, taken from VDL Bus & Coach electric buses, get a second life in “Project Anubis.” This initiative of energy company RWE and VDL Bus & Coach revolves around the sustainable and circular use of raw materials, in this case bus batteries, in a central storage system in Moerdijk, Netherlands.

The transport sector will change rapidly from highly fossil fuel-dependent to electric in the coming years. Assuming that all buses and increasing numbers of cars and lorries in the Netherlands will run on electricity after 2030, more than 150,000 tons of batteries will become available for recycling every year. These are currently classified as waste and mostly taken to recycling plants abroad.

“In project Anubis, we are initially using batteries taken from 43 electric VDL buses operated by Transdev in Eindhoven since 2016,” explains Paul van Vuuren, CEO of VDL Bus & Coach. “These vehicles are currently

VDL is giving batteries from electric buses a second life. Batteries taken from 43 electric VDL buses that operated by Transdev in Eindhoven, Netherlands, are being replaced by new and larger battery packs. The used batteries still have enough capacity to be used in stationary applications in Europe.





getting new and larger battery packs, but the used batteries still have enough capacity to be used in stationary applications. In Europe, we are one of the forerunners in the field of electric public transport. Providing a sustainable circular solution for our batteries is part of our strategy. However, its application still requires a lot of new knowledge and development. Together with RWI, we will therefore collect a lot of data in 'Project Anubis' so that we can contribute even more to making our society even more sustainable."

Bart Kraayvanger, manager ZE and facility support Trandev Netherlands: "In 2016 together with VDL, we took the first big steps toward zero-emission bus transport in the Netherlands in Eindhoven. A major feat of pioneering, from which we have learned many important lessons. Now we are once again involved in these progressive and large-scale developments in the reuse of bus batteries."

The 43 batteries from the VDL electric buses, with a total storage capacity of 7.5 megawatts, will be coupled into one battery at the RWE power plant in Moerdijk. RWE is also working on battery projects in Germany, United Kingdom and the United States. RWE's ambition is to grow capacity to three gigawatts in the coming years.

RWE is at the forefront of developing projects that contribute to a successful energy transition. Besides balancing the supply and demand of (renewable) energy, battery systems are also ideally suited for stabilizing the energy network, due to their fast response time. "These are important conditions for making our energy supply more sustainable," says Roger Miesen, CEO of RWE Generation. With project Anubis, RWE and VDL are demonstrating that technical challenges related to the construction and operation of plants like this can be overcome. And with this project, we are actively contributing to a reduction of CO<sub>2</sub> because after an initial phase in the VDL buses the batteries will have an extended life at RWE. After that, they will undergo high-quality recycling."

The aim of project Anubis is to demonstrate and validate an innovative stationary energy storage system based on bus batteries. This will enable the large-scale rollout of such projects, thus contributing to the circular economy in the Netherlands. In the coming years, many batteries are expected to return from electric vehicles. Van Vuuren stated: "In Europe, more than 1,100 VDL electric buses operate in various cities and regions. We therefore expect to learn a lot with project Anubis so that we can start making an important contribution to a future where second-hand bus batteries are used as energy storage systems before being recycled."



London will soon see battery-electric tram buses on its streets. Irizar is providing 20 ie Tram buses and related charging infrastructure to Go Ahead London. The buses will be used to electrify Route 358 in South London.

### Irizar Electric Tram Buses to Run in London

Irizar e-mobility and Go Ahead London have signed a contract to supply 20 buses and related charging infrastructure to electrify Route 358 in South London, the first ultra-fast opportunity charging route in the capital.

Go Ahead, London's largest bus operator, has once again placed its trust in Irizar's e-mobility solutions and signed a contract for the purchase of 20 electric buses and supporting charging infrastructure. Two 450 kW ultra-fast chargers for the route terminals and 100kW depot chargers capable of charging two buses simultaneously at 50kW for the bus garage will be supplied by Jema Energy (a subsidiary company of the Irizar Group).

The model chosen, due to its visually appealing, modern design, is the 12-meter Irizar ie tram, the first to be manufactured with right-hand drive and the first to be launched in the UK. Its zero emissions, low noise and vibration levels, enhanced safety features and easy access, make it particularly suitable for use in a city like London.

The buses will be powered by state-of-the-art batteries manufactured by the Irizar Group and will be charged between trips using two fast charging inverted pantograph systems to be installed at Crystal Palace and Orpington Bus Stations, allowing the buses to be charged in less than five minutes and enabling them to perform the required service effortlessly. After finishing the route, the buses will receive a

short top up using the depot-based chargers.

The Irizar ie tram, with its stylish tram-like design, stands out from other buses by combining high capacity, easy access and plenty of passenger space inside with the versatility of a city bus. The bus's passenger compartment is bright, comfortable, spacious, pleasant and safe.

Its innovative features and the level of passive safety for passengers and pedestrians are the key factors that led the operator to choose this vehicle, along with the fact that the Irizar ie tram's front end design meets Transport for London's 2024 Bus Safety Standards in terms of front end pedestrian protection.

Irizar's zero-emission e-mobility buses, scheduled for delivery from late 2022, will run along Route 358 between Crystal Palace and Orpington.

"We are delighted that Go Ahead, London's largest bus operator, has chosen our technology; this is a clear testament to the confidence placed in our products and proof of their quality and reliability. London is investing heavily in sustainable public transport solutions and we are honored for Irizar e-mobility to play a part in this goal. Our technological race continues, and this operation will see our company launching the first super-fast charging route in London, complying with the high standards set by Transport for London," stated Iñigo Etxeberria, managing director of Irizar e-mobility.

This new contract is once again evidence of Irizar Group technological, innovative



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strength, reaffirming its intention to position itself as leader in urban mobility and shows the company's firm commitment to improving sustainability and environmental standards in cities.

### Marcopolo Provides Coaches for the 2022 World Cup in Qatar

Marcopolo provided six coaches to Qatar that will circulate during the 2022 World Cup, between the months of November and December. The units of the Paradiso G8 1200 and Audace 1050 models were produced in factories in Brazil and China and delivered to local operators. Currently, the company exports to 120 countries. In the third quarter of this year, it sent 1,321 buses to the foreign market, the volume represented a 96 percent growth compared to the same period in 2021.

"This business demonstrates the expertise and global performance of Marcopolo. In order to better serve customers and make the business more efficient, we opted for models with different characteristics and manufactured in two countries, in Brazil and China," said Ângelo Oselame, Marcopolo's commercial coordinator for the Foreign Market.

The two Paradiso G8 1200 road bus units were produced at the Ana Rech plant. The chassis of the vehicles have different configurations, according to the specific requests of each operator. According to Oselame, one of the models only has six sleeper seats, a meeting room lounge with

a TV and sofa, full kitchen and will be available to the organizer during the period of the sporting event.

The other Marcopolo buses are of the Audace 1050 model. The vehicles were produced at the MAC unit (Marcopolo China) and delivered to a private operator who will transport fans invited by one of the main sponsors of the event in local transfers, between the airport, hotel and stadiums where the games will be held.

Marcopolo has a great tradition in providing buses to transport celebrations and fans during soccer tournaments held by FIFA. The most significant participations were in the cups held in South Africa in 2010 and in Brazil in 2014, when the manufacturer was the main supplier of vehicles, including models for urban public transport in the host cities. Between 2010 and 2014, the company sold more than 1,000 buses.

Marcopolo's annual sales volume in Qatar is between 20 and 30 vehicles. In 2022, with the resumption of in-person activities and the realization of one of the biggest sporting events in the world in the country, the Brazilian company registered sales growth in the region, with 46 vehicles sold. In addition to tourism, the consolidation of companies operating in the energy sector reflects the increase in sales of buses exclusive for chartering. This year, there were 40 units dedicated to energy companies that seek vehicles to transport their professionals. □

Marcopolo provided six coaches for the 2022 World Cup in November and December. Included are two Paradiso G8 1200 road bus units and four Audace 1050 model coaches. One of the Paradiso units has a meeting room lounge with TV and sofa.



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# Cyr Bus Line Celebrates 110 Years

by Dave Millhouser  
Photos courtesy of Cyr Bus Line

Cyr Bus Line, one of the oldest and most respected bus operations in the United States, celebrates 110 years of operation in 2022. Founded in 1912 by John T. Cyr, this family-owned company is headquartered in Old Town and operates both school buses and coaches. Shown here is a Volvo 9700 carrying attractive external graphics promoting Old Town.

During the summer of 1975, as a newly minted bus parts salesman, the apogee of my sales swing through New England was Cyr Bus Line, just north of Bangor, in Old Town Maine. As luck would have it, Joe Cyr, then owner and president of the company, was available and showed me around the facility. Technically, the official name of the company is "John T. Cyr and Sons." John T was Joe's grandfather. The first thing he wanted me to see was a pristine 1959 General Motors PD 4104 motorcoach.

Back in the day many companies ran "experienced" equipment, but two things about this coach hinted at how unique Cyr was. First, it looked like it had just come off the assembly line – a tribute to caring maintenance in a part of the world that is tough on equipment. Even more significant was the fact that, though the lot was full of newer buses, Joe chose to show his oldest first.

For those unfortunates unfamiliar with Maine, once you get north of Augusta the

scenery is beautiful, but the population thins out. Cyr serves a large area, but there is not a ton of people. As a result, there is not a lot of competition. Over the years, Cyr has treated customers as if they had many transportation choices, even when they did not – a formula that has been successful for more than 110 years.

The company was founded in 1912 by 53-year-old John T. Cyr and his oldest son Joseph (Joseph is current day Joe Cyr's uncle and namesake) as a freight and livery business in the French Island section of Old Town. The fledgling company suffered an early setback when their newly acquired horse died unexpectedly in its stall. Apparently horses do not come with a warranty.

During those early years, a major part of Cyr's business was transporting lumber and raw materials to the Old Town Canoe Company and moving completed canoes to the rail station for shipment. One hundred ten years later, both companies are thriving, and now next door neighbors. Cyr's current,

modern facility is between Old town Canoe and a large bakery.

By 1922 it was clear that the new century belonged to the internal combustion engine, and Cyr bought their first motor vehicle, a Studebaker, operated as a "public car" in taxi service. Joseph, with the help of his brothers Harvey and Albert, had developed into a key player, and by 1930 John had retired. The company was now operating three gasoline-powered automobiles to transport school children in addition to 32 horses used for livery and hauling freight, out of their building on Old Town's "French Island."

Student transportation was a niche market for Cyr, but in 1930 it was reported that "the passenger automobile formerly used was too small to carry them comfortably. For this reason arrangements were made with Joseph Cyr to secure a combination truck and bus body large enough to meet the need." Cyr was in the bus business.





The Cyr diversified fleet of eight buses was housed in this building on French Island. The garage and the entire fleet of eight buses was destroyed in a fire in the early 1950s.



After the fire, the company struggled to obtain buses to restore school service. A bus dealer in nearby Bangor helped. They were successful and only a single day of school was lost.

Sadly, in 1934 the company lost both of its founders, when John (74, retired and in failing health) passed away in May, and then in August Joseph died suddenly at 49, thrusting younger brothers Albert, Arthur and Harvey into leadership of the growing company. During the 1930s in addition to trucking, Cyr was running scheduled bus service to local towns, operating taxis and limousines (and a hearse), as well as provid-

ing school transportation. They ran "specialty trips" like excursions to Hancock Point, Maine to dig clams, and chartered their buses to groups. It would be difficult to imagine anything "wheeled" the Cyrs did not do.

This was accomplished by a diverse and colorful fleet of passenger vehicles including (but not limited to) Yellow Coaches, Fords,

Fitzjohns and Studebakers. Most were purchased used, but in 1941 they picked up a new 20-passenger Chevrolet-powered Fitzjohn.

When WWII erupted, it became almost impossible to acquire newer equipment, Cyr's flair for maintenance and creativity served them well as they extended the useful life of their existing fleet. The war effort

One of the more popular activities during the 1930s was the Cyr bus trips to Hancock Point, Maine to dig clams. Some of the people in this group brought along bags to carry their catch back home. Cyr Bus Line also chartered buses to groups and operated school bus service.





clearly altered the mix of business, but created one unique new service – transporting German prisoners of war to and, at wars end, from POW camps that were established in the remote wilderness areas of Aroostook, Penobscot and Piscataquis counties.

The trips to the camps were likely grim, but those from the camps at war's end were more cheerful, as happy young German soldiers headed home to their families. Perhaps this was similar to modern school bus runs, where the kids are grumpy on their way to school, versus happy when heading home, but on a grander scale.

In the early 1950s Cyr's building on French Island, along with its entire fleet of eight buses, was destroyed by a fire. Scrambling, they managed to get enough equipment from Bean and Conquest, a Bangor dealer, to quickly restore school service. Miraculously (except perhaps from the viewpoint of the school kids), only a single day of school was lost.

Two other milestones were passed in the early 1950s – one major and the other unheralded at the time. Harvey Cyr had, by 1951, bought out his family members and was now sole owner. His son Joe was (starting as a 10-year-old) began working part-time for his dad. Named after his Uncle Joseph, co-founder of John T. Cyr and Sons, Joe worked at the company during his school years and while attending college, until 1962 when he joined the company full-time. Initially a mechanic, Joe gradually transitioned to management responsibilities. When Harvey died in 1967, he bought the company from his mother and became president of an operation that had grown to 10 buses and 15 employees.

After a rough start (a fire took out another garage and a bus) Cyr began a steady climb. In order to capitalize on their strength in relationships with the people in the area, Joe eased out of the trucking business and concentrated on school and motorcoach transportation. By 1980 the company had grown from 10 buses to 40. Between expansion and the city's desire to redevelop the French Island neighborhood, after 68 years, John T Cyr and Sons moved to a new, larger, facility on Gilman Falls Avenue in Old Town.

In 1984, the Bangor and Aroostook Railroad Highway Division dropped its passenger service, and Cyr picked up their route from Bangor to Caribou. Though now partially subsidized, this is less of a profit center than an expression of Cyr's long held commitment to balancing good business with serving their community.

One bus industry observer noted that the Maine tourist industry had benefited immensely from the company's reputation



In spite of its 110-year history, Cyr Bus Line (technically John T. Cyr and Son) has only had four generations in top management. Sue and Joe Cyr are second and third from the left. Their son Michael and daughter Becky Cyr Whitmore have been running the company in recent years. In the front row are the grandkids who could be the next generation in the business.

for helping other companies. "It became pretty well known among coach operators that if you had bus problems in Maine, Cyr was able and willing to help." Operating charter and tour buses in the rugged Maine countryside in the years following WWII could be a risky business. Knowing that help was available made operators anxious to add Maine to their itineraries. It would be difficult to over-estimate how much Cyr's generosity of spirit boosted the bus tour industry in the region. The opposite was true too. Any time a Cyr bus encountered difficulties, their reputation made local operators anxious to help.

Starting in the mid-1990s Cyr expanded dramatically, adding 95 school buses, and beginning service in four additional counties and a number of new districts including the schools in Pittsfield, Farmingdale, Hampden and Gardiner. They managed all this in a market with seasonally tough weather and a population less dense than many parts of the country. Fast forward, and under Joe and his wife Sue's, management, the company has grown to a multifaceted transportation operation with a fleet of 20 modern motorcoaches and 225 school buses. The largest in Maine, Cyr is one of the top carriers in New England.

The original Kässbohrer Setra office was located in Gray, Maine, not far from the Cyr operation in Old Town. Cyr Bus Line started putting Setras in their fleet at an early date and have operated a substantial fleet at times. This Setra received a special paint scheme for the company's 100th anniversary in 2012.







Cyr Bus Line has also operated a number of MCI Coaches over the years. Most of their coaches have an attractive paint scheme that is popular with passengers. The bright colors contrast with the snow that is occasionally seen in Maine.

In the current era of specialization, very few companies attempt as diverse an operation as Cyr, who provides school transportation, scheduled motorcoach service, and charter buses. In 1990 they added to that mix by purchasing a local tour company, and now Cyr Northstar Tours offers travel packages throughout the country. These are a refined version of the 1930s “specialty trips,” but rather than digging clams, their customers enjoy attractions all over the U.S.

Cyr is unique in another way. One hundred ten years old, in an era where many family business’s stumble on the second or third generation, this company is now owned and operated by a fourth generation and continuing to thrive. Joe and Sue’s son Michael, and daughter Becky Cyr Whitmore, had been working in Cyr management for a long time and Joe decided it was time to turn over leadership. Joe pointed out it was time to relax and that, actually, “Mike and Becky have been running the company for a couple of years and doing a very good job.”

Doing the math, over 110 years, Cyr has really only had four changes in top management. That unusual stability seems to stem from the balance of sticking to core values that have served well as they transitioned from horses all the way to modern battery-powered school buses, coupled with a flexibility that allows them to spot and serve emerging needs and trends. Their ability to identify opportunities to serve has been sharpened over the years by the Cyr’s deep involvement in the community.

The company, and members of the Cyr family, have received too many awards to cite here, recognizing an extraordinary com-

bination of business acumen, community involvement and charity.

If you are traveling on the Eastern Seaboard and spot a modern bus with spectacular graphics, it is likely a Cyr. Long known for creative paint jobs, the Cyr Fleet is a bit of a metaphor for the company. They

run modern luxury motorcoaches, hundreds of school buses including a new battery-powered bus, and – they still have that 1959 GM.

For a bit more insight and a fun video view <https://johtncyrandsons.com/about-us/>. □





# The new fire risks associated with EVs and HEVs

## How do we minimize them?

*by Jonas Bergström, business manager at Dafo Vehicle Fire Protection's bus and coach division*

This new Solaris Urbano 12 electric bus was photographed in Hamburg, Germany on Ludwig-Erhard-Strasse in front of St. Michael's Church. While electric buses may look similar to diesel buses externally, their fire hazards are substantially different. Solaris builds buses in Poland and offers a wide range of transit buses. SOLARIS.



With a growing coalition of countries pledging to reach climate change targets of net-zero emissions, the world is seeing a massive transition to renewable fuels. As a result, the automotive industry is changing to meet growing demand for electric and hybrid public transport vehicles. Jonas Bergström, business manager at Dafo Vehicle Fire Protection's bus and coach division, assesses current and new vehicle fire risks as the automotive industry moves towards electrification, and explains how vehicle operators can minimize these risks.

### Recent Developments Europe

The United Nations Economic Commission (UNECE) introduced Regulation 107 to

impose stronger bus and coach safety regulations. Under these regulations, engine vehicles are legally required to have an automated fire suppression system in the engine compartment. However, UNECE Regulation 107 does not discuss the fire hazards brought about by lithium-ion batteries used in electric vehicles (EVs) or the electric component of hybrid electric vehicles (HEVs).

Currently, it is not a legal requirement for vehicles without internal combustion engines (such as EVs) to be equipped with automated fire suppression systems. The drawback of this is that, in the event of a fire, the manual extinguishing function and external system may need to operate

together, which can escalate the spread of fire and increase downtime.

The latest draft of UNECE Regulation 100 (Construction and Safety of Electric Powertrains) was issued in 2020 and recommends an early warning signal in case of battery failure in rechargeable electrical energy storage systems (REESS), especially where there is risk of thermal runaway. Thermal runaway is where a battery cell defect – caused by overcharging, overheating, overvoltage or physical damage – leads to rapid temperature increases, and higher risks of potential explosions, fire and toxic gas emissions.

In order to recognize potential battery failure at the earliest possible stage and



reduce the risk of a fire, in line with Regulation 100, fire suppression systems could be used as an additional safety device to discharge a cooling agent to minimize hazardous risks. In Annex 8E, UNECE Regulation 100 recommends fire testing REESS from an external fire source.

### Recent Developments in the United States

The U.S. market is very different to Europe, with various types of public vehicles, including over-the-road coaches, school buses and transit buses.

#### Over-The-Road Coaches

These coaches cross state lines and they are under the jurisdiction of the Department of Transportation. Currently, there is no requirement for over-the-road coaches to have anything beyond a portable fire extinguisher. Original equipment manufacturers (OEMs) make the decision to install detection and suppression systems.

After Hurricane Katrina sparked a nationwide catastrophe, insurance premiums rapidly increased. OEMs attempted to negotiate insurance discounts if coaches were fitted with a fire suppression system; however, insurance companies would not agree to discount deals. Ultimately, liability rested with the coaches for losses following a fire. Coaches are privately funded, and OEMs are not regulated by a public authority in relation to fire safety in coaches.

#### School Buses

There are about .5 million school buses with only a few major manufacturers. Children run practice drills on evacuation and



Shown here is a Thomas Built Saf-T-Liner C2 Jouley electric school bus. It was photographed west-bound on Wacker Drive in Chicago near State Street with the Chicago River adjacent and the Wrigley Building obvious in the background. There apparently are no special fire regulations for electric school buses. THOMAS/DAIMLER.

school buses are equipped with big exit doors. The positioning of the engine is critical to detecting fire risk. Bus drivers would be able to spot smoke if the engine is positioned at the front, but if the engine is at the rear of the bus, they would not be able to spot risks as quickly.

Currently, there is no requirement for school buses to be fitted with a fire suppression system. The only requirement in Los Angeles County, however, is if school buses use alternative fuel, such as propane or liq-

uefied petroleum gas, they need to be fitted with gas sensors.

#### Transit Buses

The majority of funding for transit buses comes from the government. Each transit agency is responsible for their own remit, where they decide what fire protection to use and what systems to install.

Around 10 years ago, a rail incident occurred in Washington, D.C. After an investigation, the government found issues with overall safety and gave the transit agency one year to improve its safety protocols. However, the safety protocols were not improved within the year. As a result, now, safety officers are separated from management, and they are solely responsible for ensuring health and safety on transit buses. Currently, many transit authorities, including Washington Metropolitan Area Transit Authority, are supporting the industry through finding new solutions to improve fire risk management.

The bus and coach industry is looking to move rapidly to develop and implement fire risk management, detection and suppression systems for electric vehicles. The industry is evolving in line with the growing worldwide movement to use greener fuels and reduce greenhouse gas emissions.

#### New Fire Risks and How to Spot Them

Joey Peoples, CEO of Dafo US, and Jay Taylor, regional manager at Dafo's Transit and Motorcoach area, believe the direction of travel for the industry is learning from mistakes and making improvements for the

This is the first BYD electric coach delivered in the Paris area. Electric coaches share many of the same fire safety concerns as electric transit buses. Substantial work and effort is going into finding way to make them safer. BYD.





future. With any new technology, fires are inevitable and there should be more focus on origin and prevention, rather than deliberating who was to blame.

As the industry adapts to make full use of greener fuels, Joey Peoples comments: "All detection and suppression systems need to communicate and work together to determine risk. We need to understand our own systems and understand how one communicates to send warning signals to alert the other to release agent."

Li-ion batteries, commonly used to fuel EVs, are at risk of thermal runaway. The most effective way to address these types of fires is by spot cooling, with early fire cooling systems localizing and mitigating thermal runaway risk.

There are new and specific challenges to overcome and new risk assessments to carry out with the introduction of EVs and HEVs in public transport.

The location is the main difference between vehicles between ICEs (internal combustion engines) and EVs or HEVs. The majority of fire sources in vehicles with ICEs are found in the engine compartment area. However, the potential fire sources can be located in different areas in EVs and HEVs, in which case, more protection zones should be put in place. Additionally, due to the sensitivity of electrical components and the types of fire that could spread in different areas of these vehicles, specific extinguishing agents may need to be used.



You might note that the engine compartment of this Solaris Urbano 12 does not have an engine because it is an electric bus. The experts will tell you that fire risks are substantially different between diesel buses and electric buses. While the engine compartment is usually the top fire hazard on a diesel bus, it is generally the battery that causes the most concern on electric buses.

### Risk Management Assessment

The Research Institutes of Sweden (RISE) published a fire risk management assessment, which can be used as guidance and includes the following steps:

1. Hazard identification
2. Risk estimation

3. Risk evaluation
4. Risk reduction.

Failure mode and effective analysis (FMEA) entails identifying hazards and then quantifying risks, so that they can be ranked according to their priority.

After the risks have been quantified, they can be listed in order of priority to provide a holistic view of the risk map. A risk map isolates risks that are deemed to be acceptable from those which need to be addressed.

Finally, an action plan for the identified fire risks can be developed with appropriate risk reduction measures, including:

- 1) Risk elimination or minimization by design
- 2) Active and passive fire protection systems
- 3) Improved cleaning and maintenance procedures
- 4) Improved quality and training procedures.

As soon as hazards are identified, priorities naturally emerge as to which risks need to be mitigated first. Consequently, the actions that follow this ensure that the automotive industry – including its many and varied users – is made safer.

To find out more about choosing a unique fire protection solution for your electric bus or coach, visit Dafo Vehicle Fire Protection. □

BYD recently showed off a new design of 12-meter (39-foot) electric buses at the recent IAA show in Hanover, Germany in September of 2022. They also announced their safer Blade Battery. BYD has electric buses running in numerous countries and cities. BYD.





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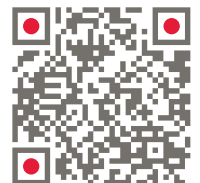
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## Celebrating 50 Years

### Thrasher Brothers Keeps Growing, Building New Markets

by Pat Plodzeen

Photos courtesy of Thrasher Brothers

Four new Thrasher Setra coaches for use on a contract are lined up at the Mercedes-Benz plant in Georgia. Thrasher Brothers was contracted to provide transportation service for the Daimler division's Brand Immersion Experience, a program that will bring some 26,000 Mercedes employees to the plant in Vance, Alabama and other Birmingham-area locations. Mercedes-Benz located its first U.S. manufacturing plant in the area west of Birmingham in the early 1990s.

**T**hrasher Brothers Trailways, which turned 50 in 2021, enters its next half century with optimism and loads of work. Alan Thrasher, president and second generation to lead the Birmingham, Alabama-based company, has managed the day-to-day operations and owned the business along with his sister Alyce since 2007. Like his father Jim Thrasher, the co-founder of the company who died in 2019, Alan has a genuine passion for the bus business, the Trailways brand and a knack for spotting sales opportunities.

"I was practically born on an Eagle bus," says Alan, "I've been around the entertainment and bus business my entire life. I'm proud to be following in my dad's footsteps and am dedicated to helping Thrasher Brothers and the industry flourish."

#### An Entertaining Start

The Thrasher Brothers, Jim, Buddy and Joe, performed on the Wally Fowler Gospel Sing at the Grand Ole Opry when they were children in 1948 and won Ted Mack's The Original Amateur Hour five years later. The family produced a TV show called America Sings, which aired on 100 stations around the nation from 1967 to 1976 and made several hit records including "Still the One," a country and pop music standard.

To keep up with life on the road, brothers Jim and Joe co-founded the Thrasher Brothers motorcoach company in Birmingham, becoming pioneers in entertainment coaches in 1969.

The brothers' first encounter with Trailways began that same year when Jim was

in Dallas for a taping of America Sings and walked into the regional Trailways office. He talked the organization into becoming a national sponsor of the show.

"Trailways ran ads for years and we had a Trailways miniature bus replica as a prop on the stage," recalls Alan. "My granddad, who was known as Pop Thrasher, would drive the band's Eagle bus, pulling only into Trailways members' shops for service. He also won a Trailways Driver Safety Award." Trailways even hired The Thrasher Brothers Quartet to perform at its annual meeting in 1972.

The band retired in 1986, and Jim, who is in the Alabama Music Hall of Fame, became the sole owner of the bus company. He was influential in the industry as a co-founder of the Alabama Motorcoach Association



(AMA). He served as its first board president for three years.

Thrasher Brothers officially became a Trailways member in 2002, with Jim and Alan Thrasher both contributing their talents to Trailways for many years. Alan served on the Trailways Board from 2013 to 2019, and now serves as vice chair of UMA's board.

Like his dad, Alan also had a musician's life on the road supporting touring bands before returning full-time in 1997 to focus solely on building the bus business. With the growth of the charter company, the Thrashers left the entertainment side of the bus business in 2013.

"Many doors have opened for us because of our reputation for quality coaches and caring for customers," says Alan. "Big moves are easy for us, and we've always worked on the premise of risk and reward."

Alan points to his company's efforts to arrange Trailways members' participation in the 2010 Olympics in Vancouver as a big undertaking that paid off. "The move was one of the single biggest revenue earning events for Trailways members," he says.

Since 2015, Thrasher Brothers has been the exclusive transportation provider for Daimler's Brand Immersion Experience at its Mercedes-Benz plant in Vance, Alabama. Thrasher currently runs five Setras, made by Daimler, to carry participants arriving in Birmingham from all over the country to tour the only Daimler-owned manufacturing facility in the U.S. where they build SUVs, C-class automobiles and now the electric cars. "We've just extended the contract by three years for the EQ Experience," says Alan.



This Van Hool coach has graphics to show the Thrasher Brothers affiliation with Trailways. The company became a Trailways member in 2002 and both Jim and Alan Thrasher were active in the organization for many years. Alan Thrasher served on the Trailways Board from 2013 to 2019.

Thrasher is looking at Daimler's new Tourrider coach to feature on the service. "We will be among the first to experience the new Mercedes model," says Alan. Tourrider was introduced to the industry at UMA Expo 2022.

Thrasher Brothers keeps a modern, well-maintained fleet of 20 coaches in its yard and shop near the heart of Birmingham. "We have the right number of coaches required for Birmingham," says Alan, who knows he can count on

other operators in Alabama and in the Trailways system for help when extra buses are required. Thrasher is always ready to reciprocate. "I do enjoy helping other operators out when they're in a coach-down situation or technical jam."

#### It's happening in Birmingham

The company's charter business is booming as well. Thrasher has wrapped up a three-month, eight-coach assignment for the revived United States Football League (USFL), transporting the league's

Thrasher Brothers turned 50 in 2021. The company originated with an entertainment group and then became active in entertainer coaches in 1969. Based in Birmingham, the company also worked with other Trailways members and local Alabama operators.





Thrasher Brothers attracted attention at the recent World Games 2022 in Birmingham by operating a Mercedes-Benz Tourrider Premium coach. It was used to transport selected top athletes to the various competition sites around Birmingham. The company is looking at the new Daimler coach that was introduced to the industry at UMA Expo 2022.



eight teams to practices around the city's stadiums. The inaugural-season of games were played April through June in Birmingham's new Protective Stadium and the recently upgraded Legion Field. In between, the company handled charter transportation moves for Garth Brooks' June 4 concert at the new stadium, which broke an attendance record with 52,000 tickets sold.

Next were the World Games, an 11-day international multi-sport event which took place in Birmingham July 7-17, 2022. A crowd of 100,000 watched 3,600 elite athletes from more than 100 countries compete for gold in more than 30 next-generation sports including waterskiing, dancing and billiards. As current president of the state motorcoach association (AMA), Alan made sure other Alabama Trailways

members and the state's smaller operators were contacted to help fulfill the transportation requirements.

"Now is our time," said Alan. "As an industry we can accomplish more when we work together."

#### Getting passengers to their destinations with care and class

Driver and passenger safety are of utmost importance to Alan, who would like the industry to come together on how to serve overnight trips requiring relief drivers. "These types of trips add to the burden of driver shortages, and affect the safety of the group," he says. "I'd like to see groups include overnight hotel stays for longer trips rather than rolling through the night. I see it as an extra safety measure and a win-win for everyone because travelers also arrive at their destinations well-rested."

#### Industry accolades

Alan's business know-how and service-oriented nature has won multiple awards for the company. Trailways presented Alan with a leadership, valor and team spirit award for his contributions to the 2010 Olympics effort.

*Metro Magazine* also recognized Thrasher Brothers as an Innovative Operator in 2016 for its inventive long-term Mercedes-Benz contract, modern fleet and the emphasis the firm places on safety.

Alan credits operators and the Trailways organization for keeping the industry in business during COVID-19. "I am particularly grateful to the heroic efforts of our industry's state and national associations and carriers throughout our country to make the government aware of our plight during the pandemic. We are still in business today because of all of you." □

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# Politicians and Pollution

by Larry Plachno

Photos from NBT Archives unless otherwise credited

With today's movement to going green, it may be difficult to realize that a century ago most of our local city transit and some of our rural transportation was provided with clean electric power. In many cases, it was our elected officials who moved away from electric transportation. This modern PCC streetcar and a diesel bus were parked side-by-side when photographed in Philadelphia. ROBERT REDDEN.

This article got started when we discovered that there might be another push to reduce pollution from bus and truck engines. We were under the impression that with modern exhaust treatment and particulate filters, the exhaust from a clean diesel engine is cleaner than the air in your living room. At this point you would think that the politicians should turn their attention to greater sources of pollution such as the Chinese coal mine fires, using bunker oil for fuel in ocean-going ships or even cow flatulence.

Discussion brought up the point that a century ago, America had non-polluting city and rural public transportation but most of that is gone now. What is interesting is that back then it was the government officials that wanted to eliminate the clean transportation systems and replace them with vehicles using fossil fuels. Although, I would have to admit that America's love of the automobile was behind their decisions. Today's movement to electric buses is actually the second time that our transportation systems moved towards clean electric power.

Since many readers do not remember back to the early 1900s, I can relate how this happened. What helps explain much of this is that the automobile developed slower than the streetcar. The streetcar was simpler and required less innovation and fewer parts. However, once the automobile became viable and reasonably priced, Americans pushed government in that direction.

In 1903, Henry Ford was looking for \$100,000 to establish the Ford Motor Company but he only could get \$28,000 in cash. Five years later, in 1908, W. C. Durant, the founder of General Motors, told an investment banker that in the future 500,000 automobiles would be built annually. The banker had Durant shown out. This may seem strange today but in those years city and rural transportation was expanding with electric streetcars and interurban electric railways. Automobiles were considered a rich man's toy and had little practical value. You might bear in mind that automobiles were not only primitive, but there were no roads to drive them on.

Local transportation in most big cities started with horsecars simply because that was state-of-the-art at that time. While they served the purpose, they had numerous shortcomings. Operating speeds were generally less than six miles per hour and the operating range was limited. Horses were expensive and usually only worked four or five hours a day. When retired from service after four or five years the value of the horses was low. Not only did the horses eat as much as 30 pounds of hay and grain daily but they also required the use of veterinarians, blacksmiths and hostlers to keep them fit.

North America was hit in 1872 with an epidemic of an equine respiratory disease that came to be called the Great Epizootic. Thousands of horses died in cities and the operators began looking for alternatives to the horsecar. Municipal officials apparently had their first taste of trying to eliminate pollution since horse car operation was one of the most offensive of any transportation service. Horses could daily deposit more than 10 pounds of fecal mate-



rial on the street and periodically drenched the pavement with urine.

The search was on for a replacement and hopefully an improvement over the horsecars. Some people tried to imitate the railroads and use a small steam engine, often called "steam dummies." They did not work well on city streets because they frightened horses, pedestrians were displeased with the exhaust and small steam engines were not very economical. Hence, they tended to be restricted to suburban lines that did not run on streets.

There were numerous other alternatives, but they all had their shortcomings. The use of compressed air and internal combustion engines was tried but never reached the point of practical commercial operation. Soda motors and "fireless" steam needed recharging. Battery-powered cars were tried but were only moderately successful. They were slow and the batteries needed to be replaced often. A method to recharge the batteries quickly was not available at this date. Some were used on crosstown lines in Manhattan but were otherwise not popular.

The next step in passenger transportation came from Andrew S. Hallidie who used cable cars to climb the hills of San Francisco in 1873. This was not necessarily a fresh idea since most of the patents already existed for cable car operation and Hallidie's father had been involved with wire rope since 1828. During the next several years, the cable car became the obvious replacement for the horsecar. The cost of building the track was much higher than for horsecars because of the need for an underground cable and precise slot at street level. However, the cable cars did not require horses, were capable of running greater distances and some were able to travel faster than horsecars. City fathers were pleased because there was no "pollution" on the streets.

Eventually, 59 cable lines were built as well as two rapid transit lines and some other operations. In spite of its lack of hills, Chicago had the largest system in the country with 710 grip cars and annual ridership that reached 237 million passengers. Virtually every major city in the northern United States ran cable cars. The two major exceptions were Boston and Detroit. While cable cars might have faced fewer problems in southern states because of the lack of snow and ice, none were built although Atlanta had the population to support a cable line. If you are interested in more information on cable cars I recommend a book by George W. Hilton titled *The Cable Car in America*.

It was at this time that the electric streetcar was being developed. Electric motors had existed at least since the 1830s. There were examples of small trains being operated electrically over the years at shows and special exhibits. Moreover, the technology for the cars previously existed as horsecars and cable cars. What was needed was a means to mount a workable motor, collect electric power and control the speed of the car.

Early attempts to mount an electric motor on the end platform of a horsecar were less than successful. The weight of the motor tended to cause the platform to sag and make a power connection to the axles difficult. Putting the motor directly on the axles also failed because the jolts and jars from operation tended to damage the motors. The answer finally came from Frank J. Sprague, a young naval officer. He mounted the motor between the axle and a spring with the motor meshing with a cogwheel on the axle. This allowed the motor to move with the jars and jolts of operation while still being engaged to the axle.

Another major problem in the development of streetcars was current collection. There were attempts to use one rail for negative power and the other for positive or use an exposed third rail for power like rapid transit lines. Both failed because of the high risk of exposure to pedestrians and horses

Most local city transportation originated with horsecars because they were state-of-the-art. This one was open to the weather, but closed cars were used in winter or inclement weather. Our guess is that this horsecare operated on Vermont Avenue in San Francisco.



For several years, cable cars were the ideal replacement for horsecars. It is noteworthy that they originated in San Francisco and still operate there. This photo was taken at the turntable at the end of the Powell and Hyde Street line located at Fisherman's Wharf and Ghiradelli Square.







New Orleans continues to operate some 80-year-old conventional streetcars on its St. Charles line. This photo shows a car turning into Canal Street in order to loop back to St Charles.



Most cities that operated streetcars at later dates used the more modern PCC car. This one was photographed at Castle Shannon in Pittsburgh on a line that continued out a long distance.

to electrical shocks. Hence, early streetcar operations tended to use dual overhead wires (one positive, one negative). A small four-wheeled cart rode on these wires to pick up electric current and was connected to the streetcar by a flexible cable.

The cart was called a “troller” which quickly changed to “trolley.” Hence, the word trolley does not indicate car design but rather a car powered by overhead electric wires. This system proved to be less than workable since the cart often fell off the wires (hence the phrase “you’re off your trolley”) and had to be exchanged when cars passed. The most typical answer in the United States was a single overhead wire with power collected by a trolley pole that extended from the top of the car to the wire. The tracks served as the electrical ground. In Europe, most of the streetcars tended to use pantographs for current collection rather than trolley poles.

Power control was initially a problem since using an “on” and “off” system was not very workable. What eventually developed was a “controller,” a box with a handle on top mounted on the front platform for use by the motorman. In simple terms, the controller handle could be moved through several “points” where resistance was successively reduced to increase speed. At the top speed, the electricity would go to the motors directly, without resistance.

While there were numerous attempts to build streetcar lines, they tended to have problems or were not very reliable. The true birth of the modern streetcar came in 1888 when the Richmond Union Passenger Railway in Virginia opened its new line developed by Frank Sprague. It was immediately successful and other cities wanted the same thing. Within three years, at least 200 streetcar systems were built or ordered. About 50 percent were built by Sprague and about 90 percent were based on his patents. It is noteworthy that until Sprague’s system was proven in 1888,

none of the cable car systems had been converted to streetcars.

The rest, as they say, is history. I know of no major city in the United States that did not have streetcar service. In addition, there are numerous smaller communities that had streetcar service in spite of limited population. At least initially, everyone seemed to be happy with electric streetcar service – the company owners, passengers and city government. However, it might be suggested that when the first streetcars went into operation, there may have been some wagons on the streets but they were pretty much devoid of automobiles.

It is worth mentioning that the success of the streetcar led to the development of

interurban electric railways. Using essentially the same technology as the streetcars, these lines connected cities and rural communities. They tended to use larger and faster cars and many tried to maintain hourly headways. Traveling salesmen could now make several calls a day to rural communities, and farm families could now travel to the big city for shopping and return the same day. In addition, city wholesalers could ship merchandise to rural towns the same day if the order was received in the morning.

Most of the interurban railways operated over city streets in larger towns and cities. While this would create problems in later years, it was helpful in the early days. Since the tracks were already there for the interur-

Conventional streetcars were not only powered by clean electric power but also provided transportation service in both large and small cities for decades. Johnstown, Pennsylvania retained streetcar service until a late date and then operated trolley buses. The date was February 7, 1960 when this car was photographed at Roxbury Loop in Johnstown.





ban cars, many of the companies ran a local streetcar line in smaller communities that would not have warranted one because of a lack of population.

Interurban railways were particularly popular in the Midwest. There was a continuous link of them from either Oneonta or Little Falls, New York all the way to Elkhart Lake, Wisconsin, northwest of Sheboygan. The typical trip on an interurban was relatively short since the steam railroads were more practical for longer trips. However, in 1910 a group of businessmen from Utica, New York rented an electric interurban car to visit Midwest cities and ran it 2,000 miles in two weeks as far as Louisville and Detroit. There is a book titled *The Longest Interurban Charter* covering this unique trip.

Hence, a century ago, much of our city transportation and some of our rural transportation was provided by clean electric power. There was even some new technology in following years. In the 1930s, the President's Conference Committee developed what came to be known as the modern PCC streetcar. Most cities that continued to operate streetcars gravitated to this newer design. Two interurbans, the Illinois Terminal and Pacific Electric, used PCC cars for suburban routes. In addition, several cities converted from streetcars to trolley buses that continued to use electric power but could pull to the curb to pick up passengers.

We might want to briefly look at the regular or "steam" railroads in the United States at this time. While they carried virtually all of the long distance passengers, very few routes were electric. By way of contrast, in



In the early years of the 1900s, the steam railroads provided most long distance travel. The river and lake boats were on the way out while commercial aviation was still some time in the future. Today, this form of transportation is preserved by tourist railroads.

much of the higher populated areas of Western Europe the major passenger rail lines were electrified. Presumably, the higher population density and more frequent service made electrification practical. However, electrified major railroads in the United States have been rare. The most obvious is the former Pennsylvania Railroad line from Washington, D.C. north to New York City and the former New York, New Haven & Hartford electrification from New York City towards Boston. Today these have been incorporated

into what is known as the Northeast corridor, the most heavily-travelled rail lines in the United States.

Beyond that, electric conventional railroads are found only in limited areas. Long Island, New York, Philadelphia and Chicago have electric suburban commuter service. Some major railroads like the Milwaukee Road, Great Northern and Norfolk & Western had electrified sections because of heavy grades, but all three are now gone. Both Detroit and Cleveland had local electric operation at one time, but they are gone. There were also a few industrial lines, such as the Butte, Anaconda & Pacific, but most of these are also gone. Today's modern clean diesel motorcoaches are much cleaner than the steam locomotives of this era.

As mentioned earlier, automobile development came later than streetcar development. There were two major problems that stood in the way of bringing automobiles to practicality. The first was technology and components. Early automobiles were primitive and were difficult to operate and maintain. Early automobiles had to be started with a crank since electric starters had not been developed. In addition, driving early automobiles at night was questionable since early headlights were not very bright. It took years for all of these component parts to develop.

The second major problem was the lack of paved roads. Today, people simply assume that roads always existed. This is far from true. When many of the interurban railways were built in the first decade of the 1900s, most paved roads were located in cities and many of them were paved with bricks. Rural

Early interurban cars were built of wood, but most could run at fairly high speeds. They brought mobility to rural areas by letting salesmen cover several towns in one day and by making it possible for rural residents to go to the city to shop yet return the same day. This particular car operated in Iowa.





roads and streets in small towns were usually unimproved which is a nice way of saying they were dirt. In dry weather, they were dusty and in wet weather they were muddy. Pickwick Stages, the largest bus company in the early days, had a scouting bus to help plan bus routes on the most favorable roads. Transcontinental bus service did not start until 1928, and even then much of the route was over unpaved roads.

Hence, in the early days, automobile ownership was not only limited to the rich but was also not very practical. Prior to mass production and Ford's Model T, automobiles were expensive. Only the rich could afford them. If you owned one, there were not many places you could go on dirt roads. Do you remember images of early automobile drivers with goggles and a scarf to deal with the dust? As a result, the streetcars and interurban railways served a very practical purpose.

To give you some idea of how bad it was, let me mention that soon after World War I, the American military decided to cross the United States in a convoy to determine the need for good roads. They left Washington, D.C. on July 7, 1919 and headed West. Included were 81 vehicles and nearly 300 men. This became known as the First Transcontinental Motor Train. Their path took them through 3,250 miles of dirt, mud, rock and sand. Paved roads outside of cities were rare. Much of their journey took them along what came to be called the Lincoln Highway. They spent nights camping along the way and drove during the day. It was not until September 3, nearly three months later, that they finally reached Oakland. This gives you some idea of the struggle to drive across the United States not much more than a century ago.



In many cities the streetcars were replaced by electric trolley buses that were still non-polluting but could pull to the curb to pick up and drop off passengers. Unfortunately, many of them were also replaced like the streetcars. This photo taken in Vancouver, British Columbia, shows the older Brill on the left and the newer New Flyer on the right. TRAMS.

An interesting side note is that one of the military people assigned to the First Continental Motor Train was a young army officer named Dwight David Eisenhower. He just missed the war in Europe and signed on for this epic trip at the last minute. It obviously made him conscious of the lack of good roads. Decades later, while dealing with World War II in Europe, he got a chance to see the German autobahns. After being elected president, Eisenhower launched the interstate highway system. If you are inter-

ested, the story of the First Continental Motor Train is told in a book by Pete Davis titled *American Road*.

What transpired is that as automobiles entered mass production and were less expensive, people began buying them. Freedom became more important than the lack of pollution. As a result, our politicians began moving away from clean electric power and towards encouraging internal combustion transportation with its pollution. Much of this movement from clean electric power to internal combustion engines was prompted by America's new love for the motor vehicle that caused the politicians to make the decisions they did. However, the fact is that it was government action that eliminated much of the clean electric transportation of a century ago.

As roads were built, the number of passengers riding streetcars and interurbans declined. The first to go were the small town streetcars and smaller lines in the city as ridership declined. Then the weaker interurban lines and the smaller city systems folded. There are many smaller communities that had good streetcar service or an interurban station a century ago but have no public transportation today.

In some states, the regulatory authorities helped retain electric transportation. When jitneys appeared in the cities to steal passengers from the streetcars, the authorities often stepped in to eliminate this competition. Some states, notably Pennsylvania, Ohio, Indiana and for a while Illinois, tended to protect the electric interurban railways from highway competition where they could. In

Mass production of the Ford Model T allowed more people to buy and own cars. This created a need for more highways and paved roads. One result of America's love for the motorcar was the reduction in electric public transportation. PAUL BRENNAN.







This 52S2P Twin Coach operated in Chicago where propane and trolley buses reduced pollution for many years. The location is Wrigley Field (Cubs Park) at Addison and Clark on Chicago's north side.



Later interurban cars were made of steel. These cars operated on a line from Chicago to Milwaukee at high speeds and also provided commuter service to numerous locations in the northern suburbs.

some cases, they even gave the interurban lines an opportunity to improve service before authorizing competition. In other situations, they favored highway service controlled by the interurbans because it could be coordinated with their electric rail service. Michigan, on the other hand, tended to favor highway competition (possibly influenced by the auto builders) which is why their interurban lines quit at an earlier date.

In many places, the electric railways were looked at as being "in the way" of modern highway vehicles. A few interurban lines were eliminated because of highway expansion. Others fell victim to the problem of running on city streets where city fathers wanted them out of the way of automobiles or unable to reach downtown because the

local trolley line quit. An example of street running remains in Michigan City, Indiana and this line also carries freight cars.

One of the more interesting developments was the Public Utility Holding Company Act of 1935. It required that power companies sell their electric railway affiliates. In many cases, the power companies were in fact subsidizing clean electric public transportation with their electric sales. This resulted in streetcar and interurban lines losing this support, going to new owners and often abandoned. It is interesting that in 1935, it was wrong for power companies to support clean electric transportation while today government funding supports transportation with internal combustion engines.

In many cases, the streetcars and trolley buses survived through private ownership but not the following municipal ownership. With very few exceptions, municipal ownership was followed by the elimination of streetcars and trolley buses. Chicago at one point was highly non-polluting with propane buses as well as electric streetcars and trolley buses, but they were eliminated in favor of internal combustion vehicles. Chicago also had two electric railways providing commuter service that it allowed to abandon. It is also noteworthy that the last of the great Pacific Electric system in Los Angeles was abandoned by a government agency. Pacific Electric sold out to Metropolitan Coach Lines in 1953. In turn, they sold out in 1958 to Los Angeles Metropolitan Transit Authority who abandoned the last of the electric rail lines.

There have been suggestions of a conspiracy by vehicle builders, oil companies and tire companies to eliminate electric transportation and replace it with rubber-tired vehicles. The best analysis of this is probably a book by Eli Bail titled *From Railway to Freeway* that covers the demise of the 1,000-mile Pacific Electric system around Los Angeles in an area now complaining about smog and pollution. Bail dismisses the conspiracy theory but points to the fact that Pacific Electric's owner, Southern Pacific, was interested in freight service and not passengers. In addition, General Motors not only had a well-engineered and reliable product to sell but offered financing.

While the Public Utilities Commission and Southern Pacific battled over the electric rail lines, Pacific Electric waited in vain for a commitment to a local transportation policy on the local and state levels. It never came. This same scenario was repeated in different cities, in different states and at different times. What was needed was for the politicians to realize the importance and significance of clean transportation power. It is only in recent years that this is sinking in. □

Pacific Electric at one time provided electrified passenger service on 1,000 miles of track in Los Angeles and the surrounding area. Unfortunately, this service fell victim to the lack of a comprehensive transportation plan. Shown here, a three-car train of 900-series cars is photographed on an overpass at La Cienga while hurrying towards Venice.





# The Race to the Bottom



by Dave Millhouser

Several people in the industry are concerned that the reduced sales caused by the pandemic will prompt bus operators to lower prices in order to increase business. This not only makes it difficult to increase prices in the future but also cheapens the image of the industry. Shown here are several coaches gathering in the Chicago area prior to heading to Washington D.C. for the Rally for Awareness. PAT PLODZEEN.

**M**y buddy and I rolled backwards off the Cape Ann Diver, into the water – and began a race to the bottom.

The *Nina T* was a 70-foot Eastern rig trawler that had sunk at the dock when her ancient hull grew weary. We had spent hours underwater stapling strips of wood over sheets of plastic to make her watertight (do not try this on a steel hull, and **do not** borrow your neighbor's staple gun). At low tide she was pumped dry, strapped to a barge and towed out of the harbor into 100 feet of water.

A fire-boat hosed her full, and she disappeared below the surface. My friend and I each wanted the coveted title of "first to dive the wreck of the *Nina T*," and descended into the ugly mud cloud that a vessel makes when she strikes bottom. It was spooky; so murky we still do not know who won.

As the first stirrings of a reviving bus market appear, there is a danger of the industry engaging in a similar race to the

bottom. Trust me, it is dark and dangerous down there. Rumors circulate of carriers bidding \$1.50 per mile on military moves, and the temptation to take work at absurdly low prices is huge.

Please understand that, while I see your pain, I can not feel it. That is weasel talk for "easy for me to say." It has been decades since I was involved in "operating" buses. The desperation to get drivers working and move coaches is understandable, but if we go too far we are damaging opportunities in a post Darwin market.

We can not (and should not) discuss "fixing" prices, but this is advocating a thought process.

At least two bad things happen in a bus rate race to the bottom. First, we set pricing benchmarks. Customers will expect similar pricing when business starts to come back better, and will not be particularly receptive to excuses. In the back of their minds they understand loss leaders during desperate

times, but it is the front of their minds that negotiates.

Hang on – gonna swerve here. This is where real, long-term relationships pay off. If you have made the effort over the years to treat clients like partners, not paychecks, they will be more willing to identify and reward quality. Back to the main drag . . .

Second, many operators have been involved with rallies in an effort to raise the awareness (and image) of the motorcoach industry. We believe, correctly, that we are not accorded the respect we have earned. We chafe at the perception that we are transportation's lowest common denominator, and have, of late, spent a ton of energy trying to let politicians and the public see us in a better light.

Competition based on pricing alone confirms the old view of our worth.

Lots of operators were already on a slippery fiscal slope, and went over an unfore-



seeable cliff that was not anyone's fault. Hopefully they are poised, bruised and battered, at the bottom, ready to start clawing their way back. "Those who do not learn history are doomed to repeat it," is a phrase likely coined by Philosopher George Santayana (I was surprised to find that he is not the Mexican general who attacked the Alamo). That is fancy talk for "when you are in a hole – stop digging."

We are going to be a smaller industry (painful, but true). If we now market based on an Annie Get Your Gun paraphrase, "Anything you can do, I can do cheaper," we will only confirm the public's perception. You know – the ugly one we are trying to change.

Since no one in our industry has ever experienced this before, I am at a loss. There is not anyone to steal ideas from.

Internet/social media presence is a bit like weighing 270 pounds. If you are going to play defensive tackle in the NFL, you have to weigh 270. It is a given. Just as every tackle is a big boy, virtually every operator has a digital footprint. If you want to keep playing, you need to find additional, substantial ways to distinguish yourself from the other fat guys.

Moving on with the football metaphor . . . bear in mind when taking advice from consultants or clueless columnists (like



The origin of "race to the bottom" comes from scuba diving. With scuba diving, a race to the bottom may be a harmless challenge. However in the bus industry pricing, it could easily harm the bus industry and give it a bad name.

me) is that we are playing "fantasy football" while you are on the muddy field getting clobbered. We mean well, might even get a few things right, but **you** are at risk.

Best guess is that the folks who will do best are the ones who work at building rela-

tionships, and earn the right to tell customers that they are worth a bit more.

Resist as much as you can the urge to win the race to the bottom. □

Many of the experts suggest that there are ways to fill your buses with passengers without resorting to ridiculously low prices. One good suggestion is to provide great service and create strong relationships with your customers. If your customers and passengers are pleased, they will tell others about your service. MCI.





# Survival and Prosperity

by Ned Einstein



## Making Public Transportation Work Part 2: Park and Ride Lots

Particularly regarding fixed route transit and paratransit, the abandonment of designing a system has cost these modes dearly. This is largely because software emerged in the early 1990s to configure routes, establish schedules select stops and dispatch – and we stopped bothering.

*Transportation involves more than just the vehicles.*

As all NATIONAL BUS TRADER readers know, transportation involves more than just the vehicles. There must be roads, bridges, tunnels, rest stops and parking lots – for starters. This is only if the “system” comprises personal vehicles, trucks and taxis. For shared-ride vehicles, especially large ones (buses and motorcoaches), much more is needed for a “system” to exist, much less operate effectively and efficiently. These other elements became increasingly important as our roadways became clogged with automobiles.

In response the Interstate Defense Highway Act of 1956, and the urban sprawl that increased as other highways were expanded to supplement this network, traffic began to explode and transit use declined. Transit was only rescued by the creation of UMTA (with capital assistance) and USDOT (through which UMTA added operating assistance) in the 1960s.

This recognition of the need for transportation alternatives led, in the 1970s, to an explosion of ideas about the components needed to make a true system work. Installment #1 of this series described alternative work schedules as a means of spreading out the “peak nature” of traffic – still concentrated in AM and PM rush hours. Another element of the system much talked about, and which began to spread quickly, was the use of park-and-ride lots – effectively “collector points” to which groups of motorists could drive and park – and transfer to buses to reach the cities where their employment lay.

## Lessons from La La Land

One of the rudimentary principles of transportation system design is that a system must reflect, and take advantage of, each city’s “urban form.” Regarding this principle, a thin rectangle with a tight grid of long, medium-speed avenues (“collectors” in traffic engineering jargon) intersected by hundreds of slower-speed cross-streets (“locals” in traffic engineering jargon), with a high density of passengers, is much easier to serve with buses than is a large, medium-density area with often curvilinear streets weaving all over the place. Particularly with a subway system now 119 years old, Manhattan was an ideal form into which integrated passenger rail (mostly underground) and buses could interface. To this day – even with four far-less-dense “boroughs” bogging down the statistics – New York City’s transit system covers a higher percentage of its costs (35 percent) from passenger fares than any other city in the country.

At the other extreme are clusters of cities and metropolitan areas like Los Angeles County – whose major transit system covers only nine percent of its costs from passenger fares. This was no accident. In the early 1980s, former Los Angeles mayor Tom Bradley felt that he could not successfully run for governor if his city did not have a passenger rail system. Cost and convenience be damned, and absurdly counter to the city’s and county’s urban form, he initiated the design and construction of L.A. County’s first “subway” system (much of which ran above ground).

*The presiding court ordered the defendant to purchase an additional 3,200 buses.*

The first three lines of this wasteful skeleton plunged the county \$7 billion in debt. To provide the “local match” to federal grants, the 4,753-square-mile county scavenged its bus system, removing thousands of from its vast street network. In response, in 1999, 25,000 former bus riders formed a union, and filed a class action lawsuit (*Bus Riders Union v. Los Angeles County Metropolitan Transportation Authority*) to restore bus ser-

vice. As a resolution, the presiding court ordered the defendant to purchase an additional 3,200 buses – one of the most astonishing class action rulings of all time.

This ruling did not fix the problem. More and more wasteful subway lines were added. To lower the major system’s outrageous costs, roughly 30 “municipal” systems expanded or were created. These ranged from tight, obsessively-designed suburban systems (e.g., The Carson Circuit Transit System, which I helped design) to multicity systems (like Long Beach Transit, Big Blue Bus [Santa Monica], San Gabriel Transit and Los Angeles’ DASH system – spreading north south, east and west alongside LACMTA routes). The result is an inefficient, costly mess where, as noted, only nine percent of operating costs are covered by passenger fares. System elements like park-and-ride lots are sparse – perhaps a hundred or so, when, frankly, several thousand are needed.

New York City is not exactly park-and-ride heaven. Its 4,753 square miles, plus dense surrounding suburbs, does not need the magnitude of park and ride lots as does Los Angeles County – almost exactly 10 times the size. Regardless, these extreme examples illustrate the need for an extensive number of system elements obscenely underutilized, and which as a result, compound the poor match of a system’s design (or non-design) to a service area’s urban form. Our nation’s public transportation systems are failing largely because all or most cities have failed in both respects.

## Mode Split

Because one bus can carry as many passengers as 40 cars, it is no surprise that every sane city in the country should have done all it could to create a coherent bus or bus-and-rail system. No expense should have been spared to design them coherently and imbue them with every supporting element needed. A major challenge is that a major element of such a system – thousands of park-and-ride lots – have become more and more costly, and more so as they approach city boundaries.

As suggested above, the goal of having the right number of park-and-ride lots, and locating them in the right spots – is to minimize the number of miles motorists would have to travel in their personal vehicles (most of the time, by themselves) and max-



# Help the Pacific Bus Museum Acquire a Silverside

The Pacific Bus Museum, [www.pacbus.org](http://www.pacbus.org) is an all volunteer, non-profit, 501(c)3 organization that is dedicated to preserving the history of bus transportation. The museum, located in Fremont, California, was recently notified of a once in-a-lifetime opportunity to acquire a restored and operable bus that was part of Greyhound Lines' Historic Bus fleet.

The new owners of Greyhound have made a decision to liquidate the company's Historic Bus Fleet in the coming months. These are museum quality buses that were restored back to their original condition by Greyhound starting in the 1980s. The Pacific Bus Museum has submitted a bid for Greyhound's General Motors, model PD 4151 "Silverside" #1947 and the museum has been notified that our bid was accepted. This bus would be a significant addition to the museum's bus fleet and this particular "Silverside", which has ties to the San Francisco Bay Area, was one of the last 20 "Silversides" still operated by Greyhound at the end of 1971. This bus should need little to no restorative work unlike a number of the museum's previously acquired buses.

Your help is needed for donations towards this bus purchase that can become part of the legacy of the PBM. The museum has established a program that allows people to have naming rights to the all the seats on the bus. If you donate at a certain level, you can choose a seat, and a metal plaque with your name will be affixed to the seat forever. You can even make it a memorial to a family member or friend. Here's how it works, there are 5 levels of giving and the highest donation received for each level is allowed first pick of the 41 passenger seats and also the driver's seat. The sooner you donate the better your chances to get a seat you desire. We welcome non-seat donations in any amount.

## Levels:

1. "Driver's seat" - A minimum donation of \$10,000.00, for a plaque on the dashboard.
2. "Hey driver" - A minimum donation of \$5,000.00, for seats in first rows.
3. "Are we there Yet" A minimum donation of \$1,000.00, for seats back a few rows.
4. "It's cold in here" A minimum donation of \$750.00, for seats a few rows from the back.
5. "Always room in the back of the bus" A minimum donation of \$500.00, for the remaining rear seats.

Your donations for the "Silverside" can be your chance to preserve something tangible for the present and for future visitors to have some history of those who made it all possible.



Below are the forms for your donation and preferred seat choice(s).

Thank You, The Board of Directors of the Pacific Bus Museum

**YES!** I want to help the Pacific Bus Museum acquire Greyhound's "Silverside" #1947. I am enclosing a donation for this acquisition.

Donor's Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State/Zip: \_\_\_\_\_

Email: \_\_\_\_\_ Phone: \_\_\_\_\_

\$10,000  \$5,000  \$1,000  \$750  \$500  Other

For a Seat Level donation (\$500 or more) check this box

**Total amount enclosed: \$** \_\_\_\_\_

*(Please make checks/money orders payable to Pacific Bus Museum)*

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# Survival and Prosperity

imize the number of passengers who travel the rest of the way on a vehicle that can accommodate 40 to 60 of them (or 57 in today's 45-foot-long motorcoaches, with the same amenities as they enjoyed in their personal vehicles, but not needing to keep their eyes peeled at almost every moment, to constantly glance at three mirrors, or to even remain awake – much less in cushy, padded reclining seats with footrests).

In transportation jargon, the transfer from one mode to another is referred to as “mode split.” The goal of mode split is to transport the most passengers in the fewest number of vehicles and vehicle miles. Transferring a large percentage of motorists to buses (and, where available, passenger rail) is the most efficient and effective way to accomplish this goal – and the numerous benefits that come with it. Those benefits include:

- Lower costs (less fuel and maintenance per passenger)
- Cleaner air (and less global melting and burning that accompanies it)
- Less fuel/better energy efficiency
- Less traffic (and less productivity loss associated with it)
- Less stress and fatigue for motorists, and improved safety

## Waste and Opportunity

While several additional elements of a complete transportation system will be summarized in future installments of this series, park-and-ride lots are critical components of any efficient system that fulfills the fundamental goals of any and every public transportation system.

*Similarly, the park-and-ride lots that were available and affordable 50 years ago are now largely unaffordable.*

Naturally, our failure to design an optimum system at a time when land for park-and-ride lots was more available and more affordable is increasingly irreversible. Only 49,500 miles of the original Interstate Defense Highway was ever completed. Yet even 40 or so years ago, transportation professionals calculated that it would cost as much to complete the last single percent of this system as it cost to build the first 99 percent of it. Similarly, the park-and-ride lots that were available and affordable 50 years ago are now largely unaffordable. As the magnitude of waste in public transportation continues to grow, and as the public continues to be deceived by the

promises of technology, in real life the true characteristics of public transportation are waste, indifference and squandered opportunity.

Despite a population growing poorer and poorer, and the cost of vehicles, maintenance and fuel continuing to rise, transit ridership actually declined by roughly 10 percent nationwide during the two years before COVID temporarily disrupted most of it. It would be naïve to blame all or most of this on a mode split from buses to transportation network company (TNC) vehicles (like Uber and Lyft) or taxis. Even so, whatever percentage of this decline came from a mode split to TNCs or taxis, or back to personal vehicles, this split represented the transfer of passengers from large vehicles to smaller ones. Frankly, we are going backwards. We have only our own incompetence, political indifference and corruption to blame for it.

As a transportation professional who has been a bus and coach advocate for the past 45 years, as we collapse further from our disinterest and apathy, an old song seems more and more applicable and fair: “Don’t Blame Me.” As it rarely does, blame-placing accomplishes nothing. We have largely squandered one of the most important elements of public transportation. No improvements in technology – electric vehicles, driverless vehicles, light rail service – will ever make up for this. Only when every vehicle on the roadway is driverless will traffic decline (on freeways) – since the distance between vehicles at various “service levels” will be able to safety decrease. Otherwise, unless someone invents an app that can rebuild or repair one’s plumbing, lighting, heating and air conditioning devices (and every homeowner or renter owns and can operate a 3D printer), working remotely will only shave a slice of traffic from our midst.

Nor do we seem capable of reducing the number of hours we work – as Germany successfully did several years ago, when its workweek was cut to 32 hours. (Spread out evenly, this would reduce Germany’s commute-related traffic by 20 percent.)

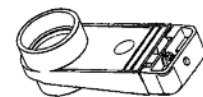
Without reducing work hours or employing alternative work schedules, we must try to optimize the remaining opportunities to employ every element of a public transportation system we can – including the creation of park-and-ride lots, and to reconfigure routes and schedules to take advantage of them. We must do our best to not squander the remaining opportunities to maximize the use of those elements of a public transportation system that remain at our disposal.

“Spilt milk” is a convenient cliché employed to rationalize the cost of failure. Spilt milk is still spilt milk. We have other tools still at our disposal. As we fall further and further behind in employing them, the one that holds the most potential for reducing traffic is alternative work schedules. For that reason, I began this series of installments with a short overview of that technology and its potential. It would become highly problematic if and when we run out of other tools. Designating land for park-and-ride lots is a powerful tool to help transit systems increase ridership and make a dent in traffic. Otherwise, we will soon need teleportation to avoid grinding to a near-complete halt.

*The opinions expressed in this article are that of the author and do not necessarily represent the opinions of National Bus Trader, Inc. or its staff and management.* □

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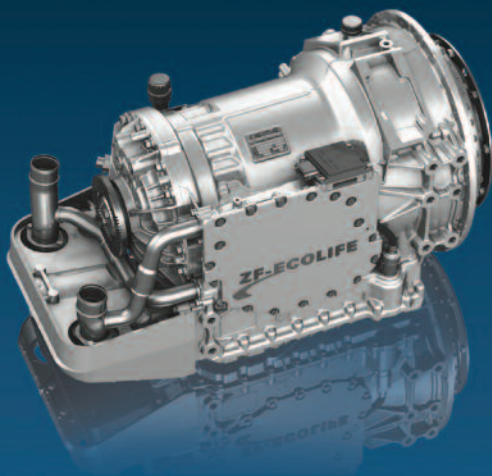


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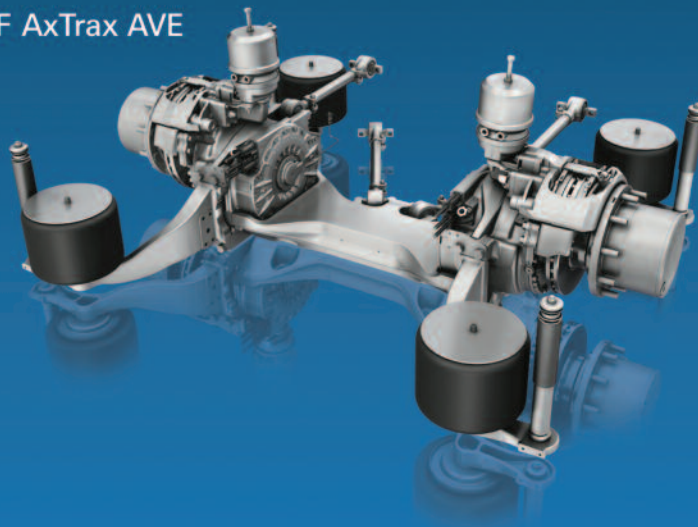
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# The Curious Coachowner

## Number 288 of a Series

“The Curious Coachowner” is a question and answer column that provides simple answers to simple questions that are too short to warrant a full article or inclusion in one of our regular columns. We will accept reasonably simple technical or historical questions on commercial coaches or converted coach shells by letter, fax, e-mail or phone. If our staff is unable to answer them, we will call upon our panel of experts. Names and addresses should be submitted with your questions, but we will withhold names from publication on request. We reserve the right to modify questions to make them more useful to our readers.

### **Q. Why are people in the United Kingdom talking about eliminating public transportation?**

— Transit Operator

A. This is really part of the ongoing battle between the group that supports autos and roads with the group that supports clean air and public transportation. The background is a little involved, and there are some new twists to it.

To begin with, much of Europe is suffering from an energy crisis because of the war in Ukraine. This is increasing energy prices and causing inflation.

You need to know that in the UK, the railroad infrastructure is owned by the government but private companies actually operate the trains. Lately, the railroad unions have been striking for higher wages because of inflation. However, rail ridership is down since the pandemic. As a result, the rail operating companies are reluctant to give raises without corresponding concessions on modernizing procedures to reflect the new reality and reduced ridership.

Several sources have suggested that the railroad unions are not helping themselves by striking. Since the primary problem is reduced rail ridership, the strikes are only driving more people away from riding the railroads.

Meanwhile, the unions have approached the government asking it to get involved to get them raises. So far, the government has offered some comments but has not really gotten involved. Years ago, the government did run the railroads but the cost of salaries

and pensions prompted them to privatize operations. Among other things, they are also looking for ways to help their National Health Service that is underfunded.

The former UK government under Liz Truss was allocating money for roadway improvements. The result is that the two opposing sides are trying to make their concerns known.

Clean air campaigners and pro-public transportation group are objecting to “car addiction” and spending on roadways. They note that there are 3.1 million more private cars registered in Britain than 10 years ago, with most of the increase in cities outside of London.

Meanwhile the pro-auto and road group has several arguments of their own. They question increased spending on the railroads and ask at what point does running the railroads become too expensive to continue?

Another argument is asking whether we really need public transportation. They suggest that in 20 years everyone will have access to an autonomous car powered by electricity. Unlike the trains, the autonomous electric car provides more convenient door-to-door service. Not mentioned is the fact that buses are in-between these because they can provide more customized service than the railroads.

Since the new UK government is squeezed for money, it will be interesting to see what direction or directions they take. This could provide solutions or suggestions for other countries.

### **Q. Why has there been a backlash against the major automakers building autonomous cars without mirrors, brake pedals and steering wheels?**

— Reader in New York

A. The story behind this is that both General Motors and Ford petitioned for exemptions to federal regulations to allow them to build 2,500 autonomous vehicles annually without mirrors, brake pedals and steering wheels. The automakers said that the cars would not be sold to consumers but would be used for ride sharing and delivery services.

Among those objecting is the National Association of City Transportation Officials (NACTO) who question the safety of the

vehicles. They ask that the petitions be denied until the automakers can prove that the autonomous cars are at least as safe as vehicles driven by reasonably prudent, licensed drivers.

This conflict has brought out two interesting items of information. The first is that until June of 2021, the National Highway Traffic Safety Administration did not require automakers to report when one of their technical systems was involved in an accident – even though almost all new cars sold today have at least one such feature.

When the numbers came in, the regulators discovered that these advanced automation systems were involved in far more crashes than expected. This past June, Automakers reported 392 crashes in the past 11 months that included six fatalities and serious injuries in five more. NACTO suggests that the vehicles are not as smart as some people think and they can be a danger to other vehicles and pedestrians.

The second interesting item brought out is that NHTSA does not have appropriate regulations for autonomous vehicles. Current regulations assume that the vehicle and the driver are two different things. However, with autonomous vehicles, they are the same. NACTO has a document titled “Blueprint for Autonomous Urbanism” that is now in its second edition. It sets out standards in this area that could be adopted into federal or other laws.

### **Q. Why do you include news and photos from several European bus builders and operating companies?**

— Several Readers

A. There are a couple of reasons for this. One is that several companies headquartered in other countries sell in the United States. This would include Van Hool, Irizar, Temsa, Daimler, BYD and ZF. Another point is that a lot of what goes on in Europe eventually finds its way to this side of the Atlantic. Noteworthy in this regard is the trend to battery-electric buses and the newer trend to hydrogen fuel cell buses. In addition, the European bus builders are very good about investing in marketing and getting information out to improve their sales.

*Answers not credited to other individuals are provided by Larry Plachno.* □



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## Down The Road

Coming events of interest to readers of NATIONAL BUS TRADER. Submissions for the department should be directed to the editor. Unless otherwise indicated, events are not open to the general public.

January 12-16, 2023. **UMA Motorcoach Expo 2023**. Orlando, Florida. For more information view [motorcoach-expo.com](http://motorcoach-expo.com).

February 2-8, 2023. **American Bus Association Marketplace 2023**. Detroit, Michigan.

March 15-18, 2023. **FMCA's 106th International Convention and RV Expo**. Georgia National Fairgrounds and Agricenter, Perry, Georgia.

March 28, 2023. **Pennsylvania Bus Association Marketplace**. Holiday Inn, Morgantown, Pennsylvania.

June 9-10, 2023. **Museum of Bus Transportation/AACA Museum Spring Fling 2023**. For more information view [www.aacamuseum.org/event/msuem-of-bus-transportation-spring-fling/](http://www.aacamuseum.org/event/msuem-of-bus-transportation-spring-fling/).





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