



STERLING STEEL COMPANY, LLC

CASE STUDY

CUSTOMER DETAILS

Purchased in 2002 by Leggett & Platt from a portion of the Northwestern Steel & Wire Facility, Sterling Steel produces an average of 500,000 tons of wire rod coils annually.

INDUSTRY

Metals

APTEAN SOLUTION

TabWare Enterprise Asset Management

Optional Modules:

- TabWare Technician
- TabWare Inspections
- TabWare Analytics

CHALLENGES

- Asset information spread across two systems with a limited interface

BENEFITS

- Annual maintenance fee savings of approximately \$7,000/year
- Less manpower required to maintain two systems
- Saved almost 400 boxes of paper annually for an approximate cost saving of \$20,000/year

INTRODUCTION

Sterling Steel has deep roots in northern Illinois. The steel mill and wire factory began producing in 1879 as Northwestern Barbed Wire Co, and in 1936, changed its name to Northwestern Steel & Wire. In 2002, Leggett & Platt purchased a portion of the mill and began operation as Sterling Steel Company, LLC. The Rod Mill, built in 1952 and having been renovated over the years to improve operational efficiency, boasts finishing speeds of over 19,500 feet per minute and enables the facility to produce an average of 500,000 tons of steel rods annually. The coiled rod is drawn into wire by various Leggett & Platt manufacturing plants or sold to outside customers. The end products may be used in mattresses, furniture, bale ties, or certain automobile applications. Sterling Steel recycles 550,000 tons of scrap steel for use in the melt shop every year. With a capacity of 400 tons, this melt shop features the largest electric furnace in North America.

CHALLENGES

Sterling Steel operated two asset management systems as part of a reliability initiative to develop a proactive inspection program. TabWare was the primary system, but lacked a suitable inspection module. The secondary system provided the necessary functionality, with an interface that allowed a work order to be created in TabWare based on the information from inspection findings from the second system. Extracting data for reports was a major issue. Reports from each system had to be extracted via Microsoft Access and combined to create reports. This process required onsite personnel to have programming skills and to dedicate time to keeping reports functioning properly amid normal IT system updates.

In addition, each application operated on its own server. In-house support for both systems, as well as recurring annual support fees, made the dual system solution cost prohibitive. The ongoing costs of supporting two systems were approaching an unsustainable level, and upper management was questioning the value of maintaining two systems. Time resources that could otherwise be used in advancing the asset maintenance effort were being redirected toward care and feeding of the systems. At the same time, Sterling Steel's parent company decided that for security reasons all IT departments across the organization should fall under one umbrella. In order to comply with the guidelines of the parent company's IT department, Sterling Steel learned that the server for the second system was no longer supported, which made that server vulnerable to cyberattacks.

SOLUTION

Sterling Steel had already begun to consider upgrading to the most current version of TabWare and learned of additional modules that would be available with that path. Two modules of particular interest to the reliability team were Inspection and Technician.



It was vital for the craftsmen at Sterling Steel to verify and understand the health of the assets to make sure the equipment can do the work required. Inspection activities allow the maintenance team to understand when assets are beginning to show signs of decreased functionality. Originally, the second asset management system provided the routes the craftsmen followed in order to understand the condition of the equipment. The TabWare Inspection module replaced the functionality of that system, with the exception of the daily indicator panel. TabWare Analytics had the capability to provide the same information. Analytics pulls just the failed inspection points, saving the supervisors from having to wade through the entire inspection report in order to determine where to focus efforts. The Analytics dashboard presents only the failed inspection points

on a real time basis to the supervisors. The supervisors can then plan maintenance proactively, scheduling work to coincide with planned downtime.

TabWare Technician is a mobile solution that puts inspections directly into the hands of the technicians. Previously, in order for inspection routes to be performed, the supervisor would print work orders and distribute to the technicians, who would then execute the work, make notes on the paperwork, and return to the supervisor. The supervisor would then transcribe some information into TabWare, and the paperwork would then go to a clerk, who would do worker time reporting, add completion remarks, complete the work order, and retain copies of the work orders for 6 weeks. With TabWare Technician, the appropriate work orders are waiting in a queue for the technician. They can add comments, enter follow-up work orders, and even take photos for reference, reducing errors in work orders and saving time. The supervisor's workload is reduced, allowing them to spend more time on the floor instead of in front of a computer.

Following demonstrations, Sterling Steel determined that upgrading to the current version of TabWare and including the new modules would enable their migration to a single solution, streamlining their processes and reducing capital expenditures.

RESULTS

An informal analysis concluded that Sterling Steel reduced their annual maintenance expense by approximately \$7,000/year, and consolidating to a single server also reduced costs of IT support. The redundant system was retired eight months after the TabWare upgrade.

The Inspection and Analytics modules allow technicians to work more effectively, and TabWare Technician helps them work more efficiently. Craftsmen are self-directed using these tools, empowering them and giving them more ownership over their work. They also have more direct input about the health of the assets. Personalized reporting is available for each technician so they can see their individual contributions. Technicians download inspection routes to the tablets, perform the inspections and upload the results, as well as complete the work orders and charge time as required, which is new to Sterling Steel. Managers check results of the inspections using the Analytics module and create follow-up work orders as required. Immediate availability of data as the inspection is completed by technician is helpful to work planners, as any needed repairs can be planned and scheduled promptly.

Preventive Maintenance work order completion has improved since the new modules were installed. The opportunity to minimize paper usage in transitioning to a paperless system was a benefit in support of a corporate initiative toward eco sustainability. With paperless inspection type work orders, almost 400 boxes of paper per year have been eliminated, both an ecological and financial benefit. Sterling Steel is looking forward to the potential for a completely paperless system as a result of this upgrade.

Using TabWare Technician for regular equipment inspections and calibrations enforces procedure adherence, critical data collection, and consistent incident documentation. The module helps Sterling Steel spot issues before causing downtime, mitigate risk, and ensure that production delivers quality product in a safe, consistent, and reliable manner. There is a learning curve as the technicians adjust to having a tablet on their routes, rather than paperwork.



Sterling Steel seeks to take advantage of the tablets as these opportunities cascade throughout the facility and to continue improvement in their operational efficiency. They are developing a conversion process for the remainder of paper inspection routes to work orders that can be performed on tablets.

Interested in learning more about Aptean's TabWare? Please contact us at 1.855.411.2793 or email us at info@aptean.com.



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