

Vehicle Scales



Case Study Collection

A Small Sampling of Our Expert Offering

METTLER TOLEDO

Vehicle Scale Solutions

Delivering What Your Operation Needs

Vehicle scale projects can be overwhelming, from managing the site layout to what the operation flow will be and what of the many equipment options best fit your business - even experienced business owners can be unsure. Our new case study collection outlines a small sampling of the solutions that we deliver every day.

Traditionally vehicle weighing solutions have come in one-size-fits-all packages. When a custom solution is necessary you end up sourcing from several different companies to achieve the desired result - leaving you frustrated and spending more money than planned.

For the weighing technology experts at METTLER TOLEDO, custom solutions are customary. As leaders in innovation - we deliver a range of standard to complex solutions every day. Our consultative approach to projects ensures a successful implementation and worry free experience from start to finish.

Our new case study collection illustrates a handful of some unique solutions we have worked on around the world. Whether you are looking for a full solution, or only want to upgrade your load cell system - we have a solution that will fit your unique needs.



Lightning Protection and So Much More



When lightning strikes continued to shut down a logging company, causing them to lose business to local competitors they turned to METTLER TOLEDO for a solution.

4

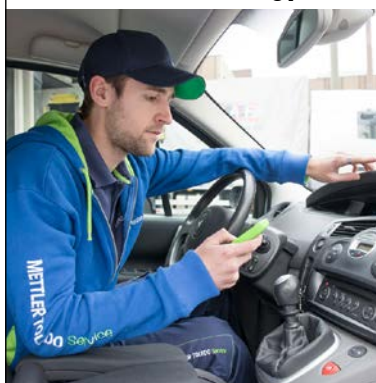
Optimizing Efficiency at Grain Facilities



Discover how the installation of a grain dump through helped this company improve its work flow and its profits - becoming a local leader in their market.

6

Avoiding Downtime with Advanced Technology



When downtime is not an option, only one company can provide you with the technology you need to ensure your scale is running around the clock.

8

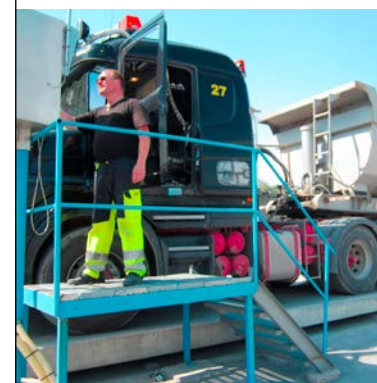
Truck & Rail Scale Upgrades



For one major chemical company, a truck scale upgrade was enough for them to see the value in POWERCELL®PDX® digital technology.

10

Unattended Weighing at Hazardous Locations



Compliance with the law allows no compromises. One waste facility needed a solution that would ensure they were compliant and could prove it.

12

How Predictive Maintenance Can Help Your Operation



See how predictive maintenance saved this company from a downtime surprise - and imagine how it could safe guard your business.

14

Lightning Protection & So Much More Total Solutions for Consistent Scale Problems

A lightning strike can shut down a truck scale in a flash. When suppliers and customers started taking their business elsewhere, the Layton Mill & Timber Company resolved to put an end to the downtime caused by lightning damage. METTLER TOLEDO supplied a new truck scale with superior lightning protection.

The Layton Mill & Timber Company is a supplier of railroad ties and lumber, located in the hills of north Arkansas. Although the truck scale on site was far from new, it was functional and essential to the business. The company uses the scale to determine the net weight of the logs delivered to the mill, by weighing each incoming truck when fully loaded and again when empty. If the mill's scale is not working, log trucks have to go elsewhere to use a public truck scale.

Scale downtime was a major inconvenience for suppliers. Whenever the mill's scale was out of order, trucks delivering logs to the mill were forced to drive an extra 30 miles and pay twice to determine the net weight of the delivery. Some suppliers preferred to deliver their goods to another mill, rather than spend the extra time and money. As a result, problems with the truck scale had a direct effect on the mill's business.

Lightning Problems

The Mill is located on top of a hill in the Ozark Mountains, unfortunately making it prone to lightning strikes during thunderstorms. The frequent lightning in the area was a constant threat to the company's truck scale, causing costly unplanned downtime. Each time the scale was down, it took more than a week to get the scale working again. During this time, some truck drivers would take their loads to

other mills. After the scale was repaired, it would take time to regain the confidence of suppliers and customers.

After the scale was damaged twice during the span of a few weeks in 2010, the Mill decided to replace it. When investigating options, they looked at the POWERCELL® PDX® load-cell system, recognizing that its superior lightning protection could have a huge positive impact on business.



A Total Solution

The Mill decided on a METTLER TOLEDO steel-deck truck scale with POWERCELL PDX load cells connected to an IND780 terminal. This advanced technology gave them the most reliable vehicle-weighting solution on the market. With proper routine maintenance, the POWERCELL PDX predictive diagnostics system virtually eliminates unplanned downtime. They

also purchased a maintenance contract to help ensure the scale's continued high performance, giving them peace of mind, knowing that their truck scale no longer will disappoint suppliers and customers.

► www.mt.com/vehicle



Discover True Lightning Protection



POWERCELL® PDX® load cells have been independently tested and proven to withstand strikes up to 80K amperes. Visit the link below to see a video of the testing and learn more.

► www.mt.com/LightningStrike

Optimizing Efficiency at Grain Facilities Integrated Grain Dump-through Scales

For some manufacturers, a grain dump-through scale would be considered a custom solution, but not METTLER TOLEDO. Learn how an integrated grain dump improved efficiency for one company, so they could fulfil their commitment as a supplier to the local ethanol facility.

The facility, which started operation in November 2006, is capable of storing more than 360,000 bushels of corn at peak capacity and has the potential for expansion to over 2 million bushels. Corn from area farmers is purchased at market prices and stored for delivery to the ethanol plant.

The company needed a solution that was reliable and accurate, and after reviewing several options, they decided METTLER TOLEDO was the best company for the job. A steel deck dump-through truck scale was installed to handle all in and outbound products. The scale is above ground and features steel grating the entire width of the scale through which grain can be dumped to the hopper below. The hopper is capable of holding 1,200 bushels of corn and uptake to silos is rated at 5,000 bushels/hour.

Improved Weighing Efficiency

With the new grain dump in place, trucks delivering corn enter the site and drive

onto the scale. Next, a corn sample is analyzed and the gross weight is taken. Then, the truck driver opens the belly dump-trailer doors and corn is deposited through the scale grating into a hopper. From there it is transferred to the silos. A second weight reading is taken, of the empty truck/trailer, and a weigh ticket printed.

Trucks picking up corn follow a similar

procedure, driving onto the scale to first weigh empty. Then, two overhead load-out bins fill the trailer and a full weight reading is taken. Both sequences are much more efficient than their previously used process weighing in, driving to a dump area and weighing out.

Industry-leading Technology

POWERCELL® PDX® load cells provide improved accuracy and reliability. With



Processes are streamlined by integrating grain dumps directly into the weighbridge.



a failure rate less than 0.02 percent, the supplier never has to worry about their scale failing during busy season. Additionally, by integrating DataBridge weight data-management software, they are now able to track their inventory more closely than ever before, giving management new insight to the business.

The facility is now growing quickly, and is well on its way to reaching optimum capacity of 2 million bushels.

► www.mt.com/VEH-GrainJournal



Avoid Downtime with Advanced Technology Remote Scale Service

For one American recycling and scrap company, remote service shed light on a significant weighing error event long before it put a dent in the company's bottom line.

An American scrap and recycling company sees about 100 trucks per business day use its over-the-scale operation. The weight of each truck, as well as the materials it carries, determines its payout to clients.

The business maintains just one scale for this service a 70,000-pound, 10-load-cell analog model. Because of the company's volume, action on that scale is brisk, with new trucks on and off again in a matter of minutes. A mounted outdoor "scoreboard" shows customers exactly what operators see on the scale indicator screen to ensure transparency. Weight tickets are printed at the end of the transaction.

Accuracy Matters

Because customer payouts are determined by weight, an error in this system can be detrimental to the company's bottom line, says the company's owner. "We don't want to be giving stuff away, but we also want to be treating our customers fairly. Accuracy is very important," he says.

When METTLER TOLEDO approached the owner in mid-2014 about becoming a test site for the new model IND570 scale indicator enabled with InTouchSM monitoring and communications software, the owner thought it sounded like a helpful upgrade. "We liked the idea of having immediate feedback on the scale," he says.

Today if an alarm condition is detected locally, a message is sent to METTLER TOLEDO's remote service desk. Typically

the response is so fast that the local service technician will know before company operators that they have a potentially damaging event on their hands.

A Potentially Costly Example

The company has benefitted from installing the next-generation scale indicator and enabling InTouch services.

When a significant storm with numerous recorded lightning strikes occurred, the IND570 began transmitting a "Low Volt-

age Excitation" alarm, indicating a possible failure caused by a lightning strike.

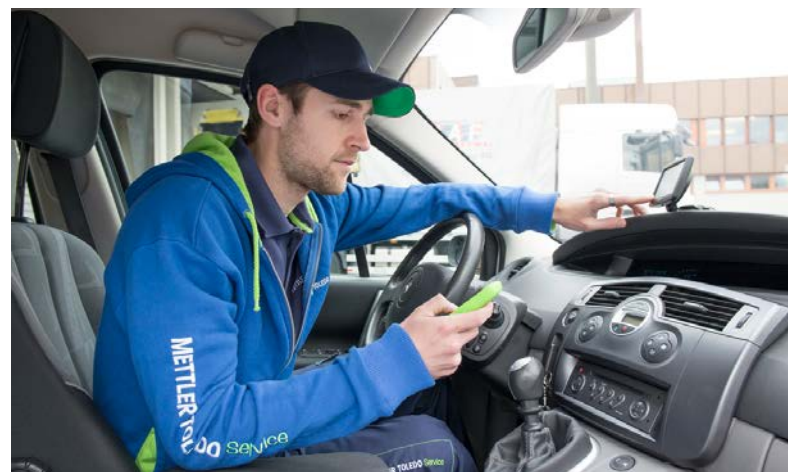
Email alerts to the METTLER TOLEDO remote service team initiated a diagnostic intervention that led to a phone call to the local service technician. He was on site within 30 minutes. "Once I took a look, I was able to run back to the shop and bring out a prior model IND560 for them to use temporarily," the technician says. "The IND570 was so new that

I didn't have a spare motherboard on hand. I received the new part by overnight delivery and installed it the next day," he says.

InTouch was fundamental in the quick diagnosis and repair. After seeing the software in action, the service technician says he feels confident that InTouch's ability to proactively alert service staff to issues that have the potential to affect accuracy and uptime is going to benefit many more of his customers.

"The less they have to wait to find out they have a problem, the better it is overall," he says.

► www.mt.com/service



Truck & Rail Scale Upgrades

Improved Reliability and Accuracy for Your Scales

When reliability is a primary concern, proven equipment is a worthwhile investment. One industrial chemical company upgraded numerous vehicle scales at multiple sites, all with POWERCELL® PDX® technology.

A large industrial chemical producer operates at numerous locations, using truck and rail tankers to transport raw materials and finished goods. Vehicle-weighing systems check for proper filling of the tankers, ensuring that accurate values are used in business transactions and inventory management. When accuracy and reliability became an issue, the company upgraded their vehicle scales at multiple sites, all with POWERCELL® PDX® technology.

Upgrade Benefits

One of the production sites for the chemical producer used a truck scale made by a different manufacturer, including an analog load-cell system with junction boxes. It seemed like every couple months the facility was calling on maintenance to come fix an issue with the scale. Needing better reliability, the customer consulted their local METTLER TOLEDO Industrial Service team. Even though the scale was not made by METTLER TOLEDO, the team was able to upgrade the scale's

weighing components by installing advanced POWERCELL PDX load cells. The customer was pleased with the result of the upgrade, noticing immediately the decrease in service-related issues and inaccuracy.

Many Upgrade Options

The facility manager realized that improved reliability and accuracy could be a benefit to another site, where the old mechanical-lever rail scale was used to

weigh rail tankers. With its antiquated lever technology and worn-out components, the scale was failing constantly. After the success of the two upgraded truck scales, the customer inquired about recommendations for their rail-weighing needs.

Unique Solutions

The team assessed the old rail scale and determined that they could extract the large mechanical components



Virtually any existing weighbridge can be retrofitted with new POWERCELL load cells.



underneath, and replace them with custom engineered mounts for the 90-ton POWERCELL PDX load cells. By simultaneously replacing the rails on the existing scale deck, the customer would get like-new performance at a fraction of the cost of a new rail scale. This combination of performance and value made the customer's decision to upgrade the rail scale an easy one.

Lasting Results

The customer now enjoys the same reliability and accuracy in truck- and rail-weighing equipment across multiple sites. With advanced performance in demanding applications worldwide, POWERCELL PDX load cells continue to prove themselves every day.

► www.mt.com/upgradetopdx



Efficient and Accurate Where it Counts Unattended Weighing at Hazardous Locations

In the urban center of Rochelle, France, sanitation and waste-chain management is making every kilogram count. METTLER TOLEDO automated weighing technology provides the speed and accuracy to maximize throughput.

Waste regulations dictate requirements for handling household trash, industrial waste, medical waste, and more. Collecting, transferring and sorting those materials is challenging. Recyclables must be recovered, and on a typical day, the facility at Rochelle processes about 60 tons of recoverable material from an average of 100 vehicles passing through the site.

Unique Demands

Because weight is the basis of all business transactions at the sorting and recovery center, vehicle weighing is essential to the operation of the site. Capturing traceability and radioactivity information is also a key obligation. According to the site operations manager, “We wanted a system that could print a single ticket with not just weight data (gross, net, and tare) but also information about radioactivity.”

Creative Solutions

To meet those needs in a way that maximizes throughput and efficiency, METTLER TOLEDO provided two automated (equipped unattended) IN-D9UO weighing terminals, interfacing with two 18-meter weighbridges with POWERCELL®MTX® load cells. The unattended terminals eliminate the need to have a scale-house attendant around the clock, boosting the company's bottom line. Drivers use access badges to identify themselves at the terminal, or use the integrated intercom if necessary. POWERCELL MTX load cells are ideal for hazardous-area applications, with approvals for Class 1, 2 & 3, Divisions 1 & 2, and ATEX Zones 1, 21, 2, 22.

Lasting Results

Customizable programming allowed the system to be tailored to their needs, printing required information on demand. Data flows directly from the scale terminals to other systems for complete analysis. This streamlined system is integral to allow the Rochelle facility to manage their operations and continue to provide a vital service to the community.

► www.mt.com/vehicle



See How an Unattended Solution Could Help Your Business

With a variety of unattended solutions available, we have an option that will work for your business. What do they all have in common? Improved operational excellence at your facility. Calculate your potential return on investment by visiting the link below.

► www.mt.com/veh-unattended-roi

Advanced Operational Insight Using Predictive Maintenance

Recent advances in predictive diagnostics allow business owners to be more in tune with their equipment than ever before. Service technicians are able to check on scale performance from anywhere at any time, helping to prevent costly downtime and repairs.

Importance of Reliability

During peak harvest season, grain facilities can see 400 or more trucks per day. Throughout this time, it is more critical than ever that truck scales operate reliably and accurately. For one grain facility, a downtime nightmare was successfully avoided thanks to the predictive diagnostics associated with their cutting-edge POWERCELL® PDX® load-cell system.

Proactive Error Alerts

The scale house attendant was responsible

for managing two scales, inbound and outbound. Due to the busy flow of traffic during harvest season, a small accuracy error in the outbound scale had gone unnoticed. Luckily, both truck scales at this facility were equipped with POWERCELL® PDX® load cells with advanced predictive diagnostics. So when load cell 1 began putting out an error signal, it was then communicated through the IND780 terminal and an alert was sent straight to the scale attendant's cell phone (a standard feature for this load cell system).



Features such as email alerts warn you at the first sign of an issue.

Avoid Scale Downtime

With a line of truck traffic still in the queue to be weighed, the facility could not afford a full shut-down. Armed with the error alert regarding cell 1, the scale house attendant and facility operator went to check out the problem. Both recalled that this end of the scale was particularly vulnerable to debris build up. Especially with increased traffic, they were suspicious that there may be some obstruction under this part of the scale. Sure enough, upon looking under the scale, that is exactly what they found. Between mud, spilled grain and rainy days, the load cell had been compacted. With the help of a power washer the load cell was cleared of debris. The scale was operating properly again, no downtime required. The farm was relieved to have such a quick fix at their disposal.

Stay Connected to Your Scale

The email alert saved the operation from costly downtime. Needless to say, if they had been operating on a traditional analog load cell system, it could have been



much worse. They may have missed the issue until much later – and, once discovered, it could have required a full scale shut down to manually diagnose and pinpoint the error. The cost of inaccurate transactions and lost business during downtime – never mind an expensive service call – would have been devastating to the facility.

With the powerful combination of POWERCELL® PDX® load cells, an IND780 terminal and a website, this facility may never have to worry about scale accuracy or downtime surprises again.

► www.mt.com/upgradetopdx



Discover the Benefits of Digital



The POWERCELL® PDX® / MTX, GGD family of digital load cells can help improve your business through:

- Improved reliability
- Improved accuracy
- Improved connectivity
- No junction box (POWERCELL PDX)
- Proven longevity

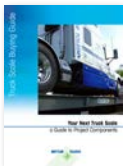
Learn more at:

► www.mt.com/powercell

Continuing Education

Library of Scale Knowledge

The following documents are a source of further education for vehicle weighing and beyond. Our broad portfolio of products offers solutions for every industry and application. Discover what's possible, and see how we can work with you on upcoming weighing initiatives.

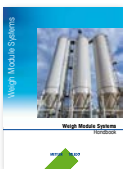


1

Truck Scale Buying Guide

Follow the easy-to-understand, step-by-step process for selecting and implementing the right truck scale model for your application.

► www.mt.com/truckscaleguide



2

Weigh Module Systems Handbook

This 150-page document is our most comprehensive guideline for customized scale design.

► www.mt.com/ind-system-handbook



3

Load Cell Upgrade Guide

A new truck scale can be a costly investment. One solution may be an upgraded load cell system.

► www.mt.com/veh-upgradeguide



4

White Paper: Safety Ratings for Weigh Modules

This white paper details the safety ratings relevant for customized scales and their weigh modules.

► www.mt.com/ind-wp-safety



5

Fraud Prevention Guide

Cheating the truck scale is becoming more common around the world. Learn how to protect your business from fraud at the scale.

► www.mt.com/veh-fraud-prevention-ve

METTLER TOLEDO Group

Industrial Division

Local contact: www.mt.com/contacts

Subject to technical changes

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