

Chemical Hauler Gets Smart

Odyssey's Linden Bulk Transportation reduces incidents, improves CSA, saves money with SmartDrive's video-based safety program

By Jason McDaniel

THE National Tank Truck Carriers (NTTC) recently recognized Linden Bulk Transportation's safety improvements, listing the Linden NJ-based chemical hauler among its 2019 Improved Safety Carriers. Linden also earned an Honor Award in the 15-18.5 million-mile class of NTTC's 2019 North American Safety Contest.

Thanks to the passionate support of Linden Bulk president Michael Salz, there's no secret to their success.

Salz, whose family, along with Paul DeFalco, founded Linden—now a subsidiary of Odyssey Logistics & Technology—in 1981, credits adoption of SmartDrive's video-based safety program in 2018 for helping Linden reduce incidents; and cites a 65% improvement compared to peers in key metrics within Linden's Compliance, Safety, Accountability (CSA) score as critical proof.

A carrier's CSA score is a key part of the Federal Motor Carrier Safety Administration (FMCSA)'s efforts to promote fleet safety on the nation's roadways.

"I can't even quantify the number of accidents that we have prevented by making sure every single driver is doing what they're supposed to be doing," Salz said. "Whether it's a driver who wouldn't learn, and I said, 'You can go drive for somebody else, I'm done,' or it's a driver who we coached and saw the benefit. It's got to be 40 to 50 incidents or accidents over the last 24 months that we've prevented."

Those are the types of results Jason Palmer, SmartDrive's chief operating officer, expects to deliver for his company's customers, who include other liquid and bulk carriers like Groendyke and Southern Tank Transport, through a video safety program built around two key differentiators: The ability to offer many different capabilities through one vehicle platform, and a managed review service that helps ensure a user's success.

"Tanker fleets, because of the risks involved if something happens, often are some of the first fleets to implement these leading-edge safety solutions," Palmer said.

Family founded

Linden traces its roots to the trucking industry deregulation that occurred in the early 1980s.

Salz's father, Louis Salz, and his cousin, Sandy Salz, already knew



Linden Bulk, an Odyssey Logistics subsidiary, first deployed a dual-camera SmartDrive safety system, with inward- and front-facing cameras, in 2018.

Photo Jason McDaniel/BT



the transportation industry, through their experience operating Linden Motor Freight, so they jumped at the opportunity to start a chemical-hauling business when approached by DeFalco, who brought the liquid knowledge to their new partnership.

The company started in its namesake city in New Jersey, then with help from key customers, expanded into Texas and Louisiana before it was acquired by Odyssey in 2016. Linden currently operates terminals in Linden, Bensalem PA, Joliet IL, St. Gabriel LA, Pasadena TX and Baytown TX, and Salz said a seventh terminal is "in the works."

Salz joined the business in 1986, and went to work doing all the "dirty jobs" available. "In the late 80s, as I was going through college (at the University of Maryland), I was working over here at the tank truck company, washing trailers or changing flat tires, in the wash rack, (working)



Linden Bulk Transportation, which started with less than 20 power units in 1981, now operates a fleet of 350 tractors, including two 2021 Freightliner Cascadia 116 day cabs with Agility Fuel CNG

systems, Michelin X One wide-base tires, Omnitrac ELDs and SmartDrive cameras. The company also boasts a diverse array of 700 tank trailers. *Photo Jason McDaniel/BT*

night shift, dispatch and everything under the sun.”

He joined the bulk operations full-time in 2004, and now boasts 27 years of experience in the transportation industry. He’s also the last remaining family member with the company after the sale to Odyssey.

“I love it,” Salz said. “I love coming to work every day. I wouldn’t do it if I didn’t love it, as far as tradition, the industry, the people. What would we do (without trucking)? If you think about what happened with COVID-19, to have a trucking company for the first time, in almost my entire lifetime, who’s viewed in a positive light, whether it’s delivering gasoline or going to Walmart to get food off the shelf, is wonderful. The positive feeling that my drivers have on the



When an incident is recorded, SmartDrive analysts receive the video, check it for relevancy, score the action, and then send it to Linden Bulk’s safety personnel for review.

Photo Jason McDaniel/BT

Linden Bulk . . .

road today is very different than it was 12 or 18 months ago.”

Growing fleet

Salz wants to preserve that feeling by keeping drivers, and the public, safe, but doing so becomes increasingly difficult as a carrier’s fleet expands. Linden started with less than 20 units and now operates a fleet of 350 power units, including two 2021 Freightliner Cascadia 116 day cabs with Agility Fuel CNG systems and Michelin wide-base tires, Omnitrac electronic logging devices (ELDs) and SmartDrive cameras. The company also boasts a diverse array of 700 tank trailers, and another 180 ISO container chassis for its intermodal depot.

Linden mostly hauls poisons, corrosives, flammables and combustible liquids, along with a great deal of finished lubricating oils and lube oil additives, which is why all 275 drivers—a third are company drivers, and the rest are independent contractors who own their trucks or lease them through Linden’s lease-purchase program—have Hazardous Materials Endorsements (HMEs) on their CDLs.

“We have acid trailers, and we have FRP trailers, which are fiberglass reinforced plastic trailers that handle bleach and water treatment



Parent company Odyssey Logistics & Technology strengthened its position in the chemical logistics business with the acquisition of then-family-owned Linden Bulk in 2016.

Photo Linden

products,” Salz said. “We also have stainless steel trailers, aluminum trailers, compartment trailers, insulated trailers, centers, rears, and trailers with centers and rears, so the trailer can unload from different areas. We basically have any trailer anybody needs to pull any type of product.”

Salz said Linden tries to maintain an even split of center- and rear-loading trailers, and insulated and non-insulated trailers, from Polar, and Wabash National’s Brenner and Walker. They also run highly customized trailers for some of the world’s largest chemical companies.

Program adoption

Linden, like most tank truck carriers, hires elite drivers, with a minimum age of 25 years old. But even the safest, most highly trained truck drivers are only human, and they can’t control all the other drivers on the road, so Salz always is looking for new ways to keep them safe—and Linden out of trouble.

SmartDrive, which Omnitrac is set to acquire after the two technology companies reached an agreement in September, provided the latest, and most effective, solution with its video-based system.



Linden Bulk’s Pasadena TX terminal, which is home to about 125 tractors and 250 trailers, includes a six-bay maintenance facility. The company currently operates six terminals across the country, with a seventh terminal currently “in the works.” *Photo Jason McDaniel/BT*



One of Linden's newest trailers is a custom Polar Tank Trailer with a Betts package of quick-clean valves and Vapor-Pro vapor recovery. Photo Jason McDaniel/BT



The 2021 Polar trailer, designed and spec'd out for a key customer, also boasts a Scully Load Anywhere Overfill Prevention System. Photo Jason McDaniel/BT

Linden tested the program against a competitor in early 2018, and Salz said adopting became a “no-brainer” after he saw drivers doing things he didn’t like with the inward-facing cameras—even if it meant losing drivers. So Linden signed on with SmartDrive in Q2 2018 and began a rollout that summer. “There was no doubt in my mind that was the right thing to do for Linden, Odyssey and

the public,” Salz said.

Rollout began with company drivers and independent contractors who volunteered. Salz said Linden now has a two-camera system in about 250 trucks. Starting in 2019, all new drivers must use the system, but Linden still allows some veteran company and independent drivers to run without the cameras—until they have a problem.

“If a driver has two hard-braking events, that we get through our old (non-video) system, we’ll tell them, ‘Hey, you’ve got two hard-braking events, so you’ve got to get a camera or we’ve got to cancel your lease,’” Salz said.

Typically, once the driver sees how the camera helps them, especially through exoneration, or the ability to win “he said-she said” arguments

POLAR-PAC

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Robby Arnold,

VP of Maintenance at Andrews Logistics

“It’s smaller and easier to install than the competitors.

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A Pelican Worldwide pressure/vacuum tester ensures Linden's trailer vents are up to code during HM-183 cargo tank inspections.
 Photo Jason McDaniel/BT



Linden hauls poisons, corrosives, flammables and combustible liquids, along with finished lubricating oils and lube oil additives.
 Photo Jason McDaniel/BT

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on scene, they jump on board, Salz said. And Palmer said swaying drivers now is easier than five years ago, because many already have used cameras, or know someone who has. "Most of the time, once they see how it's being used, and they see it's there to help them, that frustration or apprehension starts to lessen," Palmer said.

The key to acceptance, he added, is complete transparency, so his team works with carriers on the most effective ways to implement SmartDrive's

technology, while emphasizing how it aids drivers, as a constructive tool in coaching and training—and as proof they weren't on their phone, for instance, should an incident occur.

Boundless benefits

The advantages of deploying a video-based safety system are myriad, Salz said. Fewer accidents, improved safety scores—which carriers need to keep high to stay in business—savings in insurance and legal fees, and a no-nonsense reputation for putting safety above all other concerns, with

peers and customers, are only a few.

And safety improvements don't stop after the initial rollout. Salz said Linden's safety rankings have improved each year, from 2017 to 2018, and from 2018 to 2019, and he's anticipating further improvements in key metrics this year. "It's constant improvement," he said. "We're getting better every single year.

"We were average (compared to our peers), and now we're getting best in breed."

SmartDrive positions itself as a best-in-breed vendor through its unique offerings, including an endless array of driver skills the company identifies and isolates for coaching, saving time for safety departments; customized scoring; and a success team assigned to every customer. "They're doing a lot of the upfront legwork for the carrier that the carrier probably doesn't have the time to do, and they're specialists in doing it," Salz said.

That service is SmartDrive's greatest advantage, Palmer said, and the core principal upon which it was established. "What makes SmartDrive unique is we've always had this managed review service as our flagship process," he said. "And even as we implement new features, and augment with computer vision and e-cab alerts for drivers, it's that fundamental accuracy, as well as the breadth of driving skills we're looking for with our driving analysts, that's been a critical success component in getting the results we deliver."



Linden hires only elite drivers who are at least 25 years old, and all 275 drivers, including company drivers and independent contractors, have Hazmat endorsements on their CDLs.

Photo Jason McDaniel/BT



SmartWay-verified Michelin X One wide-base tires, at left, are designed to improve a fleet's bottom line. A Wheelmaster pneumatic torque wrench ensures wheel nuts are safely tightened to manufacturer specifications.
Photos Jason McDaniel/BT

Through that essential review process, SmartDrive helps fleets understand where each driver needs the most help, whether its assistance with defensive driving, understanding following distances, merging in traffic, backing up, or any other skill that, when not executed properly, increases the odds of having a collision. SmartDrive can create a "game film" for the driver, integrate coaching within the fleet's existing safety program, and track the effectiveness of any training in altering a driver's actual performance.

"There are a lot of scoring solutions out there that primarily focus on exoneration, or a smaller subset of driving skills, but they don't have the end-to-end program where they're

asking, 'Are we reducing collisions, are we focusing on the driving skills that are going to affect that, and are we working with the customer to make that happen?'" Palmer said.

Singular service

Linden also uses SmartDrive's extended-recording service, which enables the ability to request video later. The option helped Linden clear a driver after a minor incident at a plant. The camera caught the driver stopping to ask a plant employee where to go, and recorded their conversation, with the plant employee pointing and explaining where to take the load. After the incident occurred, the plant employee claimed he never talked to the driver, who just did his own thing, but video proved otherwise.

"It really protects you when you're out on the road with a law enforcement individual, because it will probably get the driver of the other vehicle to tell the truth," Salz said. "You don't want to lie to a police officer in a report and then have a video come out afterward. It saves you, from an insurance standpoint, a huge amount."

Salz mentioned other incidents they've caught on camera, including a car abruptly cutting across multiple lanes in front of Linden's truck, causing an accident; a hit-and-run where the license plate was captured, helping find the culprit; and an insurance scammer trying to force a rear-end collision. Linden has assisted law enforcement with accidents they weren't involved in, but were caught



Linden Bulk President Michael Salz maintains his company's CSA scores have improved every year since deploying the SmartDrive system, and he's anticipating further improvements in key metrics this year. "We were average, and now we're getting best-in-breed," he said.

Photo Jason McDaniel/BT



Lindén's diverse trailer fleet includes fiberglass reinforced plastic (FRP) tank trailers for bleach and water treatment products, stainless steel and aluminum trailers, compartment trailers, insulated and non-insulated trailers, and center- and rear-loading trailers.

Photo Jason McDaniel/BT

Lindén Bulk . . .

on their cameras, and drivers can hit a panic button if they see something that worries them.

And with distracted driving as a growing concern, more fleets are opting to install more cameras, including side-facing cameras on tractors and trailers, which Palmer said offer additional benefits for tank truck drivers. SmartDrive's new SR4 transportation intelligence platform

includes integrated multi-camera functionality, allowing plug-and-play support of up to nine cameras, including third-party equipment.

"With a lot of tanker fleets, the driver's responsibility is not just driving," Palmer said. "They may also be loading and unloading fuel or milk, or whatever it is they're hauling. And so, in terms of following safety best practices, with how they're doing their job once the vehicle is parked, side cameras allow fleets to do those

performance audits as well."

Audits, along with training and coaching, are tailored for each fleet and driver through SmartDrive's customizable scoring system. Actions and skills are assigned different levels of monitoring and different point values, depending on the importance of that action or skill for the carrier. For instance, a tank fleet hauling fuel is going to have zero tolerance for smoking, while a dry van fleet might allow drivers to smoke.



Lindén Bulk's SmartDrive rollout began with the company drivers and independent contractors who volunteered. Lindén now has a two-camera setup in about 250 trucks, and starting last year, all new Lindén drivers were required to use the video-based safety system.

Photo Jason McDaniel/BT

When an incident is recorded, SmartDrive analysts receive the video, review it, score it and send it to the appropriate personnel. And once drivers have adjusted certain behaviors, carriers can modify point values to emphasize different skills, or promote further improvement. "As my guys were getting better, I made it a little bit harder for them to keep their scores down," Salz said.

Carriers also can have SmartDrive monitor for actions that aren't scored, like yawning. If a driver is yawning, and the carrier sees the video, safety personnel can work with dispatch to make sure they're scheduling shifts in a way that ensures drivers receive enough rest while meeting hours-of-service requirements.

While customizing for each carrier, SmartDrive also provides a benchmark that allows carriers to measure standardized safety scores against other carriers. "Linden will have its safety score, and then there's also a SmartDrive Benchmark score," Palmer said. "So they can see how they perform against their peer group, and they also can tailor the score for their drivers."

System deployment

When a carrier chooses SmartDrive, deployment begins with a kickoff meeting with management, to make sure everybody understands the program and is on the same page with goals and expectations. Then SmartDrive will meet with driver managers and drivers, and provide educational materials about the program.

Installation of hardware, including the cameras and control module, is done on-site, either by the carrier's maintenance crew, a third-party installer or SmartDrive's installation team, depending on their preference. The control box, which includes the cellular module that enables real-time offloading to the cloud, a solid-state drive and battery backup, is installed in a safe location outside of the "crumple zone."

A monthly subscription fee covers cellular expenses, equipment monitoring and 24-7 support, and includes a success manager for each customer. Many different service levels are available, from a basic exoneration

package to a full-fledged program that includes computer vision, collision warnings and in-vehicle driver feedback.

Palmer maintained SmartDrive customers typically realize a 30% to 70% reduction in collisions during the first two years of using the program, depending on how fully they embrace it. "We're a comprehensive program, and that's why we deliver results for our customers, and why we're growing," he said. "Fleets still are investing in safety, and we

continue to experience an accelerating growth rate, despite the impact from COVID."

And for Salz, no investment in safety—or a video-based system that promotes it—is too great.

"Carriers have \$100,000 to \$250,000 deductibles, and they're self-insured ... so the return may be more than ten-fold. It could be twenty-fold. It's a huge number.

"I can't see the upfront cost changing anybody's decision if they beta test it." ■

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