

New technology protects Montana recycling company's investment in weighing equipment

Digital system achieves lightning and surge protection while increasing speed and accuracy

Steel Etc is a family-owned recycling and salvage company based in Great Falls, Montana. Its scale equipment is the lifeblood of the business, so when a powerful lightning strike destroyed its rail scale and led to weeks of downtime, the company was dealt a severe blow. Determined never again to be faced with that situation, they turned to a new digital technology that helped them achieve an extremely high level of lightning and surge protection. In addition to reducing downtime, the new digital technology also increases the company's scale resolution, accuracy, and the speed of weighing communications.

Figure 1 – Steel Etc Headquarters



Expanding company invests in weighing equipment

Steel Etc (Figure 1) opened its doors in 2000, specializing in buying and selling scrap iron, copper, brass, batteries, aluminum, and paper. Bursting at the seams at its old downtown Great Falls location, the company expanded its business, building a new facility in 2009.

At that time, they invested in new scale equipment, including two 80-foot steel deck scales (see Figure 2). One is an inbound truck scale, on which trucks are weighed coming in, and the other is used to weigh the trucks as they leave. In addition, they purchased a rail scale, located next to their yard. The truck and rail scales are at the very heart of the business, measuring what they

Figure 2 – New truck scale



buy and sell, so it is extremely important that the equipment runs well, is reliable and long lasting – and most of all, can withstand Montana’s tough weather conditions. Extremely hot in summer and very cold and snowy in winter, the environment requires extremely durable scales.

According to Joe Filipowicz, Recycling Manager of Steel Etc, the new Fairbanks' truck scale instruments have been working quite well since their installation. All Fairbanks scales are

Figure 3 – Truck scale bed



equipped with Intalogix[®], a technology that digitizes analog load cell signals to achieve a high level of lightning/surge protection and enhance the speed of weighing communications. **Figure 3** shows a truck scale, equipped with Intalogix[®] working efficiently to meet the needs of Steel Etc.

“The scales were quick, stored car numbers and saved the weight information,” said Filipowicz. “What we found really helpful is a feature that stores all transactions, allowing us to search for and print detailed information on the number of items shipped per month. We can download the information to a spreadsheet on our computer so we can compare our weights with the steel mills’ weights, to make sure our weights jive.”

Unlike the Fairbanks truck scales, the rail scale caused headaches in Steel Etc’s operations from the start: it didn’t calculate properly and processed scale tickets incorrectly. Even worse, disaster struck quite literally, in the form of a lightning strike to the rail scale. “A horrible lightning storm came through, striking the rail scale, and totally frying its internal hardware,” said Filipowicz. “It was dead in the water.”

The scale was out of commission for several weeks, since the power surge after the lightning strike blew out several of the rail scale load cells. To a salvage company, the scale is like a cash register and it is critical that their scales are always up and running, so the downtime from this outage caused a great deal of problems. As a result, the company was determined never to risk that type of downtime again. They decided to add the digital Intalogix system to the rail scale to

take advantage of its lightning and surge protection and protection, as well as its other benefits like increased speed and accuracy of weighs.

Fairbanks inspected the rail scale and replaced several of the load cells. This was a big expense for Steel Etc, since rail load cells are larger and have more capacity than truck scales' load cells, and one they hope to avoid in the future. They then converted the rail scale to Fairbanks' Intalogix system. This system, which can be used on any scale, dramatically reduces the risks of costly damage like that from the storm. Since converting over to the Intalogix system, Steel Etc has had no further problems with their rail scale: the printer, load cells, and other components are working perfectly. A proactive maintenance program has been put in place to ensure that each section remains up to the crucial task of weighing Steel Etc's purchases and sales. **Figure 4** shows the Steel Etc building.

Figure 4 – Steel Etc building



Digital technology protects from lightning and ensures accuracy

The Intalogix system, which helped to erase Steel Etc's rail scale headaches, is comprised of several key components. A scale instrument (indicator) is used for operator interface, scale configuration, and technician troubleshooting. In addition, a surge volt protector protects the system from power surges or inconsistencies in power supplied by the wall outlet. Finally, a scale interface card offers both surge protection and communications. Also included in the system is a homerun cable providing both power and data communications between the scale and the scale instrument, as well as a pit power supply for power transmission and data transference. Smart sectional controllers convert weaker analog signals from the load cells to a stronger digital signal. Other components include a weigh bridge, non-proprietary analog load cells and one grounding rod for each major circuit in the system.

With the new scales, Steel Etc is achieving extremely accurate weighing even in winter conditions when snow or water can affect the loads. "We ship on average 30-35 carloads of iron

from our facility per month, at a net weight of about 200,000 pounds plus. We can roll the car on, enter car initials, print out scale tickets and we are good to go,” says Filipowicz.