National Bus Trader

The Magazine of Bus Equipment for the United States and Canada

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Features

Cover Photo

Prevost's H3-45 has been a favorite in the upscale charter and tour market. In addition to providing several safety and driver features, it is supported by Prevost's extensive customer service network. The Prevost H3-45 is this issue's Bus of the Month on page 33. PREVOST.

Departments

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Equipment News

FlixMobility Planning Electric Coach Route from Seattle to Eugene

FlixMobility and MTRWestern are working on planning a new electric coach operation from Seattle, Washington to Eugene, Oregon. The limiting factor at this point appears to be the lack of electric vehicle charging stations.

A pilot program made two trips on November 28 using a Van Hool CX45E battery-electric coach. It left from Seattle with a full electric charge and arrived at Portland's Union Station with 30 percent charge remaining. At that point the coach went to the new Electric Island charging station on Swan Island to recharge batteries. After a three-hour charge, the coach continued on to Corvallis and Eugene.

While the pilot program illustrated the viability of this route, it also made it obvious that additional high-voltage charging stations for large vehicles would be necessary in order to use electric coaches on a regular basis. This pilot program follows on previous ventures by FlixBus to move to battery-electric coaches.

The first of these came on April 12, 2018 when FlixBus inaugurated the first 100 percent electric long distance bus line in the world between Paris and Amiens, France. The route connected the Amiens SNCF railroad station with Paris La Defense and required two hours and 15 minutes. Yutong ICE 12-meter buses were used with one round trip from Monday through Thursday and two round trips on the weekends.

Later that year, on October 25, 2018, FlixBus launched a similar electric coach route from Frankfort to Mannheim, Germany. The route included intermediate stops at Frankfurt Airport and Heidelberg. Two daily round trips were provided with the buses charging at the Mannheim Central Bus Station and at a temporary charging station in Frankfort.

After starting operations in the United States, FlixBus has been looking for potential electric coach routes here. The first of these tests took place on October 28, 2019 on a route from San Francisco to Sacramento, California. The bus used for the test was a battery-electric MCI D45 CRTe LE CHARGE. Other routes being considered for electric coach operation in the United States were Los Angeles to San Diego, New York to Philadelphia and the recently-tested Seattle to Portland.

FlixMobility and MTRWestern are planning a new electric coach route between Seattle, Washington and Eugene, Oregon. On November 28 they operated a Van Hool CX45E battery-electric coach on the route. FlixBus has experience with electric coach routes in Europe and has already run a test on a route from San Francisco to Sacramento.

Temsa Presents Their TS 30

Temsa, one of the leading players in the North American market, drew attention with its TS 30 model vehicle exhibited at the Chauffeur Driven and the National Limousine Association Show held in Grapevine, Texas. Singlehandedly providing sales and after-sales services to its customers through its North America structure, Temsa continues its growth in the market with its vehicles featuring high driving comfort.

Temsa continues to strengthen its presence in North America under the partnership of Sabanci Holding and PPF Group (Skoda Transportation). Having sustained its growth in the market even during the pandemic period, Temsa also continues to participate in the leading state, regional and national expos in the U.S., with its vehicles designed to meet higher standards.

Temsa has recently exhibited its TS 30 model vehicle at the Chauffeur Driven and the National Limousine Association Show, one of the most important organizations in the U.S. motorcoach segment and attended by more than 100 operators from different states, received full marks from the participants. Prioritizing driving comfort and creating added value for its business associates with its vehicles with high luggage volume and advantageous cost of ownership, Temsa carries the customer experience to a higher level in the motorcoach segment.

In his evaluations regarding the subject, Temsa North America Country Director Fatih Kozan expressed that the company gained substantial strength through the partnership of the Sabanci Holding and the PPF Group, and said, "With the strength we receive from our partners, we come together with our customers and business associates in North America that is among the top priority foreign markets for us and strengthen our presence in the market. As a company that has more than 1,400 vehicles in the market so far, we use and will continue to use our experience and customer-oriented approach to create more value for our business associates.

With the TS 30 that we have developed specifically for North America, while we carry the customer experience to a different level in the motorcoach segment, we present our business associates with high driving comfort and a very valuable cost of ownership."

Emphasizing that Temsa has substantial goals for the North American market, Kozan

added, "We will demonstrate our determination in this direction to all our business associates with the new events we will hold and the projects we will announce in the near future."

Temsa that showcased its assertion in not only the motorcoach segment but also the limousine market, with its TS 30 model vehicle, exhibited its custom-designed model that appeals to the market at the event. Tailor-made for the limousine market to provide VIP services to large groups, the TS 30 draws attention with its black exterior color option and aesthetic interior design.

With its TS 30 model vehicle, Temsa asserted itself not only in the motorcoach but also in the limousine market. Temsa displayed its custom-designed TS 30 model that caters specifically to the limousine market to provide VIP services to large parties.

Proterra Announces EV Battery Factory in South Carolina

As demand for commercial electric vehicles continues to grow across the United States and around the world, Proterra Inc., a leading innovator in commercial vehicle electrification technology, on December 14 announced plans to open a new EV battery system manufacturing plant in South Carolina to produce the company's industry-leading battery systems for Proterra Powered customers' commercial electric vehicles, including delivery and work trucks, industrial equipment, buses and more.

Proterra recently announced plans to open a new electric vehicle system manufacturing plant in South Carolina. Located in Greer, between Greenville and Spartanburg, the plant is expected to begin production in the second half of 2022. Proterra builds buses and other electric vehicles as well as supplying electric power systems to other manufacturers.

Proterra has committed to a minimum investment of at least $76 million, with additional investments planned over the next several years, and expects to create more than 200 new jobs over the next several years at the 327,000-square-foot battery system production plant. The factory is expected to launch in the second half of 2022 with multiple gigawatt hours of annual production capacity for Proterra's battery systems. By 2025, the factory is expected to support additional battery system production capacity, as well as the production of ancillary systems incorporated into electric medium- and heavy-duty electric vehicles and equipment.

Proterra's new battery system manufacturing facility will be located at the 42.76-acre Carolina Commerce Center in Greer, South Carolina near Proterra's electric bus manufacturing facility in Greenville, South Carolina and adjacent to the Greenville-Spartanburg International Airport. By opening the company's first EV battery system factory in the East Coast of the United States, Proterra will bring battery production closer to its Proterra Powered customers and its own Proterra Transit electric bus manufacturing operations.

"Electric vehicle technology is an opportunity to create clean energy jobs, strengthen American manufacturing and advance the U.S.'s climate leadership on a global scale. Through opening our new battery system production plant, Proterra is proud to help realize these important goals while driving the transition to clean, quiet transportation with our EV technology," said Gareth Joyce, president of Proterra. "With our company's history in South Carolina and the Upstate region, we are excited to build on our strong partnership with the state of South Carolina, Spartanburg County and the City of Greer and bring EV battery system manufacturing to the region."

"Today's announcement by Proterra is further proof that South Carolina is leading

The staff of Temsa North America showed off their TS 30 model coach at the recent show in Grapevine, Texas. Under the partnership of Sabanci Holding and PPF Group, Temsa continues to strengthen its presence in North America. Their 30-foot TS 30 coach offers big coach features and amenities in a 30-foot length for smaller groups.

the charge in the electric vehicle revolution. We applaud Proterra for the work they're doing to create a more sustainable future for the transportation industry and look forward to their continued success in the Upstate," said South Carolina Governor Henry McMaster.

Facemasks Required Through March

Matthew Daus Esq. announced that The Biden administration will extend the requirement that passengers on domestic flights, trains and public transportation wear facemasks through mid-March 2022 amid concerns about the new Omicron coronavirus variant. President Biden will announce the policy as part of a broader effort to combat the COVID-19 pandemic during the winter months.

The Transportation Security Administration (TSA) plans to extend the mask requirement through at least March 18, according to a White House fact sheet. The TSA last extended the mask mandate in August through January 2022. Under the rules, individuals who do not comply with the mandate will face a minimum fine of $500 with repeat offenders facing fines as high as $3,000.

The Centers for Disease Control and Prevention currently recommends people wear face masks in areas of high transmission of the coronavirus. Public health officials have urged mask use, particularly in crowded indoor settings, especially in light of the new Omicron variant. The administration has not instituted testing or COVID-19 vaccine requirements for domestic travel, as it has for international flights, though officials have indicated such requirements are not off the table.

Van Hool Builds First Battery-Electric Double-Deck Coach

Van Hool, the independent Belgian bus, coach and industrial vehicle manufacturer is the first manufacturer in the world to build a 100 percent battery-electric, double-deck coach – the TDX25E. The vehicle provides space for 69 passengers (18 on the lower deck and 51 on the upper deck) and has a range of up to 500 km (310 miles), depending on the climatological conditions and the route's topography. The TDX25E is destined for the U.S market, where it will be used for comfortable employee commutes and/or regular passenger transport.

Exactly a year ago Van Hool shipped its first 100 percent battery-electric coach, the CX45E, to the U.S. With 22 units sold, the company is once again demonstrating its innovation based on its vast experience in electrical drive systems. Over the past few decades Van Hool has built more than 1,200 vehicles with an electrical drive system (hydrogen, trolley, battery and hybrid). Both the CX45E and the brand new TDX25E use

Van Hool recently introduced the first battery-electric double-deck coach. It combines the electric battery power technology of its existing single-deck Van Hool CX45E coach with its popular double-deck model to create the battery-electric TDX25E model. This new model will seat 69 passengers with 18 on the lower deck and 51 on the upper deck.

electrical components, including a Siemens power train and Proterra batteries.

Filip Van Hool, CEO of Van Hool, explains: "American customers reacted very enthusiastically to the driving experiences with our first battery-electric coach, the CX45E. This prompted us to quickly set to work on developing a battery-electric, double-deck, which has a higher passenger capacity. Our experience with electrical drive systems in the past, and recently with the CX45E, really helped us with rapid development and comprehensive testing of the newest Van Hool double-deck, the TDX25E."

"We've been producing double-deck coaches since 1982. Twenty-five years later – in 2007 – we shipped the first double-decks to the U.S. And now, 15 years later, we are launching the first 100 percent battery-electric, double-deck coach on the U.S. market. This is a second home market for Van Hool; nowhere else in the world is the demand for our double-deck coaches higher than the U.S. Globally, Van Hool has sold more than 3,500 units in 19 different countries," Van Hool says.

"The partnership between Van Hool and its distributor on the North American market, ABC Bus Companies, Inc. began 34 years ago. After all these years of hard work, together we have managed to put Van Hool on the map in North America. Today there are more than 11,000 Van Hool coaches and buses on North American roads serving many customers, including a number of large Silicon Valley companies who organize shuttles for their employees. Due to demand from several customers for fully electrically driven vehicles, we at Van Hool looked for a solution," concluded Van Hool.

Van Hool is an independent Belgian bus, coach and industrial vehicle manufacturer. The company, which was founded in 1947, is based in Koningshooikt. In 2022, the company turns 75. The vast majority of units produced are destined for Europe and North America. Van Hool has around 3,500 staff worldwide, the majority of whom work at the production facilities in Koningshooikt (Belgium) and Skopje (North Macedonia).

Proterra to Supply Battery Technology for Lightning eMotors

Proterra Inc., a leading innovator in commercial vehicle electrification technology, recently announced an expansion of its partnership with Lightning eMotors to power their Class 4 and Class 5 electric commercial vehicles with Proterra's industry-leading battery technology. Under a new multi-year supply agreement, Proterra contracted to supply battery systems totaling more than 900 megawatt hours in battery storage to Lightning eMotors to power up to 10,000 electric commercial vehicles between 2022 and 2025.

This includes supplying Lightning eMotors with Proterra H Series battery systems for its strategic partnership with Forest River to co-produce and deploy Class 4 and

Class 5 zero-emissions, battery-electric shuttle buses.

The expansion builds on Proterra's previously announced collaboration with Lightning eMotors to power the Class 3 Lightning Electric Transit commercial van using Proterra battery technology. Proterra will now also supply its battery technology to Lightning eMotors for the Lightning Electric E-450 and Lightning Electric F-550 electric commercial vehicles.

"We are delighted to build on our relationship with Lightning e-Motors and to extend our battery technology into a greater number of electric commercial vehicles, including delivery trucks, work trucks, shuttle buses and more," said Chris Bailey, president of Proterra Powered & Energy. "Together with Lightning eMotors, we're demonstrating how American technology and manufacturing can lead the way towards a future driven by zero-emission, battery-electric commercial vehicles."

"We are thrilled to be expanding our relationship with Proterra to power our class 4 and 5 platforms," said Chelsea Ramm, vice president of Global Supply Chain at Lightning eMotors. "Proterra battery packs are rightfully perceived by the market as a quality product which gives us both peace of mind for our customers and helps us during the sales process."

The Lightning Electric Transit van is a purpose-built Class 3 commercial electric

Proterra recently expanded its partnership with Lightning eMotors to supply its battery technology for more models. This includes the Lightning Electric E-450 and Lightning Electric F-550 electric buses and commercial vehicles. They will be available as shuttle buses with the various Forest River bus bodies and as delivery trucks, work trucks and ambulances.

vehicle that is available in several popular configurations including last-mile cargo vans, passenger vans, ambulances, school buses and work vans.

The Lightning Electric E-450 and F-550 commercial electric vehicles are available in a shuttle bus configuration utilizing the various Forest River bus body options, and as a truck including middle mile/last mile delivery trucks, ambulances and work trucks. Both platforms are planned to have 80kWh-160kWh of Proterra battery packs.

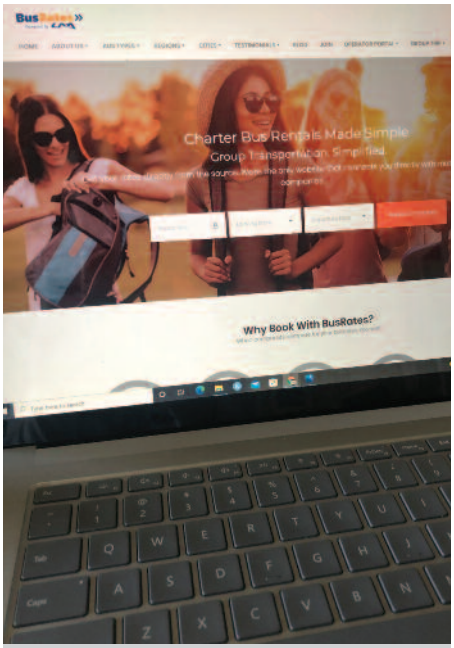
Designed and manufactured in the United States, Proterra battery systems leverages industry-leading energy density and a customizable design to fit within a variety of vehicles. Proterra's best-in-class battery systems have been proven through more than 20 million service miles driven by Proterra transit vehicles and selected by world-class commercial vehicle manufacturers to power construction equipment, delivery trucks, school buses, coach buses and low-floor cutaway shuttles.

BusRates.com Chooses On Your Mark Transportation for Marketing

BusRates.com Inc., the national portal that connects motorcoach and luxury transportation services directly with the consumer, has announced a partnership with On Your Mark Transportation LLC to increase marketing efforts. On Your Mark Transportation LLC is a consulting firm specializing in the ground passenger transportation industries and is headquartered in Nashville, Tennessee.

"It is truly an honor to be chosen by BusRates.com Inc. to increase its market awareness to both the consumer as well as the industry itself," says Mark L. Szyperski, president and CEO of On Your Mark Transportation LLC. "This unique portal is so important to connect companies with consumers across the United States and Canada."

BusRates.com Inc. launched in 2004 and was brought under the United Motorcoach Association banner in 2011. BusRates.com was developed as a place for consumers looking for qualified ground transportation to get quotes directly for service from the provider itself, allowing them to avoid a middleman, such as a bus broker. As a ground transportation provider, a company can place its information into a profile on the BusRates.com portal so that when a customer, for example in California, is looking for a motorcoach company in Nashville or Chicago, they will be directly connected with that company to get quotes and information. Then, if they choose that company, they can communicate directly with them for pick up, payment and other important information, without going through a third party.



BusRates was founded in 2004 and was brought under the United Motorcoach Association banner in 2011. It connects consumers looking for charters and ground transportation with local companies that can fill their needs

Larry Killingsworth, interim president and CEO of UMA, described BusRates.com as a sort of hotels.com for ground transportation. "If you want to move a school group of some kind to Alabama for a day trip, for example, we would be a great site to come to," he says. "You could put in your trip specs and the site would provide your motorcoach company choices. The consumer can read about each company and choose to get quotes from any of them. Those companies will in turn get back to the consumer with a quote."

The problem with a third party, Killingsworth explains, is that the consumer is not getting information directly from the company they are hiring. If you search renting a bus in a particular city, sites may pop up. When those links take you to a broker, that third party is just taking your information, farming it out to bus companies and taking a cut for themselves.

"They are acting as an unnecessary middle person, and at times, some are disreputable," he adds.

Not only does BusRates.com benefit the consumer, but it also benefits motorcoach operators, Killingsworth explains. "Motorcoach operators can use the site to reach out to consumers in new ways and attract new customers they might not otherwise get," he says.

Much of the motorcoach and ground transportation industry consists of small private operators, with a small number of buses, or limos, for example. Advertising and gaining new customers can be especially difficult for these businesses. "As a nonprofit, our role at UMA is to help these businesses be successful, and one way we can do that is through BusRates.com, where we can provide them with useful quote requests through the marketplace," he says.

One thing these businesses need to remember, Killingsworth states, is to respond to requests for quotes in a timely manner. Customers expect near instant responses, and small businesses should be aware that even contacting the customer to let them know you will work up a quote is important. "And don't respond in industry lingo," he adds. "The customer just wants safe, dependable travel."

Roxana Melgar, general manager of BusRates.com, said businesses should reach out to potential clients to make sure they understand their needs and then deliver clear proposals. In an article for *Bus and Motorcoach News*, she writes that businesses should also make sure to follow up and then stay connected with customers who reach out for quotes.

Any passenger ground transportation company can get signed up with BusRates.com by going to the portal and filling out the information form on the Web site. This profile page is what the consumer will see direct when doing a search either locally, or nationwide, for passenger ground transportation services. A company can list information such as number of pieces of equipment, types (motorcoach, school bus, mini-coach, limousine) and other items they feel may be important to the client. The client then puts in their search requirements (location, type of equipment, etc.) and the site pulls up those companies that meet that search criteria entered. Then the consumer can reach out directly to the provider for additional information directly.

"This system is so important to our industry," says Szyperski. "It allows for every passenger ground transportation provider to have international marketing abilities through Web searches. It will be my team's objective to get that message out to both providers and consumers through various marketing programs, including social media, videos and press media, to name a few."

BusRates.com partners with Web FX for search engine optimization and United Bus Technology for optimizing the Web site. The site is updated and user friendly, and they have seen more than a doubling of requests

for quotes in 2021, as the market has recovered since the COVID pandemic, Killingsworth says.

More information about BusRates.com Inc., can be found at www.BusRates.com. To find information about the services provided by On Your Mark Transportation LLC, visit www.OnYourMarkTransportation.com.

NFI Announces Battery-Electric Bus Order from the University of Michigan

NFI Group Inc. (NFI), a leading independent bus and coach manufacturer and a leader in electric mass mobility solutions, announced on November 16 that its subsidiary New Flyer of America Inc. (New Flyer) has received an order from the University of Michigan-Transportation Services (U-M) for three zero-emission, battery-electric Xcelsior CHARGE NG™ 40-foot transit buses and one 60-foot articulated Xcelsior CHARGE NG™ bus (for a total of five equivalent units, or EUs). The contract has a base term of one year with 13 one-year renewals terms, and marks New Flyer's first bus order from U-M. The contract also includes options for up to 50 Xcelsior® heavy-duty transit buses in 35-, 40- and 60-foot lengths in both electric and diesel propulsion.

U-M operates a large alternative-energy vehicle fleet. With nearly 1,000 vehicles in its fleet, the university has committed to achieving university-wide carbon neutrality by 2040.

"NFI is proud to support U-M's commitment to sustainability with our advanced battery-electric buses," said Chris Stoddart, president, North American Bus and Coach. "Drawing on over 50 years of engineering experience in zero-emission mobility, our EVs offer up to 250 miles in range on a single charge and will immediately reduce greenhouse gas emissions, delivering cleaner, quieter, more sustainable mobility to the U-M community."

Introduced in 2021, the Xcelsior CHARGE NG bus incorporates three distinct technology advancements, including high-energy batteries that extend range up to 13 percent, advanced protective battery packaging for easy install and simpler serviceability, and a new lightweight electric traction drive system with up to 90 percent energy recovery. For more information visit newflyer.com/ng.

NFI is a leader in zero-emission mobility, with electric vehicles operating (or on order) in more than 80 cities in five countries. NFI offers the widest range of zero-emission battery and fuel cell-electric buses and coaches, and the company's vehicles have completed more than 50 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 4,000 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 todays' urban demands for scalable smart mobility solutions. Together, NFI is enabling more livable cities through connected, clean and sustainable transportation.

With 8,000 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 New Flyer 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.

ABC Companies has expanded its Turtle Top distribution partnership to now include the Northeast, Southeast and Southwest regions. Turtle top offers a wide range of vehicles including shuttles, transit, paratransit, airport, hotel and other applications. Battery-electric chassis options allow buyers to opt for zero-emission vehicles too.

ABC Expands Turtle Top Distribution Partnership

ABC Companies, a leading provider of motorcoach, transit and specialty passenger transport equipment in the U.S. and Canada, has expanded its distribution agreement with Turtle Top to offer its popular Odyssey, Terra Transit and Vanterra product line in locations covering the eastern seaboard from Georgia to New York State, as well as the states of Oklahoma and Texas. The Turtle Top conversions will be available on a number of premium performance chassis including the Ford E350, E450, F550 and F600 and Freightliner S2C, for flexibility in almost

any application. ABC will offer combustion and 100 percent battery-electric versions of popular models, providing EV options for Turtle Top premium shuttles with numerous seating configurations to accommodate up to 34 riders and multiple wheelchair options. The expansion strengthens ABC's position in the passenger van and shuttle space as micro transit and on-demand services are rapidly expanding.

"We are excited to expand distribution of Turtle Top products for our customers with these high-quality commercial passenger vehicle options that can bring greater service flexibility and proven quality to their operations," said Thom Peebles, vice president, marketing, ABC Companies. "These proven performers can help customers take advantage of the growing needs in their municipal and regional communities for micro-transit, mobility as a service and paratransit applications, as well as applications from airport shuttles to premium passenger transport operations." For fleets who are integrating zero emissions vehicles, the battery-electric chassis options from ABC Companies provides a scalable EV solution built on industry-leading proven technologies.

"Customer service excellence is a shared core value at Turtle Top and ABC, and we are excited to bring our strong reputation for service and parts support to the passenger van and shuttle market, enhancing our customers' competitive advantage," said Roman Cornell, ABC president /chief commercial officer. "Delivery of the vehicle is a small part of the ownership cycle, and ABC believes that our continued service and support of our customers is what sets up apart and has been the hallmark of our success," continued Cornell. "ABC Companies offers a comprehensive portfolio of service, parts, warranty and customer care support behind every sale. This approach ensures the high quality of our Turtle Top products will be supported with equally high standards of service for our shared customers," added Matt Sausaman, general manager – Turtle Top.

Offered through ABC's SVT (Special Vehicles and Technologies) division, Turtle Top buyers can expect the same levels of technical expertise, comprehensive service and parts support that ABC is renowned for in the private motorcoach industry. The SVT division is focused on discovering and bringing innovative solutions and strategies to market that offer transformative mobility options to ABC customers. "Our dedicated SVT sales team specializes in helping customers seamlessly onboard these new products to ensure smooth operations from day one," said Cornell. "Our 'Make it Happen' approach is based on exceeding customer expectations and simplifying fleet integration for private and public operations, including those who are readying for zero-emissions adoption." For more information on ABC's growing portfolio of products and services, visit abc/companies.com.

ZF Connecting Bus Fleet with ZF Bus Connect

A large vehicle fleet is an interplay of many moving parts: vehicles, drivers, electric power, combustion engines. Routes, fuel, consumption, regulations and legal requirements must work together in harmony for smooth and efficient operation.

ZF Bus Connect is a new product which caters to the needs of bus fleet operators. As an advanced fleet management tool, ZF Bus Connect enables public transport or private bus operators to enhance and improve efficiency and performance of their fleets:

- Safety: Geofencing and monitoring of driver's behavior to detect dangerous bus driving situations to prevent accidents and to protect against theft.
- Efficiency: Live data evaluation on a per-bus basis allows optimization of driving and route plans and improves fuel consumption.
- Uptime: Predictive remote detection of damages or wear and tear of consumable items compatible with real-world bus configurations as well as diagnosis and secure "over the air" updates to reduce downtime.

ZF Bus Connect is developed for city buses and coaches with both electric and combustion engines or hybrid systems also in a mixed fleet. The user can check every aspect of the vehicle, including live view of vehicle locations in real-time, observe current energy or fuel consumption, check the status of battery charge or maintain status of the vehicle's parts, brake wear and other system messages.

"With ZF Bus Connect we are helping the bus operators with their difficult change to all-electric fleets," explained Florian Freund, responsible for the ZF Bus Connect development. "With the power of data-analytics of in-vehicle data we are helping operators to manage their fleet efficiently by reducing the energy or fuel consumption whilst giving a clear overview to the CO_2 footprint fo the fleet."

ZF Bus Connect digital solution covers three areas: The On-Board Unit in the vehicle, the cloud, and the Web-based portal for data analytics. Fleet operators have the possibility to purchase this all-in-one solution from ZF as a package or to connect to the cloud solution with their own compatible on-

ZF recently announced their new ZF Bus Connect product particularly geared towards the bus industry. It can be used with transit buses as well as coaches to improve efficiency and performance of their fleets. The ZF Bus Connect can be used with any type of vehicle power including electric, combustion and hybrid systems.

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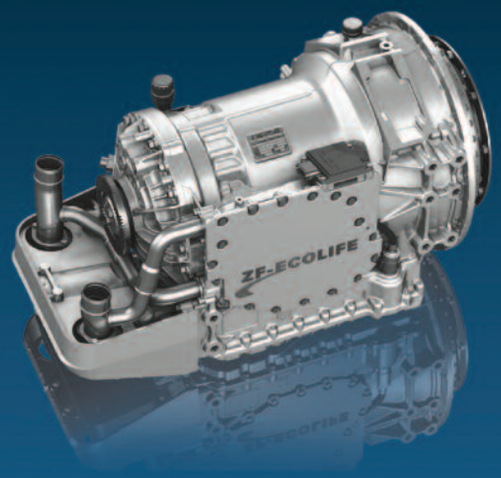
ZF Ecolife



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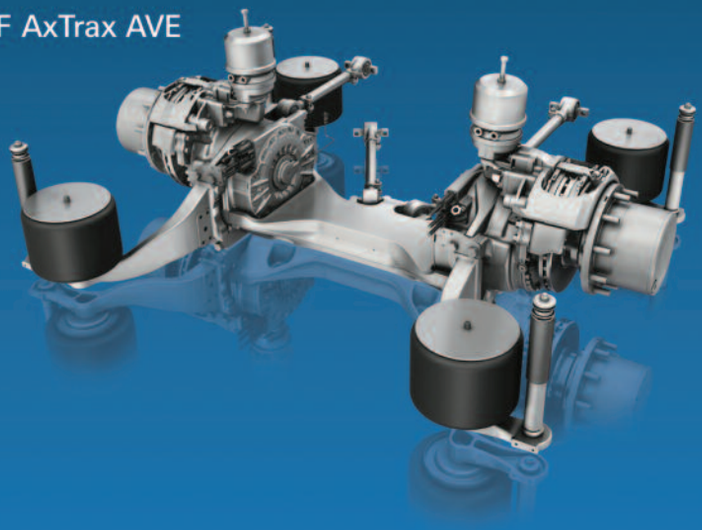

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see. think. act.

ZF

board unit and access the information via the portal as a third-party solution.

Based on the know-how of ZF's current bus connectivity solution supporting more than 10,000 buses worldwide, ZF has developed the ZF Bus Connect digital solution. To date, five fleets have converted to the new generation of solution. The solution was developed in the ZF Group's Data Venture Accelerator, which is a worldwide hub for digital business within ZF's global research and development. It was set up to support and accelerate product developments whose ideas and concepts have successfully proven their added value and technological feasibility – from initial realizations to mature digital products and services.

For more information about ZF Bus Connect, visit www.zfbusconnect.com.

CVSA Adopts North American Fatigue Management Program

The Commercial Vehicle Safety Alliance (CVSA) is now home to the North American Fatigue Management Program (NAFMP), a comprehensive educational and training program aimed at preventing fatigue-related risks and crashes and cultivating a corporate safety culture that proactively works to eliminate driver fatigue.

As an organization comprised of law enforcement jurisdictions, motor carriers, trucking organizations, safety associations and federal agencies committed to eliminating crashes on our roadways, CVSA was tasked by the Federal Motor Carrier Safety Administration (FNCSA) with the management and evolution of the NAFMP. The NAFMP steering committee also includes Transport Canada, working closely with FMCSA to support the program.

"Our goal at CVSA is to prevent crashes involving commercial motor vehicles," said CVSA President Capt. John Broers with the South Dakota Highway Patrol. "Offering the North American Fatigue Management Program as one of the Alliance's driver-related educational programs helps us do our part to combat crashes caused by driver fatigue and exhaustion."

"CVSA has the ideal infrastructure of events and channels of communication to foster the NAFMP," said NAFMP Steering Committee Chair Roger Clarke. "FMCSA is excited for this additional opportunity to partner with CVSA to address driver fatigue," said FMCSA Deputy Administrator Meera Joshi. "FMCSA has supported the NAFMP since its inception and looks foward to CVSA continuing to provide this important program to educate the motor carrier industry on driver fatigue."

Alexander Dennis recently revealed the new special livery for the autonomous buses launching in Scotland in 2022. Four Alexander Dennis Enviro200 buses will be used on a 14-mile route between the Edinburg Park transport hub and the Ferrytoll Park & Ride in Fife that crosses the Forth Road Bridge. The route is expected to carry up to 10,000 riders per week.

The NAFMP was developed by medical and sleep scientists from Canada and the United States through a multi-year, four-phase comprehensive process. The program aims to prevent driver fatigue and eliminate fatigue-related crashes by:

- Offering easy-to-access online fatigue prevention training and education to commercial motor vehicle offering easy-to-access online fatigue prevention training and education to commercial motor vehicle drivers, motor carrier executives and managers, freight shippers and receivers, dispatchers, driver managers, drivers' spouses and families, safety managers and trainers, etc.
- Encouraging a motor carrier safety culture that proactively considers situations that may contribute to driver fatigue and fights to prevent it
- Identifying sleep disorders and treatment options
- Utilizing driver fatigue management technologies

In addition, CVSA plans to enhance, improve and grow the program by:

- Hosting live and recorded Q&A sessions
- Offering a moderated forum where users may ask questions and provide feedback
- Offering information sessions at CVSA events and conferences
- Hosting program and steering committee meetings to discuss program improvements
- Offering webinars on various topics relevant to fatigue management
- Offering Spanish content in addition to English and French

Learn more about the NAFMP and how to implement a fatigue management program by visiting the NAFMP Web site. There you can download a step-by-step implementation manual and register in the eLearning platform for the program courses.

"This program has the potential to reduce fatigue-related risks, improve driver alertness, health and wellness, increase productivity and decreases crashes and roadway fatalities," said Broers. "The online training and education courses available through this program are free, voluntary, self-paced and available 24/7. We encourage all drivers and motor carriers to utilize these online tools."

For more information contact CVSA Fatigue Management Program Specialist Rodolfo Giacoman at (301) 830-6155.

This program was made possible through an international partnership of law enforcement jurisdictions, federal agencies, academics and motor carrier stakeholder groups.

UK's First Full-Sized Autonomous Bus Service

Alexander Dennis Limited (ADL), a subsidiary of NFI Group Inc. (NFI), one of the world's leading independent global bus manufacturers, announced on November 19 that in partnership with Stagecoach, Fusion Processing and Transport Scotland, it has revealed the first glimpse of the new

special livery for the autonomous buses launching in Scotland in 2022.

It is the next key milestone in the CAVForth trial which will see full-sized autonomous buses running on UK roads for the first time next year. The new service will be made up of four Alexander Dennis Enviro200 single-deck buses running a 14-mile route crossing the iconic Forth Road Bridge. It will provide capacity for up to 10,000 passengers a week, connecting Ferrytoll Park & Ride in Fife with the Edinburgh Park transport hub and is expected to be popular with commuters, students, day trippers and tourists as well as novelty riders keen to be first to say they have been driven by a computer.

The new service will make it easy for people to switch to public transport by providing a brand new bus route in the heart of East Scotland. It comes on the back of the COP26 climate change summit where bus operator Stagecoach said that the fastest way to make progress towards the UK's net zero ambitions is by people switching from making car journeys and instead traveling by public transport, cycling or walking.

The four Enviro200 buses, which will feature the special new livery, are currently being fitted out with the groundbreaking sensor and control technology developed and supplied by project lead, Fusion Processing Ltd., that allows them to become computer-driven. The vehicles are also being put through their paces with an array of virtual and track testing to ensure all systems are functioning as expected before on-road testing begins later this year.

The colors and design were chosen through consultation with local communities and a decision made to ensure the vehicles stand out on the road. The design of the livery is intended to ensure that it still feels ike a regular bus while also acknowledging the array of project partners who are making this world-leading pilot service a reality: Stagecoach, Fusion Processing, ADL, Transport Scotland, Edinburgh Napier University, Bristol Robotics Lab, University of the West of England, as well as the Centre for Connected and Autonomous Vehicles as funding partner.

Scottish Minister for Transport Graeme Dey said, "This is another welcome step forward for the incredibly exciting Project CAVForth, as we move closer to seeing it go live next year. This type of innovation shows Scotland is very much open for business when it comes to trialling this technology. This groundbreaking and globally significant project will really help the country establish its credentials on the world stage."

Sam Greer, regional director for Stagecoach in Scotland, said, "We are all very excited to be marking the next major milestone in our autonomous bus project, with buses planned to be on the road in early summer next year. The new service will provide a bus link between Fife and Edinburgh Park which currently does not exist and we hope will encourage more people to ditch the car, skip traffic jams and enjoy a relaxed journey in a dedicated bus lane and with new innovative state-of-the-art technology."

Keolis recently started a 10½-year contract to operate commuter bus service between the cities of Gothenburg and Borås in the west of Sweden. The fleet consists of 22 brand new double-deck biodiesel Volvo buses that are 48 feet long and seat 75 passengers. Gothenburg is Sweden's second largest city with a population of 550,000 while Borås has more than 65,000 residents.

Paul Davies, ADL president and managing director, said, "As the UK bus industry's innovation leader, we are constantly exploring new ways to further increase efficiency and safety. The trial of the UK's first full-sized autonomous bus service gives us an outstanding opportunity to gain real-world experience. We are also working closely with our colleagues across NFI Group who are developing similar, promising projects."

Jim Hutchinson, Fusion Processing Ltd. CEO, said, We are delighted to be leading on the world's most complex and ambitious autonomous vehicle program. CAVForth is an exciting pilot service and a great demonstration of our automated vehicle technology. The vehicles are fitted with CAVstar, our automated driving system which combines our own hardware and software to create, safe, AV Level 4 full-sized buses. The buses will be operating on a 28-mile round trip route that includes motorways, single carriageway A-roads, minor roads, bus lanes, roundabouts and junctions with and without traffic lights. We believe it will be the most comprehensive autonomous bus demonstration to date."

Keolis Running Double-Deck Buses in Sweden

Keolis Sverige, Keolis' subsidiary in Sweden, started operating the 65km-long commuter route between Gothenburg and Borås as part of a 10½-year contract awarded to Keolis in December 2019. Gothenburg is Sweden's second largest city with more than 550,000 inhabitants. Borås, with more than 65,000 inhabitants, lies 70km east of Gothenburg. The network serves 1.3 million passengers per year, with the existing fleet replaced by 22 brand new double-decker biodiesel Volvo buses.

The buses, fitted with 75 seats each, offer passengers a comfortable on-board experience where they can connect to Wi-Fi and use the USB sockets for their portable devices. For the youngest passengers, there are integrated child seats. Each bus is 14.36 meters long and 4.25 meters high.

The route, which runs between central Gothenburg and central Borås, includes a stop at the transport hub in the events district of Korsvägen, home to the Swedish Exhibition and Congress Centre, the Gothia Towers hotel, the Universeum science centre, the

Museum of World Culture, the Scandinavium arena, the Liseberg amusement park and the University of Gothenburg.

Ahead of the start of services, Keolis Sverige provided special training for its 45 drivers and mechanics for the safe operation and maintenance of the double-decker buses in their depots in Gothenburg and the newly built depot in Borås.

Keolis Sverige has been present in Sweden since 2003 and operates 1,600 fossil-free buses in four regions of the country, covering 82 million kilometers every year. Keolis has more than 4,500 employees in Sweden.

New VDL Citeas for De Lijn

The long-standing cooperation between VDL Bus & Coach and the Flemish public transport company De Lijn has reached a new milestone. With the delivery of 24 new generation Citeas, part of a new framework contract, the milestone of more than 1,000 VDL buses operating under the Flag of De Lijn throughout Flanders and Brussels has been reached.

It is also the first time that De Lijn has ordered the new generation of Citeas. This concerns the Citea LF-122 type in a two-door and a three-door variant. The new city buses from VDL Bus & Coach are entirely based on an electric drive train and have trendsetting features. The e-buses have a 490 kWh battery pack and are ideally suited for city and regional transport, offering a high level of service.

Filip Malefason, managing director VDL Bus & Coach Belgium, said, "VDL Bus & Coach is proud to continue the transition to electric buses together with De Lijn. We are happy to use our knowledge and experience as an innovative partner in the field of electric public transport to contribute to Flanders' climate objectives. What is so special about this agreement is that we have reached the milestone of 1,000 delivered buses since 2015. That is typical of our good, long-standing cooperation. The new order will be produced at VDL Bus Roeselare, where the construction of a new energy-neutral facility for the production of our new generation Citeas recently got underway."

The new generation of Citeas can be seen in Flanders from 2023. Ann Schoubs, director general of De Linj, said, Sustainability, and sustainable mobility in particular, is an important part of De Lijn's business strategy. We want to reduce our ecological footprint by investing in an integral greening of our fleet and a sustainable approach to our activities. This order for electric buses from VDL Bus & Coach is therefore a further important step in De Lijn's greening process. We look forward to the delivery of these buses in the autumn of 2022 to prepare them for use in 2023."

VDL Bus & Coach has become one of Europe's leading players in the field of e-mobility. VDL has been active in the field of electric transport for more than 25 years. Since the introduction of the first Citea SLF-120 Electric in Geneva, during the UITP Mobility & City Transport exhibition in 2013, VDL Bus & Coach has focused strongly on electric mobility.

In 2021, VDL Bus & Coach presented the new generation of electric Citeas. Starting from the VDL vision, a bus concept has been developed that is entirely based on an electric drive train and ready for the future, with zero emissions being a matter of course. Among other things, VDL Bus & Coach is introducing an innovative composite sidewall construction that is 15 percent lighter than a conventional sidewall. The battery pack is integrated into the floor as standard.

In 2021, VDL Bus & Coach has continued to make a name for itself as a leading transition partner on the road to zero-emission public transport. With a total of more than 900 electric buses in 11 countries, delivered between 2015 and 2021, VDL Bus & Coach has a market share of 20 percent in Europe. The 100 million electric kilometers achieved in February of this year represent a savings of more than 14.7 million kilograms of CO_2 emissions.

VDL recently delivered 24 new generation Citeas to De Lijn, bringing the total number of VDL buses in their fleet to more than 1,000. The new buses have an electric drive train and a 490 Kwh battery pack. De Lijn operates bus services in Belgium as well as some tram routes.

43 Irizar Buses for Guimarães, Portugal

The Irizar Group continues expanding in Portugal and will supply 43 buses and coaches to Guimabus, the company that will operate the transport concession in the municipality of Guimarães for a period of 10 years. Operator Guimabus, from the Vale do Ave Group, is acquiring 17 zero emissions Irizar ie bus electric buses and 26 low-entry diesel Irizar i3 coaches, in addition to nine chargers for slow charging in the garage. These vehicles will drastically reduce noise and CO_2 emission levels.

The Irizar Group has won the acquisition contract for 43 buses and nine chargers for the urban public passenger transport services for Guimarães. In total, 17 of the buses are electric Irizar ie bus zero emission 12-meter long buses; 16 are urban Class 1 diesel buses and 10 are class II intercity diesel buses, both Irizar i3 low-entry models that are 12 and 12.75 meters long respectively. Alongside the electric vehicles, nine 150 kWh chargers from Jema Energy (an Irizar Group company) will be provided. The chargers will be installed in the garages for charging the buses at night.

One common characteristic of all the buses is that they are equipped with a low floor and PRM platform for passenger accessibility and they have a space inside reserved for PRM, in addition to fire extinguishing systems. In addition to the buses providing the environmental benefits of zero CO2 emissions and low noise levels, especially the electric ones, they stand apart because of their modern attractive design and because comfort, accessibility and safety are maximized. These vehicles will completely renew the current fleet of the Guimarães urban and municipal services and drastically reduce emissions levels. All the vehicles will be delivered this year.

The Irizar Group is thus gaining ground and consolidating their presence in Portugal in the occasional, intercity and urban markets. Bigger every day, small and medium companies are choosing Irizar with complete confidence. Guimarães is a Portuguese city and municipality in the Braga

district and its historic center surrounded by walls has been declared a world heritage site by UNESCO. It is a city with rich medieval history and it has a large number of buildings full of character from that time, which makes it a perfect tourist destination.

Guimabus is the company that runs the mass transit services for travelers in the municipality of Guimarães. It is led by the Salgado family and it belongs to Grupo Vale do Ave. Their strong commitment to modernizing and electrifying their fleet means progress for the city that will connect passengers and visitors in a cleaner, more efficient and safer way.

Marcopolo Exports 472 Buses to Africa

Marcopolo shipped the first batch of 109 urban buses out of a total of 472 units acquired by Scania West Africa, which will be supplied to the operator SOTRA – Société des Transports Abidjanais – for use in Abidjan's transport system in Côte d'Ivoire. The vehicles of the Viale BRS, Viale BRS Articulated and Volare models will be delivered in monthly batches until July 2022.

"This deal demonstrates all of Marcopolo's commitment to developing new businesses and markets and reinforces our significant and growing presence on the African continent," emphasizes Ângelo Luis Corsetti Oselame, Marcopolo's foreign market commercial coordinator for the Middle East and Africa region. According to the executive, just in the last six years the company has exported around 5,000 buses to more than 20 countries in Africa.

Marcopolo's presence in Africa has grown significantly in recent years. In 2018, the company had already supplied 500 Torino urban model buses for the Avante Project, Angola's School Mobility Program, and another 300 BRT bus units to Nigeria, in partnership with Scania. In 2019, there were other BRT vehicle units sent to Nigeria and, last year, another 440 vehicles to the Democratic Republic of the Congo and 130 urban vehicles to Angola.

To meet the needs of the operator SOTRA, Marcopolo will establish local support and help Scania in servicing and performing maintenance on vehicles, with a technical assistance and spare parts center in Abidjan. With this deal, there are more than 1,000 units of Viale model driving in countries in West Africa (West Africa).

Marcopolo Viale buses have a strong image, in the most diverse markets around the world, for their robustness and reliability. Of the total 472 units, there will be 402 vehicles of the Viale BRS model, with a Scania K250 UB chassis, 13 meters long and with a capacity for 29 seated passengers, equipped with two doors, USB sockets in the seats and electronic destination signs; 50 units of the Viale BRS Articulated model, with an 18-meter long Scania K320UA Euro 6 CNG chassis, three doors, 48 seats with USB sockets and electronic destination signs and 20 Volare Fly 10 Urbano mini buses, with a Volkswagen 10,150 chassis, nine meters in length, 29 seats and an air conditioning system, supplementing Marcopolo's project portfolio in the project.

One of the highlights of this project in Abidjan are the 50 Viale BRS buses with Euro 6 technology powered by CNG (compressed natural gas). The vehicles, with an alternative and sustainable fuel source, are in line with Marcopolo's strategy of collaborating and encouraging new clean technologies to preserve the environment in the main markets where it operates in the world.

"Despite the pandemic in 2021, Marcopolo's sales on the African continent were maintained and represent an important part of the company's results. In addition to traditional customers, the company has also gained new customers and further strengthens its position as a supplier of sustainable solutions for urban mobility," concludes André Armaganijan, director of international and commercial operations ME. ❑

Guimabus, the company holding the transport concession in the municipality of Guimarães, Portugal, is acquiring 43 buses from Irizar. Included are 17 zero-emission Irizar ie electric buses and 26 low-entry diesel-powered i3 coaches. Shown here is one of the electric buses that is 12 meters (39 feet) long.

Marcopolo, a leading bus manufacturer in Brazil, recently shipped the first batch of 472 units going to Africa. They will be operated by SOTRA – Société des Transports Abidjanais – in the Abidjan transport system in the Ivory Coast. Shown here is one of the 50 Viale BRS articulated buses that is 18 meters (59 feet) long and built on a Scania K320UA Euro 67 CNG chassis.

Bus Equipment People

Complete Coach Works

Complete Coach Works (CCW) on December 17 announced that **Brad Carson** was appointed the company's chief operating officer (COO). As COO, he will be instrumental in leading the operations, building, culture and executing the company's goals.

"It is an exciting time for the company and our employees as the transition to an Employee Stock Ownership Plan (ESOP) has been executed. The addition of **Brad** as COO to the executive team will ensure continued operational excellence, technological growth and new company culture as we've entered the next phase of the company," said Michael Dominici, chief financial officer.

Brad Carson

Carson began his tenure in 2004 as a transit bus mechanic. Over the years, he has held several leadership positions in the company, such asoperations manager, purchasing and materials director, facility maintenance director and his most recent position as the sales and marketing director.

As COO, **Carson** will immediately assume responsibility for operations, sales and marketing, engineering, bus acquisitions and other related departments.

Complete Coach Works remains committed to serving its customers in the best way possible and remains the leading transit bus remanufacturer in North America.

ZF

At a meeting on December 16, the supervisory board of ZF Friedrichshafen AG voted to approve **Dr. Heinrich Hiesinger** as its new chair. The 61-year-old follows Dr. Franz-Josef Paefgen, who steps down at the turn of the year, having been a member of the ZF supervisory board since 2008 and its chairperson for the last four years. **Hiesinger**, a highly regarded and long-established industry expert, has been on the supervisory board since the start of 2021. He brings to bear many years of experience as both a member and chair of management boards of big-name companies. Klaus Helmrich, member of the Siemens management board for many years, was newly appointed as a member of the ZF supervisory board.

"The shareholders welcome the appointment of **Dr. Heinrich Hiesinger** as chair of the supervisory board of ZF. His many years of wide-ranging experience in senior positions with leading industrial companies makes him highly qualified to play a constructive role in the demanding transformation process of ZF," says mayor of the city of Friedrichshafen, Andreas Brand, speaking as the representative of the Zeppelin Foundation. "At the head of the ZF supervisory board, **Heinrich Hiesinger** will provide important stimulus for the ongoing strategic development of this incredibly dynamic group," adds Dr. Joachim Meinecke, speaking on behalf of the Ulderup Foundation, ZF's second shareholder.

Born in Bopfingen, Baden-Württemberg in 1960, **Hiesinger** studied electrical engineering at TU München, achieving his doctorate before starting his career with the Siemens Group in 1992. Between then and 2010, he worked for the company in a number of functions and departments in Germany and abroad. He then moved to ThyssenKrupp AG in Essen as vice chair of the management board. After taking over as chairperson on the management board in 2011, he led the company until 2018. During this time, **Hiesinger** also served as the vice president of the Federation of German Industries (BDI).

Helmrich was affirmed as a new member of the ZF supervisory board. Born in 1958 in Mitterteich, Bavaria, Helmrich began his career in 1986 as a graduate engineer in the development department of Siemens Electrical & Electronics. By the time he was appointed to the management board of Siemens AG in 2011 he had held several management positions in Germany and the U.S. Helmrich was most recently also CEO of Siemens Digital Industries and is exceptionally knowledgeable and experienced in the field of digitalization, with a particular focus on manufacturing and processes. "Klaus Helmrich influenced the successful development of Siemens AG over the course of a decade as a member of the management board. He is also a senior executive who has shaped digitalization and transformation from multiple different perspectives. His knowledge will make him a sought-after voice on the ZF management board," says Brand.

Paefgen has been a member of the ZF supervisory board since 2008, taking over as its chair in 2017. "The planned change at the top of the board has been in preparation for more than a year with the support of shareholders. The familiarization of the last 12 months enables **Dr. Heisinger** to take on this role with enormous continuity," says the outgoing chair of the ZF suprvisory board.

Dr. Heinrich Hiesinger

"We are deeply grateful to Dr. Paefgen," says Brand, speaking on behalf of both shareholders. Meinecke continues: "His decades of experience and exceptional competence in leading roles within the automotive industry made him a firm anchor and important source of inspiration for the ZF management board throughout the past 13 years of transformation in our industry. The members of the supervisory board extend their heartfelt thanks to Dr. Paefgen for his outstanding work and service as its chairman." ❑

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U.S. Infrastructure Bill Primer

Billions of Dollars on the Way for the Ground Transportation Sector

by Matthew W. Daus. Esq.

After a great deal of discussion in Washington, President Biden signed the Infrastructure Investment and Jobs Act (H.R. 3684) on November 15, 2021. The bill provides $1.2 trillion for infrastructure, roads and transportation. Here is an overview on where the money will go and what it will improve or impact. PREVOST.

On November 15, 2021, President Biden signed the much anticipated, Infrastructure Investment and Jobs Act (H.R. 3684).[1] The $1.2 trillion infrastructure bill was passed by the Senate, on August 10, 2021, with a bipartisan 69-to-30 vote, and – after several months of consideration – the bill was passed by the House of Representatives on November 8, 2021 with 13 Republicans joining the Democratic majority.[2] The infrastructure bill is being touted as a generational investment in America's infrastructure, with $550 billion in funds being targeted towards improving roads, removing lead water pipelines, upgrading bridges and expanding broadband accessibility.[3] President Biden also announced that a task force overseeing the infrastructure funds will be led by Brian Deese, Director of the National Economic Council, and Mitch Landrieu, former Mayor of New Orleans.[4]

During the bill signing ceremony, President Biden stated, "For too long we have talked about having the best economy in the world, we have talked about asserting American leadership around the world, with the best and the safest roads, railroads, ports, airports… but today we are finally getting this done." The $550 billion new spending investment in America's infrastructure will be disbursed over five years and the funds will be used to ensure safe travel and trans-

portation across the country.[5] According to the American Society of Civil Engineers, the U.S. scored a C- grade on the Society's 2021 infrastructure report card, which takes into account categories such as rail, aviation, roads, schools and transit systems. Of the categories graded, the U.S. scored the lowest in transit systems earning a D- grade in 2021.[6] The infrastructure bill is intended to tackle these areas of improvement with targeted investments.[7] More than one-half of the $550 billion allocated for new spending is transportation-focused, with $283.8 billion dedicated to categories related to transportation: roads, bridges and major projects; airports; low-carbon and zero-emission school buses and ferries; passenger and freight rail; ports and waterways; electric vehicle charging; public transit; safety and research; and reconnecting communities.[8]

The infrastructure bill allocates $110 billion into roads, bridges and other major projects. The final legislation puts more than $25 billion towards helping modernize America's airports, although the Airports Council International estimates the airports have $115 billion worth of backlog projects.[9] The legislation includes an unprecedented $66 billion investment in freight and passenger rail, which will directly benefit Amtrak and provide much needed funding for upgrades.[10] This is the largest investment in Amtrak since the rail service was founded in 1971.[11] The law's final language also provides $39 billion towards public transit to modernize and expand transit systems in an effort to meet ridership demand. Public transit upgrades include making all public transit stations accessible and bringing transit to new areas, especially underserved communities.[12] The White House expects the infrastructure bill to boost the economy and create millions of jobs, especially in the transit and transportation industries, according to President Biden, "[n]ot only will we see more record-breaking job growth, we'll see lower prices, [and] faster deliveries as well."[13]

Transit Systems Will Receive Significant Funding

Transit systems across the U.S. could be transformed by this cash infusion: every state will receive funding to help improve its infrastructure. Populous states like New York, California and Texas can expect to receive the most funding; however, less populous states will benefit by receiving more funding per capita.[14] For example, in New York, the Metropolitan Transit Authority (MTA) expects to receive at least $10 billion in funding to make the system more wheelchair-accessible. The federal funds will also help with the bottleneck at major Long Island Railroad stations. In New Jersey, the funding is expected to push major improvements at the region's airports and expedite the purchase of electric buses.[15] In California, the state expects to receive $1.5 billion to improve airports, $9.45 billion to expand and improve public transportation and $384 million over the next five years to expand the network of charging stations available for electric vehicles.[16] This cash infusion will help Los Angeles meet its goal of electrifying the Metro's bus fleet by 2030.[17] Texas is expected to receive a huge $35.44 billion over the next five years. This influx of funding is mainly dedicated to the improvement of federal highway programs, but public transportation in Texas will also benefit from the dedicated funding of $3.3 billion.[18]

The U.S. Department of Transportation is receiving $150 billion in funding to be issued directly to cities, local governments and states. Of that $150 billion, $50 billion will be distributed based on funding formulas; however, $100 billion will be left available for competitive grants.[19] This is an unprecedented amount of funding which provides federal administrators with significant discretion. This cash infusion will shape the infrastructure of the United States in the coming decade and beyond. While funds are available through grants for states and government, there are several areas of opportunity for private companies to obtain grants under the infrastructure bill, specifically in the areas of electrification and transportation, which will allow for partnerships between governmental and private entities.

Going Big on Going Green…

The legislation provides $15 billion in funding for the electrification of "everyday" transportation. These funds will be divided equally with $7.5 billion each for electric vehicle supply equipment (EVSE) charger expansion and low-to-zero emission school buses. The final legislative language allows for investments of $2.5 billion in zero-emission buses, $2.5 billion in low-emission buses and $2.5 billion in ferries.[20] There are approximately 500,000 school buses in America moving 26 million children between school and home every day. About 95 percent of these school buses currently run on diesel, which accounts for five million tons of yearly greenhouse gas emissions and fumes, which have been linked to respiratory health issues in children. Today, battery-powered school buses account for less than one percent of vehicles in America's school-bus fleet. With these funds, the number of battery-powered school buses could increase tenfold in the next five years.[21] Funding for e-buses can be allocated to local or state governments, federally recognized tribes providing bus service to one or more public schools, an eligible contractor or a nonprofit school transportation association. Funds will be available through the U.S. Environmental Protection Agency (EPA) program administrators for grants and rebates through a competitive application. Vehicles included in the grant program must be used for school transportation only. Ferries are also eligible for funding. The priority for these grant funds are programs that serve high-needs schools, bureau-funded schools, schools receiving public assistance and rural or low-income school districts.

In addition to school buses, the new law focuses on expanding the availability of EVSE chargers, and the $7.5 billion will go towards the nation's first network of electric-vehicle

Expectedly, one of the major aims of the Infrastructure Act is to support transportation and particularly electric transportation. Included will be charging stations, electric buses and electric school buses. High on the list of priorities will be moving towards more electric school buses for school transportation. THOMAS/DAIMLER.

The act provided $66 billion for freight and passenger railroads. Amtrak will receive its largest funding since it was founded in 1971. Shown here is Amtrak's Capitol Limited in a fall setting in the Pennsylvania-Maryland area. AMTRAK – EMILY MOSERFALL.

chargers along highway corridors.[22] The legislation provides a historic investment in the electric vehicle sector, and will improve adoption of electric vehicles for daily commuting.[23] While only public sector entities will be eligible to apply for grant funding for EVSE charger programs, funds can be used by public entities to contract with private companies. All EVSE chargers included in this program must be publicly accessible and provide a variety of payment methods for the user. The federal funding for this program will particularly focus on those that serve multi-unit dwellings, rural areas and disadvantaged communities.

There are also many new areas of funding for the transportation sector. With regards to safety, there is $11 billion allocated. For the first time, safe alternative transportation is receiving a boost in funding to the tune of $1.79 billion a year, which is a 70 percent increase in annual funding, which will benefit pedestrians, bicyclists and other non-motorized, sustainable transportation users.[24] The program allocates $200 million for new projects that support safe active transportation, including walking and cycling.

Vision Zero Gets a Big Boost

Also included in the final bill is the "Safe Streets for All" legislation, which will provide $6 billion in funding for Vision Zero, but also includes funding for partnerships between private and governmental entities.[25] There are six provisions which describe what can be funded under the programs:

1. Complete street projects that support safe, convenient, independent movement of all users in the transportation system.
2. Activities eligible under the Safe Routes to School program.
3. Development and implementation of policies or procedures for context sensitive design.
4. Any element of Vision Zero planning or implementation of existing Vision Zero plan.
5. Activities in furtherance of the vulnerable road user safety assessment of the state or metropolitan planning organization.
6. Any other project, program or plan that provides safe and adequate accommodation of all users of the surface transportation network, as determined by the Secretary of Transportation.[26]

New and Expanded Grant Program Funding

The funds for the U.S. Department of Transportation (DOT) and other federal agency grant programs are expected to be deployed at different times. Formula funds are expected to flow to the states within six months of the bill being signed. In addition, grant programs already in existence should also receive funds within six months. However, new grant programs will likely receive funds within 12 months. Some programs include annual funding, which will continue to be distributed each fiscal year. Given the significant funds available, there is an opportunity for many organizations and entities to benefit from this bill. Many private sector companies will need to partner with governmental entities to apply for grant programs. It is critical that applicants focus on outcomes and look at organizational goals for the next decade, instead of short-term planning when applying for these grants. Applicants should also take a regional approach and develop partnerships with governmental entities which will act as conveners through the process.

New Requirements for Limousines

In addition to a significant cash infusion, the bipartisan infrastructure bill also includes new safety requirements for limousines.[27] U.S. Representatives for New York Antonio Delgado (NY-19) and Paul D. Tonko (NY-20) tried to include a slate of limousine safety reforms in the bill, but ultimately were only able to include only a few limousine safety measures.[28]

The Infrastructure bill defines the term "limousine" as a vehicle that has a seating capacity of nine or more persons (including the driver) with a gross vehicle weight rating greater than 10,000 pounds, but not greater than 26,000 pounds. The vehicle does not have to be altered post-manufacture to be considered a limousine. However, taxis, nonemergency medical vehicles and paratransit motor vehicles are exempt from the definition.

The infrastructure bill directs the U.S. Secretary of Transportation to prescribe Federal Motor Vehicle Safety Standards (FMVSS) pertaining to seat belts in limousines, limousine crashworthiness and limousine evacuation in case of emergency.[29] After the FMVSSs are issued, they will apply to new limousines as well as vehicles that are modified post-manufacture by increasing the wheelbase of the vehicle to make the vehicle a limousine.

Within two years, DOT must establish rules and amend existing FMVSSs requiring seat belts to be installed in limousines on each designated seating position, including on side-facing seats. DOT must also amend FMVSS 207 to require limousines to meet standards for seats (including side-facing seats), seat attachment assemblies and seat installation to minimize the possibility of failure by forces acting on the seats, attachment assemblies and installations as a result of motor vehicle impact. The DOT is also required to assess the feasibility, benefits and costs to retrofit limousines to comply with these requirements.

The DOT has two years to research and then two years to develop the safety standards for features that aid evacuation in the event that an exit in the passenger compartment of a limousine is blocked. Following a four-year research period, the DOT must develop limousine crashworthiness safety standards for side impact protection, roof crush resistance and air bag systems for the protection of occupants in limousines with

alternative seating positions, including perimeter seating arrangements.

The legislation requires limousine operators to prominently disclose in a clear and conspicuous notice – including on the operator's Web site – the following: the date of the most recent inspection required under state or federal law; the results of the inspection; and any corrective action taken to ensure the limousine passed inspection, if applicable. The Federal Trade Commission has enforcement authority over this requirement. Violators will be subject to the penalties and entitled to the privileges and immunities provided in the Federal Trade Commission Act (15 U.S.C. 41 et seq.). This requirement takes effect 180 days after the date of enactment.

What Happens Next?!

For the transportation industry, the legislation will undoubtedly provide changes – directly or indirectly – over the next decade. Of course, legislative bill signings will generate a good amount of pronouncements about how the law is a "game changer." With the amount of funding dedicated to the local, state and federal programs, including funding for school buses, initiatives for electric vehicle charging stations and the new federal limousine safety standards, the legislation may live up to its expectations as a "game-changer." Even before federal rules and competitive grants are drafted, operators and technology companies should start thinking about ways in which to partner with and explore these opportunities with state and local transportation agencies. Major urban transit agencies expect to receive a total of $33.5 billion in funding towards existing operations, which will leave significant room in their budgets for new projects.[30] The aviation industry will receive $25 billion in federal funds to use for new and dormant projects.[31] Now is the time to discuss ideas, such as Mobility-as-a-Service, first-and-last-mile partnerships, electric vehicle infrastructure, and many other topics.[32] The legislation includes $2.2 billion allocated for enhanced mobility innovations for the elderly and disabled and $193 million for transit research. Both are areas where Mobility-as-a-Service could make a major impact.[33] While the processes to obtain funding will take months to "roll out," the funds are on the way. ❑

Possibly because of recent accidents, limousines are included in the act with increased regulations and safety. Included will be new FMVSS standards requiring seat belts on each limousine seat position. Other regulations will look at evacuation and crashworthiness. BEN KERCKX.

The act will improve transportation, infrastructure and roadways in every state. $110 billion in the new act will go for roads, bridges and other major projects. This MCI D model coach was photographed on the expressway system in Chicago. MCI.

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Trans-Bridge Lines

80 Years of Excellence

by Jennifer Lechiski

Photos courtesy of Trans-Bridge Lines

Trans-Bridge Lines, one of the more respected bus operators in the Northeast states, celebrated their 80th Anniversary in 2021. Founded in 1941 by A.J. Ferraro, the company today operates three routes into New York City from Pennsylvania and New Jersey, airport and casino service as well as charters and tours. Management is looking forward to returning business following the pandemic.

When you have been in business for more than 80 years, you gain a vast amount of experience and learn to navigate the highs and lows of operating a company. Trans-Bridge Lines, based in Bethlehem, Pennsylvania, knows a thing or two about dealing with challenges.

"Our company has faced many issues and events over the years. Some have been within our control to handle, and others have presented our team with unique situations that required new perspectives on how we do things," says Trans-Bridge Lines President Tom JeBran. "The pandemic is certainly the foremost example of this. It has been a difficult year and a half. I have always imagined that my grandfather saw and dealt with everything, but I think even he would have been shocked by the effects the COVID-19 pandemic has had on how we do virtually everything."

JeBran's grandfather, A.J. Ferraro, considered a pioneer in the bus industry, started in 1917 when he converted a truck into a bus. He added sideboards to the truck and transported troops to Fort Dix, New Jersey. His passion for all aspects of the industry led him to become a manager, consultant, partner, and owner of various bus companies in New York, New Jersey, Pennsylvania, and Washington, D.C. A.J. was motivated by his vision to provide the best and most convenient service that passengers needed to get to their destinations. He operated the most up-to-date bus models available.

In 1941, Ferraro founded Trans-Bridge Lines, Inc. and based the company in the Warren County, New Jersey community of Washington, located in Franklin Township. The company emerged when Ferraro, along with his son, John and daughter Camille, took over the New Jersey Interurban Coach Company. At that time, Trans-Bridge Lines operated local transit service along the Port Colden, Washington, Broadway and Phillipsburg, New Jersey corridor to Easton, Pennsylvania, and eventually grew to include Allentown, Pennsylvania. The company also operated a few charters and tour excursions.

In 1943 Delaware River Coach Lines, an affiliate of Trans-Bridge Lines, began operating local transit service between Easton and Phillipsburg. This service still runs today under an agreement between Delaware River Coach Lines and New Jersey Transit. By 1946, Delaware River Coach Lines and Trans-Bridge Lines moved to a new facility on Broad Street, near the Phillipsburg-Easton Toll Bridge and the Northampton Street Bridge in Phillipsburg.

In 1969, A.J.'s son John Ferraro started a tour company, Holiday Tours, which conducted retail tours throughout the United States and Canada. The tours included one-day motorcoach excursions to Atlantic City, sporting events, shows and overnight trips to such destinations as Florida and Tennessee.

Holiday Tours changed its name to Trans-Bridge Tours in 1980. Today the tour company offers one-day, multi-day, casino tours, and air and cruise vacations.

In 1977, A.J. passed away and the second generation of the family owned and managed the companies under the leadership of sons, John and Joseph, who served as president and vice president of the company, respectively. Their sister, Camille, worked as corporate secretary and in accounting, while her husband, James JeBran, served as the company's treasurer, rounding out the Trans-Bridge Lines leadership. The company's third generation was also working in various positions throughout the company, learning the business. Camille and James' sons, Tom and Jim, did everything from washing buses to working in the shop and office. Both were working full-time by 1980.

"The business was always part of our everyday lives," says Executive Vice President and Treasurer Jim JeBran, "Being around the operation continually, Tom and I were aware of when our family was struggling. We had to borrow money from our long-time insurance broker, P.A. Post, twice in the late 40s and early 50s. We continue to do business with the Post family, currently in their fourth generation.

Our family also faced bankruptcy in 1970, after years of bleeding money trying to operate the failing transit service that Trans-Bridge and Delaware River Coaches had operated since the 40s, and before that, by predecessor companies. Due to the falling ridership and coinbox fares, we had to stop the service completely."

Prior to 1981, the family was operating four companies – Trans-Bridge Lines and Delaware River Coaches, both in Phillipsburg, New Jersey; and Tri-City Coaches and Trans-Bridge Tours, both in Bethlehem. Trans-Bridge Lines and Tri-City Coaches operated charters with 20 and 12 buses respectively. These included 18 GMC transit, suburban and charter buses from the 50s , 60s and 70s. Delaware River Coaches operated a contract transit service for the New Jersey Department of Transportation with three transit buses owned by the state and backed up by the older Trans-Bridge transits. Then in 1981, Trans-Bridge Lines and Tri-City Coach Lines merged and moved to a new facility in Bethlehem's Lehigh Valley Industrial Park at 2012 Industrial Drive. This remains the company's current address, with office and bus facilities in the same location.

This 1947 photo shows the Phillipsburg, New Jersey garage in the early days of the company. It looks like a Ford Transit backing out of the garage. The company today still runs service between Easton and Phillipsburg.

"Our Lehigh Valley Industrial Park facility is approximately 27,470 square feet of building, sitting on 10 acres of land. The space contains our maintenance, operations, accounting, communications, charter and human resources departments, along with executive management offices, the Trans-Bridge Tours office, and our ticket agent/customer service office," says Director of Operations Mark Ertel, "We also have two conference rooms, three break rooms and outdoor sheds. The outdoor space houses our fleet of 66 buses and various company automobiles and equipment including plows and trailers. A large portion of our building space is dedicated to our mechanic areas, wash bay and body shop. That area includes our parts department, garages with pits for working underneath the buses and our body shop complete with a mobile paint station."

In 1990 John and Joe Ferraro retired and James, Camille, Tom and Jim JeBran began ownership. Trans-Bridge Lines purchased West Hunterdon Transit Company in 1991, increasing Trans-Bridge Lines' service area. Their service area now covered the entire Lehigh Valley, as well as New Hope, Doylestown and Quakertown, in Pennsylvania; and Clinton, Flemington and Lambertville, regions in New Jersey.

The company's last acquisition came in 1997 when Jim Thorpe Transportation was acquired, expanding the charter department of the company.

Holiday Tours was founded in 1969 and changed its name to Trans-Bridge Tours in 1980. Lettered for Trans-Bridge Tours, this Flxible Clipper was part of the fleet in earlier years. Today, Trans-Bridge Tours operates one-day tours, multi-day tours, casino tours as well as air and cruise vacations.

"I was an employee of Jim Thorpe Transportation for 10 years. When Trans-Bridge Lines bought the company, they offered me a position in their organization, and I have now worked here for over 24 years", says Susan Heffelfinger, charter manager, "We are going through a lot of transition following the worst of the pandemic. We all understand that charter service is going to play an even more vital role in our operations and, ultimately, our survival as we move forward. We are working diligently with schools, groups and businesses to provide their transportation needs. We also provide transportation for area sports teams. We are the official transportation provider for the Lehigh Valley IronPigs baseball club and Lehigh Valley Phantoms ice hockey team."

For the sports team transportation, Trans-Bridge Lines owns two Prevost executive motorcoaches, both gold, with two-and-one seating, oversized leather seats and galley area. Each seat has individual control settings and plugs. The coaches have availability to other groups and organizations during the teams' off seasons.

In addition to the two executive coaches, Trans-Bridge Lines maintains a fleet of more than 60 full-size, standard MCI 54-58 passenger motorcoaches with all the standard amenities. The fleet is mainly J4500 models, along with some MCI D4500s. The "J" models feature elegant spiral entryways, plush tiered seating, 110-volt outlets for personal electronic devices, Wi-Fi connectivity, window shades, easy-to-reach individual reading lights and air vents. All coaches are wheelchair accessible. The average age of the fleet is 4½ years old.

Trans-Bridge Lines currently runs three routes – Allentown/Clinton/New York, Doylestown/Flemington/New York and Wall Street Service. The Allentown/Clinton/New York Schedule also includes stops at Wind Creek Bethlehem Casino and Newark Liberty International Airport. The most traveled route is the Allentown, which features 16 eastbound and 17 westbound runs weekdays, and six eastbound and westbound weekend runs. This is far lower than the pre-pandemic 45 eastbound and 46 westbound weekday runs, and 18 eastbound and 23 westbound weekend runs.

Trans-Bridge Lines devotes substantial space to service and support that includes a wash bay, body shop and a parts department. Shown here is one of the pits for working underneath the buses.

Two Trans-Bridge buses were photographed at the Lehigh Valley Airport Intermodal terminal in 2017. The company has operated airport service to Newark Airport as well as JFK Airport in the past.

The company is presently operating two weekday and two weekend runs, respectively, on their Doylestown /Flemington Schedule, which once ran 12 weekday and six weekend runs. Wall Street offers one eastbound and westbound run, as opposed to the previous six runs each way before the pandemic.

Affiliate company, Trans-Bridge Tours, typically offers more than 25 multi-day Tours, and more than 70 one-day tours each year, chartering Trans-Bridge Lines MCI coaches. In addition, the company offers several casino tours running spring through fall and on New Year's Eve, air and cruise vacations put together by expert travel planners and customized to the guest's wishes, and sporting events. Special show tours such as the Christmas Spectacular at the Radio City

In 1981, Trans-Bridge Lines and Tri City Coach Lines merged and moved to a new facility in Bethlehem's Lehigh Valley Industrial Park. This resulted in the modern and standardized coach fleet shown here. The purchase of other bus companies in following years expanded the fleet.

Music Hall, and customized Broadway show packages round out the company's offerings.

"We've had a difficult year. Attractions and restaurants became unavailable, causing us to notify our guests of the inability to conduct our tours," says Janet JeBran, general manager, "It's been disappointing, but we've taken that time to research new tours for the future, stay in touch with our customers and grow our e-mail and social media communications. We are refreshing tours that are longtime favorites by adding new points of interests, or changing restaurant venues. That creates a new travel experience for our guests."

The Trans-Bridge Tours team is excited to have resumed some tours in 2021, and are looking forward to a more robust year in 2022. Guest favorites includes history-themed tours and scenic tours, but the company always offers an eclectic array of tours to appeal to everyone's tastes. The increase in tours will mutually benefit both Trans-Bridge Tours and Trans-Bridge Lines, as the tour company charters their motorcoaches from Lines, getting buses back on the road again.

This photo shows part of the Trans-Bridge Lines fleet in 2021. As with many other bus companies, operations were cut back because of the pandemic. As the situation improves, more and more coaches are going back out on the road.

The biggest challenges for Trans-Bridge Lines and the motorcoach industry in general right now, is a decrease in regular commuter ridership and the loss of drivers to the booming warehouse and trucking industries.

"There is a lot of competition for drivers in the Lehigh Valley area. A huge boom in warehouse construction and the demand for over-the-road truck drivers, has led us to recruit differently. Despite that, we feel that we can offer an enticing benefit in that our drivers have more at-home time," said Lori Stanke, human resources manager, "We further offer paid training for those who wish to learn the trade, as well as incentive programs featuring sign-on bonuses and a referral program."

Trans-Bridge Lines is no stranger to change. There are many upgrades and projects that the company had in the works before the pandemic that have been halted.

"We have learned many lessons over the years, and one thing I've realized is not everything is successful," says Tom. "Our company is willing to try new ventures and act nimbly. However, with the financial setbacks our industry has endured the past year and a half, we must be extremely careful. Some of the ideas we've implemented have failed on more than one occasion. For example, we have attempted to run service to Philadelphia twice, due to requests, but had too few passengers to maintain it, and had to eventually stop the service."

Trans-Bridge Lines has been immensely affected by the pandemic and the future of the company, as well as the motorcoach

The Trans-Bridge Lines management team was photographed in 2021 adjacent to one of the buses. Operations continue to be diversified with three major routes to New York City, airport service as well as charters and tours. Over the years, the company has looked for new ideas and new services to offer.

industry, is unclear. What is known is that the dynamics of the commuter has forever changed. Trans-Bridge Lines must now account for the level of people returning to work fully in-office vs. partial office time, and accept the reality that some are never returning to offices. There are recreational travelers who are excited to get back to attractions, but are hindered by the rules for businesses, tourism, restaurants and other destinations in New York City.

"On average, we have about 40 motorcoaches parked at our facility that are simply not being used," said Ertel.

One area of growth that is a necessity and will change the way Trans-Bridge operates is the implementation of an online ticketing system.

"We realize this is something that is needed as soon as possible. We have pursued this feature before; however, we were never 100 percent guaranteed of the security of the software," JeBran noted, "We are now working with a vendor who will supply the needed software, hardware, training and the ultimate launch of the product. There will be a learning curve with getting our staff trained, but the end result will be that it will streamline everything we do, in every department of our business."

The company staff is decreased significantly, but the Trans-Bridge Lines management team is confident that with hard work and careful attention to passenger counts and travel trends, business will return to some new normalcy. A reopening of Broadway has already occurred, some commuters are going back to their workplaces, even if with modified schedules. With vaccine boosters widely available, there may soon be more travelers and more opportunities to resume routes to build schedules back up again. ❑

Looking into the future, Trans-bridge Lines is working to get more buses back out on the road. A major company project is moving to an online ticketing system. This will not only streamline operations but will also make things easier for passengers and staff.


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Preparing a Disaster Plan

by Dave Millhouser

In spite of efforts and training, you need to recognize that a disaster can happen. In many cases it may not even be your fault but how you deal with it can make a big difference for your company and your staff. SETRA.

In 1973 I was the only motorcoach mechanic in Naples, Florida. You would think that would give me a license to print money – until you learn that there were only two coaches in the whole county. One was a Beck, the other a PD4106.

In an effort to survive, I took a job better suited to my skills, digging ditches for a contractor building condominiums. The owners took genuine pride in its quality of construction, and often said that if a hurricane struck, their buildings would be the ones still standing. They added small, unseen structural improvements just in case. As a marketing plan – that is a bit iffy, but their point was that small efforts before a disaster can pay off big when bad things happen.

The "tunnel at the end of the light" is my awkward way of pointing out that, even when things are going well, and you are doing all you can to operate safely, bad things can happen. If a serious accident occurs, whether you are at fault or not, how you handle it will have a major impact on your company's future.

It is nice to think we behave well in stressful situations, but frankly, there is no substitute for having a plan. Great athletes do well under pressure, but only because they have practiced to the point where acting correctly has become automatic. A disaster plan is a bit like life insurance – it can give you a measure of security, while you hope never to use it.

Since I am stealing this from folks smarter me, you will certainly think of things I will miss, but that is the point – you are planning now, while there is no pressure.

You will want to have your insurer's help, both in forming a plan and executing it. You have overlapping (but not identical) goals. Both want to mitigate financial exposure, but you will also be concerned with your company's future. It seems wise to involve your attorney in this process.

There are at least two major areas worth including in a written plan – who will represent your company? And what will they say?

The authorities get to talk to anyone they want (hopefully **with** a lawyer present). The media is a different story (pun intended). A written plan, understood by everyone in your company should include referring **all** questions to a representative that has been designated and trained.

It is not disingenuous for a spokesperson to express concern for any casualties, then defer providing anything further. Regardless of how much we think we know in the early hours after an accident, we are usually wrong. Anything more than sympathy and "we're cooperating with the authorities" puts you at serious risk, without accomplishing anything.

Unsaid things rarely hurt you. The media is fickle and wants to move on to the next story, so time is your friend. We only make things worse trying to "make things better" by talking too much. Anything you, or your employees, say becomes part of the public record for any subsequent litigation.

A part of every plan should be who will represent the company and what will they say. In most cases, having a single representative may be the best solution to keep communication clear and accurate. What they say will make a big difference to public perception. JOSEPH SHOHMELIAN.

The authorities are more tenacious. Bear in mind that any conversation you, or any of your employees, have with folks involved in the accident is not "privileged." If a driver, or management, blurts something out, it may be subpoenaed as evidence. Occasionally an emotional employee will blame themselves for something that is later determined to have been unavoidable. Their utterance can bite you in the gluteus maximus (a little Latin lingo to impress you).

The point is that your attorney should be involved immediately, and part of a disaster plan should include training your people to be careful and selective about who they talk to. It might be worth the expense to have your lawyer speak at staff and drivers' meetings periodically regarding how they should respond to the public, the press and the authorities.

Rather than damaging shipwrecks by anchoring, the dive boat I work on ties into them. I was at 120 feet trying to remember how to tie a bowline, teamed with a 20-year-old college kid, when I boo-booed mightily. The boo-boo caused my scuba regulator to free-flow. Caslyn immediately saw what was happening, and, without going into detail – did everything right.

She is a bright kid, but also well trained. This situation was one she had thought about, practiced and was ready for – and that preparation paid off when I screwed up. After a volcanic eruption of bubbles, and a quick ascent, we regained the deck of the boat. Ripping off her mask (and sporting a remarkably runny nose), she yelled "What the $#@% was that?"

Planning pays off when the world turns to $#@%.

Nothing is more intimidating than a petite blonde yelling at you – particularly since this is the **only** time I have heard her cuss.

Guess I bring out the best in people. ❑

A disaster plan is like insurance – you hope you never need it, but if you do you are happy that you took the time to do it. The best time to put together a disaster plan is when you do not need it. This gives you time to leisurely consider what to include, look at alternatives and maybe even develop different plans for different situations. MALACHI WITT.

Photographs

Readers and advertisers are encouraged to send in photographs or slides of buses or equipment that may be of special interest to our readers. Please, include a list explaining what makes the pictured item different, unusual or interesting.

Photos should be sent to NATIONAL BUS TRADER, 9698 West Judson Road, Polo, Illinois 61064. Please indicate if you would like your picture returned. Picture usage is dependent on the quality of the photo and space available.

At right: **Alexander Dennis recently provided 12 British-built electric double-deck buses to bus operator Xplore Dundee in Dundee, Scotland. The buses were built locally in the ADL factory in Falkirk and use BYD's batteries and powertrain technology. The buses will run in service 28 on Lochee Road, which has a reputation for being the fourth most polluted street in Scotland.**

Below: **Kat Gavornik of Starr Bus Charter and Tours sent us this photo of one of their Eyre buses on a tour of the Pennsylvania Grand Canyon. In the background is the *Hiawatha* paddle wheeler on the Susquehanna River. Starr is based in Trenton, New Jersey.**

Bus of the Month

Prevost H3-45

The H3-45's striking style is clean and timeless with flush-mounted, frameless windows that ensure exceptional panoramic views, greater passenger privacy and a reduced strain on the air-conditioning system for improved fuel economy. In addition, the coach boasts a generous amount of cargo space with an impressive 460 ft.3 /13.03 m3 of underfloor capacity and the highest deck in the Prevost lineup. From its distinctive and proud front-end to its elegant rear treatment, there is no mistaking any ordinary bus for the ultimate in touring coaches: the Prevost H3-45.

Engineered and built with the same exacting care as the first handcrafted wooden buses of more than 95 years ago, the Prevost H3-45® touring coach continues to take operators and customers to another place in extraordinary luxury and comfort – The Ultimate Experience. Elegantly styled front to rear and towering 12 feet above the pavement, the H3-45 cuts a commanding and highly recognizable profile.

For an ultimate experience, passengers require seating with style and comfort combined with uncompromising safety. Prevost's Cloud One seating is the solution. Cloud One is designed for the North American market and includes greater ergonomic functionality, which provides enhanced lumbar along with head and neck support. The back of the seat integrates the ultimate development of foams to serve as an impact absorber for passengers.

Prevost is committed to offering amenities and safety features that will ensure your customers are comfortable, contented and secure whenever they travel on the Prevost H3-45 coach. It can mean the difference between a memorable trip and one that is unforgettable.

Electronic mirrors are optional equipment that improve fuel efficiency through improved aerodynamics. E-mirrors minimize blind spot hazards, improve visibility at night and in inclement or rainy conditions and help limit sun and light glare. With e-mirrors, there is no risk of collision with pedestrians or others on the road and maintenance costs are decreased.


Prevost Cloud One Seating

Focused on increasing safety and maneuverability, Prevost's optional Back-up or Surround Camera Systems take the driver guesswork out of backing up, parking in crowded areas and maneuvering the vehicle. Weather resistant camera is resilient in all weather environments. Perimeter lighting makes loading and unloading in low light easy and safe.

Prevost Driver Assist fully integrates radar, camera and brake technologies for motorcoach applications. The data from these technologies work together, gathering and sharing information, functioning simultaneously to create driver assistance aimed at reducing incidents and lowering operational costs. Driver Assist Integrates: Adaptive Cruise Control w/ Braking (ACB), Following Distance Alerts (FDA), Frontal Collision Mitigation (FCM), Stationary Vehicle Braking (SVB), Lane Departure Warning (LDW) and a Heads Up Display (HUD).

Resolute in its commitment to deliver the ultimate aftermarket experience to coach operators across the US and Canada, Prevost offers the largest service network in the motorcoach industry. The network includes 17 Prevost Parts & Service Centers strategically located throughout the U.S. and Canada. All locations are staffed by highly qualified, factory-trained, and certified Prevost technicians. Additionally, more than 190 providers in the Volvo Truck network are certified to service buses and the fleet of mobile service trucks are available in high traffic areas and at special events to expand the work of the service centers. Prevost is dedicated to keeping coaches on the road and businesses running smoothly.

Prevost also helps operators find creative and attractive financing options to suit their business needs. They can offer a wide variety of lease and loan options. Operating leases can offer great value to be able to get into a Prevost easily and to fulfill long-term contracts while matching revenue to expenses.

Prevost offers all the equipment, support and service support operators needs to make it possible to be part of Prevost's Ultimate Experience. ❑

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- Industry leading cargo capacity
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- State-of-the-art safety options

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H3-45

SPECIFICATION HIGHLIGHTS

GENERAL

Standard seating capacity	56
Length, overall (ft./m.)	45/13.72
Wheelbase (in./m.)	314/8.0
Width, overall (in./m.)	102/2.59
Height, overall (in./m.)	146.25/3.72
Floor-to-ceiling height (in./m.)	77/1.96
Swap & plug removable wheelchair lift - regular or high capacity	Optional
Underfloor luggage compartment volume w/o WCL (ft.3/m.3)	460/13.03
Underfloor luggage compartment volume w/ WCL (ft.3/m.3)	430/12.18
Storage capacity, overhead (ft.3/m.3)	117/3.31
Central pneumatic door locking system	Standard
Escape hatches	Standard
Roof hatch w/ ventilator	Optional
Overhang-front-rear (in./m.)	75-108.3/1.9-2.75
Turning radius w/ rigid suspension (ft./m.)	45.4/13.8
Turning radius w/ IFS (ft./m.)	41.6/12.6
Prevost frameless thermopane side windows	Standard
Stainless steel integral structure	Standard
Low-alloy/high tensile steel subframe	Standard
Reinforced fiber composite outer shell	Standard
Fuel tank w/ filler neck-both sides (US gallons/litres)	222/840
DEF tank capacity (US gallons/litres)	15/60
Wet weight, w/ std. transmission (lb./kg.)	38,700/17,554
Gross vehicle weight rating (lb./kg.)	53,000/24,040
Gross vehicle weight rating (lb./kg.) w/ super single tire	52,200/23,678
Automatic engine fire suppression system	Standard
Tire pressure monitoring system	Standard
Electronic Stability Program (ESP)	Standard
Prevost Driver Assist	Optional

ENGINE/TRANSMISSION

EPA compliant Volvo D13 engine 435HP w/ diesel particulate filter (DPF), selective catalytic reduction (SCR)	Standard
Torque 1700 (lb./ft.) (2300 NM) at 1100 rpm	Standard
Allison world, 5th generation w/ FuelSense 2.0, 6-Speed auto. trans.	Standard
Drive axle ratio	3.58/3.91
Volvo I-shift transmission	
12-speed automated manual transmission	Optional
Drive axle ratio	2.50
Electric air intake preheater	Standard
Prevost electric engine cooling package	Standard
Cruise control	Standard
Engine brake (on all cylinders)	Optional
Allison hydraulic transmission retarder	Optional
Driver electronic message center display	Standard
Fuel pro 382 fuel filter	Optional

TIRES AND WHEELS

Michelin' 315/80 R22.5 (all wheels)	Standard
Steel wheels	Standard
Michelin' wide based platform XDN 455/55R22.5 on drive axle w/ Michelin 365/70R22.5 on front & tag axles	Optional
Polished aluminum wheels w/ Durabright' finish	Optional

BRAKES

All-wheel disk brakes w/ antilock braking system (ABS)	Standard
Parking brake booster (drive)	Standard

ELECTRICAL

24-V main system/12-V exterior lighting	Standard
Energy Management System	Standard
Dual 2+1 24-V/150-A alternators	Standard
Dual brushless alternators 24-V/250-A	Optional
12/24-V cut-off relay switches	Standard
12-V maintenance-free AGM batteries	4
100-A battery equalizer	Standard
Stop, tail, marker lights & turn signals	LEDS
Cornering and docking lights	Standard
Front and rear clearance lights	LEDS
Perimeter lights (3 on each side)	Optional
24-V/41-A battery charger	Standard
Fully multiplexed electrical system	Standard
Prevost Liaison 4G / Remote Diagnostics	Standard
Electronic Logging Device (ELD) interface	Standard
Intelligent Sleeping Mode (ISM)	Standard

INTERIOR

ISRI' adjustable driver seat (mechanical)	Standard
ISRI' adjustable driver seat (fully pneumatic)	Optional
USSC ALX3 3pt driver seat	Optional
Amaya ALPHA/A220 & Sigma	Standard
Luxurious seating	Optional
2 + 1 seating configuration	Optional
Welded rail system is compliant w/ seat belt static pull test – FMVSS/210	Standard
Retractable tray tables, aircraft-type	Optional
Adjustable individual reading lamps	Standard
Open parcel racks, w/ carpeting, lights	Standard
Enclosed parcel racks, aircraft-type w/ carpeting, LED lights	Optional
Passenger chime button/seat identification	Standard
Passenger side window blinds	Optional
Driver's electric window blinds	Standard
Lavatory	Standard
Auxiliary lavatory holding tank	Optional
Lavatory waste tank heating system	Optional
Direct and indirect lighting all LEDs	Standard

MIRRORS AND HEADLAMPS

Electrically-controlled heated rearview mirrors w/ separate convex mirror on top	Standard
Mirrors w/ integrated turn signals	Optional
E-mirrors	Optional
Halogen H9 headlamps low & high beams	Standard
Xenon headlamps low beam	Optional
LED fog lights (Qty: 4)	Optional

ELECTRONICS AND ENTERTAINMENT SYSTEMS

Prevost AM/FM CD receiver	Standard
Premium sound system	Standard
PA system	Standard
Tour guide microphone (CB type)	Standard
Wireless microphone	Optional
15" HD wide-screen monitors	Optional
19" HD central flip down monitor	Optional
Radio controls on steering wheel	Standard
Satellite ready AM/FM CD receiver (XM/Sirius radio)	Standard
DVD player	Optional
Individual headsets w/ plug-ins	Optional
Scenic view camera	Optional
Destination sign	Optional
Back up camera	Optional
Backeye®360 surrounding cameras	Optional
AV panel w/ audio jack, HDMI Port, USB Port	Optional
iPod' & MP3 connection in driver compartment	Standard
110V outlets w/ USB, w/ optional single or dual 1800w inverter (depending on the number of outlets installed)	Optional
WiFi system	Optional
Auxiliary video ready (for aftermarket satellite TV)	Optional
Onboard entertainment system	Optional
Multimedia entertainment system w/ wireless internet	Optional

HEATING AND AIR CONDITIONING

Bitzer' compressor	Standard
Type of refrigerant	R-134A
Integrated A/C to individually adjustable overhead outlets	Optional
A/C auxiliary system w/ 2-ton compressor (flowing through overhead individual outlets)	Optional
Auxiliary heater (100,000 BTUs)	Optional

STEERING AND SUSPENSION

Steering wheel w/ integrated controls	Standard
Tilt and telescopic steering wheel	Standard
Integral power steering	Standard
Variable assistance power steering	Optional
Wide-stance tuned suspension	Standard
Low/high buoy system	Optional
Independent front suspension	Optional
Kneeling front suspension	Optional
Liftable tag axle	Standard
Automatic tag axle unload	Optional

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Safety and Liability

by Ned Einstein

Common Issues and Common Ignorance: Wheelchair Securement

Unlike most public transportation trade magazines. NATIONAL BUS TRADER recognizes that events and trends affecting one sector can cross breed quickly. I have often been given the luxury to discuss one sector's problems – sensing that they will catch up to other sectors. They usually do. The most salient example is how Uber and Lyft have thinned out fixed route transit ridership after first decimating the nation's taxi industry. That was the November, 2021 installment: https://transalt.com/article/transportation-network-companies-even-worse-than-expected/. This installment's example – failures in wheelchair securement – are certain to hit the motorcoach industry hard, even while current ridership by wheelchair users is sparse. This is especially true in the commuter/express subsector of transit service usually contracted out, and more and more as local and regional transit and school bus services are increasingly being contracted out – often to motorcoach providers.

Events and trends affecting one sector can cross-breed quickly.

There are several reasons for this concern as a safety and liability matter. First, among all public transportation modes, negligent wheelchair securement is one of the three most common incident scenarios (see https://transalt.com/expertwitness/scenarios/). The other two are crossing incidents (see https://transalt.com/content/crossing/ and https://www.crossingaccidents.com/ and boarding and alighting incidents (see https://transalt.com/expertwitness/scenarios/boarding-and-alighting/. Otherwise, the failure to secure wheelchairs is overflowing with lessons for every mode of transportation. It is overflowing with a variety of factors that harm public transportation systems and their insurance carriers as much as they harm their passengers.

Truth and Consequences

Every safety failure contributes to a general distrust of public transportation and its compromised concern for both passengers and non-passengers. Because public transportation services have failed in so many other ways, it is impossible to even guess how much perceptions of poor safety have contributed to the two consecutive years of ridership decline in the transit sector (roughly 10 percent a year) during the two years preceding the explosion of COVID-19. Other failures that almost certainly contributed to this decline include:

- Unreliability and missed connections (largely from tight schedules)
- Unions obstructing the ability of management to rid their systems of the "bad apples"
- Wildly escalating costs and well-publicized cost overruns
- Useless technology (like the evolution of fare collection technology)
- Design failures (like the gradual disappearance of park-and-ride lots – not to mention decades of no design changes other than adding rail and BRT services)
- Policy-making failures (like charging motorcoaches freeway, bridge and tunnel tolls)
- Disruption (like the decimation of the taxi industry by Uber and Lyft, and their negative impacts on fixed route transit ridership, as noted)
- Safety failures (like the impotence of the school bus sector to reduce fatalities and serious injuries to crossing passengers from "pass-bys")

One can go on and on. These factors expose the mediocrity that public transportation has become as much as they expose its ethical and spiritual failure. They help to explain why this single widespread failure – wheelchair tipovers – is so illustrative of the concern which public transportation providers show toward their passengers. Among the most devastating, albeit obscure, barometers, a 2009 study by Fall & Colleagues found that 73.6 percent of all wheelchairs transported on fixed route transit were not properly secured or not secured at all.

Another factor related to both the transportation of wheelchair users and public transportation passengers in general relates to cost. Costs for paratransit service have exploded, largely as scheduling software has increasingly been employed to optimize the chaos of this sector's failure to actually design a paratransit system – as many communities did before the Americans with Disabilities Act (ADA) mandated their provision with a handful of rules harmless to anyone with an imagination. Worse still have been the exponential cost increases in the provision of non-emergency medical transportation (NEMT) service, particularly as it has increasingly been provided by brokers.

73.6 percent of all wheelchairs transported on fixed route transit were not properly secured or not secured at all.

These entities cream off most of the funding as they undermine efficiency by their unique combination of ignorance, indifference and greed (see https://transalt.com/article/defending-contractors-part-3-the-whistleblowers-song in NATIONAL BUS TRADER, May, 2021). Needless to say, paratransit and NEMT services are both heavily populated by wheelchair users. Their transportation costs exceed those of their ambulatory and semi-ambulatory counterparts. What one may be less aware of is how costs have further increased, and safety further decreased, for these passengers during the COVID-19 Era (see https://transalt.com/article/safety-and-liability/ in NATIONAL BUS TRADER, January, 2021).

To be fair, costs for transporting the general public have also exploded with respect to the ability of passenger fares to pay for them. This obviously does not apply to services like pupil transportation where fares are rare. (In a few school districts, parents can be assessed fees to cover all or part of the costs.) In contrast, the ability of fares to cover costs have ballooned in the past half-century. In 1977, fares covered only 50 percent of all fixed route transit costs. Immediately before COVID-19 decimated cost recovery from fares, the most efficient system in the country – the New York City Transportation Authority – had been covering a mere 35 percent of its operating costs from farebox revenues. Systems further down this spectrum, like Kansas City (covering only eight percent of its costs from fare-

box revenue) abandoned fares altogether (see the chart in https://www.nytimes.com/2020/04/09/upshot/transit-battered-by-coronavirus.html?action=click&module=Top%20Stories&pgtype=Homepage).

Of course, it takes almost no time to board an ambulatory or semi-ambulatory passenger apart from the need to pull the bus into and out of the bus stop (and occasionally kneel it). The same is not true for a wheelchair, which must be loaded on a lift or (increasingly on transit and paratransit vehicles) a ramp, and then secured at all four points, with the passenger then secured into his or her chair by a three-point occupant restraint system whose presence on an accessible vehicle is required by the ADA (just as wheelchair securement equipment is). It is not hard to understand why so few wheelchairs are secured. Yet, as in most accessible modes, the cost for transit services are paid irrespective of whether or not the vehicle is in motion.

The opposite is true for NEMT services – which helps to explains why wheelchair securement on this mode is so rare (see https://transalt.com/article/defending-contractors-part-3-the-whistleblowers-song/). That tipovers are so common is also largely the result of the marginal (to be kind) quality of the lion's share of the victim's attorneys and their common reluctance to even file suit against the parties often most responsible for these incidents.

Readers may be surprised to learn that this widespread incident scenario often has little or nothing to do with the physical task of securing a wheelchair. It often has little to do with a driver's training to perform it. Instead, it reflects a deterioration in the institutional dynamics which increasingly govern the provision of public transportation. Sadly, they reflect the same set of dynamics that is overtaking multiple sectors of our industry. The most salient example of these dynamics is the increasing crisis of driver shortages – a trend which began in the 1980s.

It is not hard to understand why so few wheelchairs are secured.

Troubling Statistics and Worse Concepts

As an expert witness, I worked on at least 100 wheelchair securement-related lawsuits. Had I been permitted to examine the vehicles, or had their owners not sold or set them on fire to spoliate the evidence, this number would more likely have approached 150. The increasing majority of these tipovers occur in non-emergency medical transportation (NEMT) service, a sector where evidence has convinced me that few wheelchairs are ever secured. This phenomenon is largely the result of a dynamic that those outside the public transportation field would likely find shocking. The providers of NEMT service are not paid for any time other than when the vehicle is moving with passengers on board. With the hysteria created from the ignorance and disregard of healthcare agencies or, increasingly, their brokers compounding the financial havoc endemic to such a policy, it is not hard to understand why so few wheelchairs are secured. An entirely different set of reasons explains why so few are secured on fixed route transit, where services are fully paid for whether the vehicle is moving or not.

Most attorneys whom I assist on wheelchair tipover cases are surprised when I explain these dynamics to them. Yet they laugh when I ask them if it would make sense to place their community's transit agency in charge of the local ballet. They are surprised when I point out that a healthcare agency is in charge of transporting the most vulnerable passengers in the most-challenging of all transportation modes. They are more surprised when I reveal that most of these agencies have engaged brokers to ostensibly coordinate the provision of this service with a patchwork quilt of usually small private contractors selected without employing any criteria. They are still more surprised when I explain the operating environment under which these contractors are required to provide these services, and that the vast percentage of taxpayers' money used to pay the exorbitant costs of this wildly-inefficient service are gleaned by the brokers. They are incredulous when I explain that the Americans with Disabilities Act does not even require wheelchair securement – and that not doing so is actually the formal policy of a number of transit agencies. Yet rarely does such information drive them to prosecute a case properly and hold this sector accountable.

Accountability and Abstinence

There are layers and layers of reasons, historically, that explain how and why such safety principles as securing a rolling chair on a moving floor became increasingly acceptable. These same reasons explain how and why institution after institution has abstained from any efforts to do otherwise, and how this travesty of safety has become completely acceptable by most members of the public transportation community. The glaring exception to this apathy is the pupil transportation community, although in fairness, the disregard for wheelchair securement is not universal in the paratransit sector either. The values that make it acceptable in most sectors vary not so much regionally. Instead, they are more-commonly related to the degree to which time to perform such a task is available. It has become less and less available as "lead agencies" have translated their concern over spiraling costs into mandates for their software developers to create algorithms that make the schedules impossibly too tight. As noted, securement is performed far less when brokers – who rarely provide the service themselves – are placed in charge of its provision.

A curious anomaly about this last point is the fact that a considerable number of class action lawsuits have been prosecuted – most of them successfully – related to poor on-time performance. In contrast, few attorneys dealing with a particular wheelchair tipover are effective in holding those institutions most responsible for the incidents – the funding (or "lead" agencies) or their brokers" – accountable. Instead, they only go after the "little fish" which are effectively immune from class action lawsuits and other legal recourse such as qui tam motions. (In such motions, a recipient of federal funding which obtained the funds under fraudulent circumstances – like agreeing to comply with all federal regulations while it clearly fails to do so – is required to return the funds it received to the funding agency during the entire period during which it was non-compliant – a period which began in 1991 for most of the perpetrators.)

In truth – for reasons that lie far beyond the scope of this article, and generally beyond the interest of most members of the public transportation community – most of the large and huge law firms that have survived The Website Age "make money by volume." They are not about to be bogged down by the laborious efforts associated with the complex lawsuit that ensues when they file against a lead agency or its usually giant, national oligopoly of a broker.

Minorities and Manifestations

Particularly for the motorcoach sector, where few vehicles not deployed in commuter/express service ever transport wheelchair users (and where few even in the commuter/express sub-sector do so), wheelchair securement is an isolated problem. The failure to speak out against abuses in other sectors catches up with one. This principle was expressed well in a well-known poem by outspoken, anti-Hitler Protestant pastor Martin Niemoller:

"First they came for the Socialists, and I did not speak out–
Because I was not a Socialist.
Then they came for the Trade Unionists, and I did not speak out–

Because I was not a Trade Unionist.
Then they came for the Jews, and I did not speak out–
Because I was not a Jew.
Then they came for me – and there was no one left to speak for me."

As safety is compromised for one subgroup of passengers – just as it is for certain operating scenarios (see http://safety-compromises.com) – it is inevitable that it will increasingly be compromised for broader and broader groups of passengers. The elderly and disabled, in general, are the first large subset to already be infected by this phenomenon. A salient illustration of this principle is the fact that the largest number of incident scenarios I encounter as an expert witness involves boarding and alighting incident scenarios that, like wheelchair securement, are executed when the vehicle is not moving. Not surprisingly, among the more than 165 boarding and alighting-related lawsuits in which I have been involved, at least 50 of the victims were walker or cane users.

More school bus passengers are killed or seriously injured outside the bus than inside it.

The next-largest group is children – by virtue of the large number of crossing incidents that ensnare school bus passengers. Those outside the pupil transportation sector may be surprised to learn that more school bus passengers are killed or seriously injured outside the bus than inside it – in other words, when the bus is not even moving, and where the degree of difficulty represents a tiny fraction of the challenges a driver faces operating a 38,000- to 67,000-pound vehicle in tight spaces in heavy traffic – much less when the schedules are often notoriously too tight.

I suspect I am hardly the first person to state this, but I strongly suspect that the most effective lessons have come from failures. This theme has clearly been the history of the public transportation industry. Truth be told, most of the technological advances in our field were triggered (or demanded) only as the result of catastrophic accidents. The pupil transportation industry provides many of the clearest examples:

- Severe collisions between school buses and other large vehicles led to compartmentalized seating systems.
- Rollovers, and the rebounding associated with both rollovers and other collision scenarios, led seven states to mandate seat belts on even large school buses (where the vehicle's mass usually obliterates the vehicles with which they collide).
- The bus fire that killed roughly 27 passengers in the 1988 Carrollton, Kentucky crash (involving an old school bus deployed by a church) led to the increase in the number of emergency exits, including push-out windows and roof hatches.
- The Alton, Texas crash in 1989 – where a bus was knocked into a river, and 21 students drowned – led to larger passenger windows (even while it did not lead to larger window openings).
- The Fox River Grove accident near Chicago, in 1995, led to a national revamping of railroad crossing arms and signals.

The moral of this lesson about an incident rare to the motorcoach sector – the importance of wheelchair securement – is that the failure to speak out about the failures in one sector eventually catches up with those in others. Isolation is an illusion. As Buddha famously said, "Three things always come out: The sun, the moon and the truth."

As Ralph Nader famously illustrated, it often takes some time for this reality to create change that matters. Depending on what one considers valuable, it is usually better for the truth to come out more quickly than to squeeze it out laboriously. Doing the latter has cost countless lives and limbs in both war and peace. Unfortunately, in the public transportation field, we learn lessons slowly.

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. ❑

Failures in one sector eventually catch up with those in others.

Ned Einstein is the president of Transportation Alternatives (transalt.com [1]), a public transportation consulting/expert witness firm. Einstein (einstein@transalt.com) specializes in catastrophic motorcoach accidents.

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Visit our 40+ vintage bus collection most Saturday mornings at Lakewood NJ Bus Terminal. Join: Friends NJ Transport Heritage Center ($30 annually). See/learn: www.friendsnjthc.org. ☆

15 – MISCELLANEOUS

For those who like podcast shows, I have one called "Busaholic Bus Nut" found on Anchor, Spotify, Google/Apple podcast and other podcast stations. If you can help with topics, contact Philip J. Hamel at (413) 786-3062 or (413) 218-5479 (cell). ❑

16 - MEMORABILIA & COLLECTIBLES

Silver Eagle side emblems and trailing ribbon, $500 for pair (left & right). Golden Eagle emblem, $350 plus shipping. Phone (417) 300-4735 in MO. ☆

Advertiser's Index

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.

February 23-27, 2022. **UMA Motorcoach Expo 2022.** Long Beach, California. For more information view motorcoachexpo.com.

March 21-22, 2022. **Pennsylvania Bus Association Marketplace.** Liberty Arena, Williamsport, Pennsylvania. For more information view pabus.org.

March 23-26, 2022. F**MCA's 104th International Convention and RV Expo.** Pima County Fairground, Tucson AZ 85747.

August 24-27, 2022. F**MCA's 105th International Convention and RV Expo.** Lincoln, Nebraska.

November 13-16, 2022. **Travel Exchange.** Reno Tahoe, Nevada.

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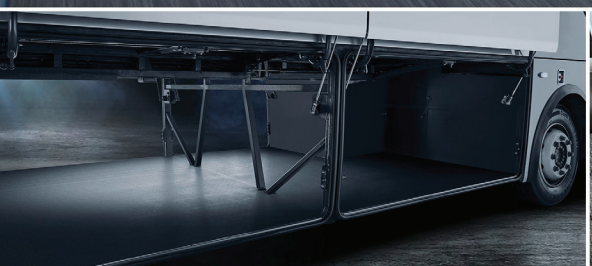

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