



IN IT FOR THE LONG RUN

WRITTEN BY SEAN GALLAGHER | SEAN@STNONLINE.COM

The school bus is an investment. It's a contract with the future. It's a tightly held bond with the promise that, over the course of the vehicle's lifespan, the thousands of children who hop on board will safely return home at the end of the day.

Transportation departments are tasked to fulfill this obligation. The range of responsibilities overseen by directors and supervisors, and delegated to managers and mechanics and drivers, take commitment and expertise.

All the moving parts converge on two simple acts—keeping buses on the road for as long as possible balanced with the fleet operating at its highest capacity in terms of safety and performance.

Buses break down. Buses need repairs. Buses require upgrades. Buses demand replacement. What each of these potential issues have in common is that they take money to solve. For districts nationwide, money is an element that is often in short supply.

According to the 2016 Fleet Managers survey conducted by School Transportation News, more than 60 percent of the 162 responses to a question asking the biggest challenges facing maintenance operations said aging vehicles and out-of-date software were the most pressing issues for the impending school year.

This challenge was closely followed by budgetary concerns, with

roughly 55 percent of respondents listing the financial situation as a subject that needs addressing.

School buses aren't cheap, and the ability to purchase new vehicles is frequently hindered by lack of the necessary resources. Due to this frequent shortcoming, transportation departments have become quite proficient at stretching the funds until the fiscal circumstances change.

It must be noted that school buses are amazingly resilient and built to last. Even after all-important warranties expire, as some transportation directors and fleet managers have stated, mechanics on staff work magic at keeping the buses on the road. With the right attention from experts either in-house or outsourced, fleets can seemingly last forever.

There are dozens of options to allay the inevitable. But when the time comes to address that one pesky vehicle, one fact remains: Fewer operations are currently buying used buses. This was confirmed by a number of transportation directors and fleet managers.

"We do not purchase used school buses," said Keith Sterling, director of communications and public information at Anaheim Elementary School District in Southern California.

This aversion was reinforced by Peter Lawrence, transportation director for Fairport Schools, near Rochester, New York, who declared



that his district refused to permit used buses to populate the fleet. Instead, Lawrence reported, a number of fleets nationwide are relying on frame-off restoration.

“(Maine) State Director of Transportation Pat Hinckley utilizes a phenomenal program for overhauling their buses through a company that rebuilds all of the Humvees for the U.S. government and also does school buses,” Lawrence said.

One company that performs these kinds of refurbishments is Buck’s Wheel & Equipment, which has been operating out of Fort Worth, Texas, since 1951.

The company has devoted a portion of its business to school bus refurbishment, specializing in complete replacements or repairs of brakes, suspension, A/C systems, flooring, special-needs lift conversions, seat repairs, interior and exterior body repainting, and installing up-to-date safety standard features that a new bus would have.

Arthur Laxson, GM at Buck’s, pointed out that, more often than not, bigger districts are able to purchase new buses every year, so they generally don’t require refurbishment services.

“We are working with smaller districts whose budgets are limited,” Laxson said. “One new bus is costing around

\$95,000 these days. We help them stretch their budget by refurbishing three buses for the price of one new bus.”

The environment wears down buses, the specific impact depending on where in the country the fleet operates. If a fleet runs in the northern region of the U.S., for example, snow and salt can rust out the bus bodies as well as components.

In contrast, areas that don’t have to deal with particularly harsh winter climates, such as the West Coast and parts of the South, operate the same bus bodies for decades without a need for refurbishment. However, the tradeoff, Lawrence noted, is that “the chassis and mechanical items are subject to more wear, since the buses tend to be in service much longer than in the Snowbelt.”

“Our current average vehicle age is roughly five years. We have a 10-year bus replacement plan based on environmental conditions that include snow and salt (granular sodium chloride treated with magnesium chloride) that tends to be corrosive on metal parts,” he said.

Sterling reported that a majority of the 82 school buses in the Anaheim fleet are almost two decades old. He estimated that, combined with the ages of the special education buses, the average age of the entire fleet is 16 years.

The repairs that involve immediate action are the ones that deal with safety, and “major repairs are scheduled for

RUST PROOF

Rust is a relentless adversary to the longevity of a school bus. Its corrosive nature strikes no matter the season and its reach spans the entire country. The constant battle against rust is hard won by the persistent efforts of transportation departments.

To ensure that a fleet runs at optimal performance, transportation departments typically utilize routine washings or anti-corrosion packages, or a combination of both.

Jason Sherman, director of facilities and transportation for Delaware City Schools in Ohio, has to repeatedly deal with seasonal road salt, which must be flushed away immediately to prevent rusting. He said he finds that “regular washes provide better overall protection.” Oftentimes, the utilization of anti-corrosion packages is not a central concern, or as Mark Weaver, director of transportation for Jefferson City Schools in Georgia, stated, “So far, regular washes have provided the same amount of protection.”

On the other hand, some transportation departments are unable to wash vehicles thoroughly or frequently enough and “corrosion protection seems to make components last longer,” said Jerry Ford, transportation supervisor for Delaware Valley Regional High School District in New Jersey. This viewpoint was supported by Raymond Gesaman, transportation coordinator for Northwest Local School District in Ohio.

“We make sure all units are undercoated. No hosing out of vehicles to protect floor, and the vehicles are washed when time allows,” he said. Peter Lawrence, transportation director for Fairport Schools in New York, said his district uses a product called Carwell Corrosion Control as a measure to maintain the integrity of his fleet’s bus bodies and allow mechanics to better service the buses.

“This product’s rust inhibitors has kept our bus bodies in great shape and allow mechanical parts to be unbolted as opposed to torched off due to corrosion,” he said.

Ryan Lyman, transportation supervisor for Lincoln County School District #2 in Wyoming has to deal with the harsh winters. Yet, through it all, he has tackled any rusting problems through a mixture of both options.

“Not sure if it’s the anti-rust or regular washing, but we don’t



➤ Rusting ABS teeth.

have issues,” he said.

Repeated washings and the application of anti-corrosion protection appear to be the key to defeating the cruelty of rust, as reinforced by Jeff Moody, director of transportation for Tomah Area School District in Wisconsin. The Badger State is infamous for the severity of its winter months. “Frequent washing is the key. Corrosion protection helps, but a bus has so many open areas, nooks and crannies, etc. You cannot seal in them enough to prevent corrosion,” he said.

More and more, the industry is seeing vehicle components coated with corrosion protection to extend life and reduce maintenance costs. Such is the case with brakes. Johnathan Capps, vice president of engineering for Webb Wheel, said a frequent concern with rust in brakes deals with hydraulic rotors, especially those subject to high concentrations of magnesium chloride, or road salt.

“They are having corrosion build up along ABS teeth, causing signal faults and prompting replacement before usable life is up,” he said. “We’ve also found some rotors being replaced due to delamination—essentially the surface starts to rust and flake away. There are no replacement guidelines for this, it just is what it is and requires replacement.”

Many component suppliers spray a coating of zinc or other corrosive-resistant material to parts to ward off rust, but the layer can wear away over time due to heat, as braking temperatures can exceed 350 degrees. Webb Wheel, Capps added, goes a step further by adding a metallurgic heating process to its products to provided heightened corrosion protection that he said can double product life.



a later date,” Sterling said. “If repair is highly specialized and mechanics do not have the knowledge, tools or time for the repair, then bus is sent out. All warranty and recall work is sent out.”

Lawrence credited the durability of the Fairport fleet to the proficiency of the mechanics that work on the individual buses, as it’s considered a “win-win for both parties if our team is ahead on their maintenance and repair schedules.”

“It is critical that technicians keep up with the preventative maintenance



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program, as it will save them time and being inconvenienced by mechanical breakdowns," he added. "These men and women need to look critically at all aspects of the school bus to identify items, like cracks, leaks, frayed or chaffed hoses, etc., that could cause a road call and inconvenience our passengers."

Lawrence further stated that the Fairport CSD fleet benefits from inspections by the New York State Department of Transportation every six months, which provides an extra level of professional scrutiny to make sure the buses adhere to the precise standards of school bus safety.

In catching maintenance items early, the benefits are that inspections provide large rewards down the road. According to Lawrence, the Fairport fleet had a 99-percent pass rate last year.

"We rely on NYS DOT regulations and OEM recommendations for determining repairs," he said. "If an item may affect safety, it must be done ASAP. If an item can be cleaned and scheduled for a slow time we do that as well provided safety is not compromised."

Sterling reported that the minor repairs are the ones that require the most attention, and addressing them

**YES
40%**

Does your district or company purchase new school buses with a rust or corrosion protection package included?

**NO
60%**

extends the shelf life of the vehicles. Technicians and mechanics keep a close eye on brakes, tires and filters.

One feature that is overlooked, but no less important to the general upkeep of the school is the seats, which are "repaired as needed," Sterling said. "Seats and seat coverings are mostly repaired due to students tearing and ripping them apart."

Coverking is an Anaheim-based company that specializes in custom-tailored seat covers, among things, and works with the Anaheim school district.

Alex Puente, an account manager at Coverking, observed that students repeatedly peel and pick at the vinyl seat covers, which "is time consuming for the district to fix."

According to Puente, Coverking has repaired the seats on the roughly 40 school buses in the Anaheim fleet. The company has also forged a partnership with nearby Garden Grove Unified School District with plans to target to Los Angeles-area district before expanding operations nationwide.

"(Coverking) makes standard seat covers for cars but wanted to see how they could help," Puente said. "Developed vinyl that goes over seat and can be installed in a minute. Thicker material. Not much of a price increase at all." ●

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