Truck Scale Owners' Best Practices

SO, YOU OWN A TRUCK SCALE for commercial purposes. Since your purchase, have you become an expert in the scale's operation and maintenance? Unlikely since your day-to-day operations keep you focused on generating revenue, not worrying about your scale's maintenance, repair and operation. So, to help you focus on your business, here is your guide to proven best practices you can quickly implement and keep your scale operational as long as possible with minimal expense.

Maintenance practices don't immediately show profit or savings but good practices prevent short and long-term expenses. Here is the good news; follow these best practices and prevent unnecessary failures, repairs and errors that dip into and rob you of profits you have worked so hard to maximize! Keep reading to see how an easily implemented PM program is profitable.

PROFIT

Your profit is at stake. To the untrained eye, debris build-up under a scale isn't cause for alarm – if it is even noticed. However, allowing debris to interfere with the scale's operation causes errors in daily weighing results. Take a look at the chart. A simple error of one division (20 lbs.) leads to $720,000 in annual product loss! This is a real example and is based on a product with a value of $2.00 per pound and a light duty cycle of 60 weighments per day. Imagine your business and the value of your product for a moment. Is your product valued at $2.00 per pound or is it much, much higher? We cannot think of a better reason to implement the following best practices.

			60 Weighments Per Day Assuming 300 Working Days Per Year Estimated Value Per Pound			
			$0.50	$0.75	$1	$2
20 lb. Error	Loss Per Day	1,200 lbs.	$600	$900	$1,200	$2,400
	Loss Per Year	360,000 lbs.	$180,000	$270,000	$360,000	***$720,000***

ACCURACY – VERIFY IT BY IMPLEMENTING A PREVENTIVE MAINTENANCE AGREEMENT

The simplest step you can take is to implement a preventive maintenance agreement with your service provider. To be confident in your scale's accuracy, you should consider the value of your product and how frequently the scale is used.

High value product and heavy traffic can easily justify more frequent verification, inspection and service. Fairbanks recommends a minimum of twice per year but, if your product value and scale use are high, you might consider more frequent inspections. In some applications, it is not uncommon to have monthly preventive maintenance cycles. Consult with your scale service company to schedule regular preventive maintenance routines to prevent issues.

When you placed your scale in service, the State Weights & Measures Department certified that your scale meets the regulatory requirements necessary to transact business. Do not let the term "certified" give you a false sense of security. While certified today, the scale's accuracy can be variable. Many manufacturers provide equipment that is stable and capable of holding to accurate tolerances. Your scale equipment is likely not the root cause of errors. More likely, external variables and lack of maintenance will impact your scale's accuracy. Consider the value of a routine PM program to keep your equipment accurate and reliable. Your service company has the right tools, time and expertise to keep your equipment within tolerances.

WHAT TO EXPECT FROM A PREVENTIVE MAINTENANCE AGREEMENT

A qualified and experienced servicing company provides you with regular inspection and verification services keeping your equipment in tip-top shape and they are your best resource for technical and regulatory guidance. You should expect a reputable company to bring the right tools and equipment to the inspection, be licensed by the state and have strong factory training backing them. When certifying a scale, how much test weight is necessary? Can an alteration be made to my scale without affecting the legal-for-trade status? Your scale service provider is up-to-date on these issues, can provide you with answers, and has access to the tools and equipment needed. Your scale servicing provider is your partner and can help you avoid unnecessary expenses.

THINGS YOU CAN DO

If you choose to go it alone without a preventive maintenance schedule in place and managed by a qualified service company, you need to be diligent about the following practices.

CLEAN & CLEAR

Keep the scale and foundation clean. If you operate in an environment that generates a lot of debris and mud, be sure to regularly remove the build-up. A pressure sprayer is a fast and easy way to clear debris and keep the scale and foundation free of build-up. Be sure that your junction boxes, electronics and load cells are properly rated to withstand pressure washing; otherwise you may cause damage.

Debris beneath scale

INSPECTION

Inspect for anomalies. A properly operating scale is dependent on every component working together. Inspect the weighbridge for damage or signs of wear and corrosion.

- Examine the junction boxes inside and out. Do they show signs of damage, corrosion or moisture entry? If so, they should be repaired or replaced.
- Module connection hardware should be in-tact and not damaged. Excessive corrosion requires hardware replacement.
- Check the load cells for damage, corrosion and signs of moisture entry into the enclosure and the cable entry gland. Liquid is a good conductor and if allowed to enter the sensing element area, your electronics will easily short.
- Some manufacturers feature quick disconnect style load cell cables. Be sure to inspect these connections frequently as they are responsible for a significant number of avoidable failures.
- This is also a good time to inspect the wiring for damage. Exposed conductors cause communication errors when wet and are usually the culprit of erratic performance.
- Your scale's paint system isn't just for good looks. Paint systems are a critical barrier to prevent scale corrosion. Worn paint systems will require reapplication if you expect maximum life from the weighbridge steel.
- If your scale has cover plates, inspect the connection hardware and make sure they are there, functional, and are not packed with mud and debris. Keep all the connection hardware free from debris and corrosion to save time when maintenance is required. Neglecting the cover plates will cost you in replacement and maintenance labor.

Quick disconnect

Wiring

- Grease the load cell cups at recommended intervals. Some manufacturers incorporate zerk type fittings allowing grease application without the need to physically separate the load cell components.
- Inspect concrete for signs of failure. Address these issues as soon as possible with a repair. Left unchecked, they will only get worse and will cause larger–and more costly–problems.

MAKE ADJUSTMENTS

Your weighbridge will expand and contract slightly at different times of the year; this is natural. This thermal expansion requires attention and readjustment of your checking. The checking system on your scale keeps the weighbridge in place as it naturally rocks and moves from traffic. Too small a gap in the checking can cause binding and weighing errors. Too much gap in the checking allows excessive movement, up to and including a scale tipping. Excessive movement adds unnecessary wear to other components, so be sure the checking is properly secure.

CONSULT THE EXPERTS

As you regularly inspect your scale, consult with your servicing partner if you have questions about the appearance of your weighbridge. If something just doesn't look right, ask your servicing partner about it. A quick conversation will save you unnecessary expenses later.

KEEP YOUR SCALE GROUNDED

Proper grounding

Today's truck scales use sophisticated electronics to communicate weighment data to the instrument. A securely grounded scale is a basic defense from lightning and power surges. Be sure that the scale is connected to the manufacturer's specified grounding system and that there are no interruptions in this system. Transient voltage seeks the easiest path to ground. If your scale isn't grounded through a ground rod connection, it surely is grounded through other components. Disrupting the ground connection shunts power surges to other places – like your load cells or electronics. Damaged electronics will cost you thousands in repairs.

MONITOR YOUR SCALE'S USE

You probably don't have the time to monitor how fast traffic enters and exits the scale. However, keep in mind that while the scale is designed to slightly move with traffic, abusive and aggressive entrance and exiting of traffic accelerates wear at a

higher magnitude than is necessary. Again, taxing the scale means more wear and more dollars spent in repairs.

Many scale manufacturers offer accessories to promote traffic discipline while entering and exiting your scale. A small investment in the following accessories can save you thousands in unnecessary repairs.

- Guide post kits are installed at the approach and exit of the scale. These prevent vehicles from entering the scale at excessive speeds and keep traffic flowing in the proper direction. Guide posts at the exit prevent vehicles from introducing side loads on the scale as they turn off of the approach.
- Traffic signals direct traffic at the appropriate times and spacing. Just like a typical city traffic light, integrating traffic signals to manage traffic speed prevents damage.

ACCESSORIES

There are a host of other accessories that have evolved from real-world experience that prevent issues altogether. Consider the accessories available for your truck scale and how they will save your maintenance budget.

RISER PLATES


Riser plates

Be very wary of any benefit to a low-profile scale, there really isn't any. Reducing the clearance under the scale gets you two things: One, it takes less debris accumulation to impact the accuracy of a low-profile scale. Secondly, it makes cleaning your scale much more difficult as the underside is impossible to reach. Riser plates get your scale elevated. Elevating the weighbridge reduces the risk of debris accumulation and provides clearance for cleaning and inspection.

LOAD CELL BOOTS

Your load cells operate in the worst environment possible. Exposed to debris, weather, moisture and even product that has migrated below the deck, your load cells must survive a brutal environment. Load cell boots act like a protective glove and prevent debris from interfering with proper load cell operation.

STEEL & EPDM RUBBER T-BELTING

At each end of your scale, there is a small gap between the scale and foundation. This gap is a great place for dirt, debris and product to fall under the scale and accumulate. Installing T-belting along this gap between the scale and foundation wall is a good step to preventing this accumulation.

CONCLUSION

How you implement these best practices is up to you. You can partner with a qualified service provider to manage these tasks, or you can go it alone. One thing is certain – neglecting your scale costs you profit.

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