IMPLEMENTATION ENGINEERS®

CASE STUDY

Working out logistics between railroad, steel company

Timely delivery eases shortage, downtime at rolling mill

An Implementation Engineers Engagement

IMPLEMENTATION ENGINEERS®

Throughput crises create production, financial losses

Multiple delays while transporting molten metal in rail cars to a metal-processing facility was causing our client to lose throughput. The loss of nearly 8% of processing time per month resulted in an annualized production loss of $4.7 million.

Five Implementation Engineers team members observed every aspect of the transport of the liquid metal, including traveling alongside the train to time railroad signals, meeting with the railroad representatives, and standing in the cast house to watch the loading and unloading of the molten product. These activities were critical to understanding the key drivers that impacted the transportation process during the two-week Program Design Phase (PDP), the first phase of enCompass®, IE's proven, data-driven implementation methodology. It is based on rigorous industrial research using valid and reliable techniques. It's rational and granular in its ability to identify improvement opportunities.

After presenting the initial findings, the IE team was tasked with reducing production downtime, optimizing rail-car fill weights, and reducing inbound and outbound cycle times without increasing the existing fleet size. As a result of the PDP, the client and Implementation Engineers agreed on the following performance objectives for the Implementation Execution & Sustainability Phase or Phase 2:

- Reduce operations downtime from 7.9% to 2%
- Reduce logistics cycle time by 25%
- Improve average rail car fill by 2%

Scheduling, GPS, railroad execs break down delivery barriers

The team noticed a buildup of metal inside the rail cars. Capability studies revealed this buildup caused significant loss in each rail car's capacity. While a decontamination process existed, there was little visibility of schedule adherence or whether current procedures were effective in eliminating the buildup.

Since overfilling and spillage causes serious environmental issues, a common practice was to err on the low side of the fill volume. Key improvements included an operator-led redesign of the washout process to meet required guidelines and new controls for optimal filling. IE facilitated full training and documentation of the new standardized processes, as well as the implementation of a corresponding visible management system to reinforce the behavior change. These actions improved fill capacity by 2.5% per rail car, however the product still required timely delivery to the processing plant.

Reliable and timely delivery of molten metal via rail wasn't a new problem. Through data analysis and a series of Kaizen events with railroad representatives, it was discovered that shipping delays were due to variation in the way the rail cars were scheduled. By standardizing window times based on the railroad's needs and requiring a minimum quantity of rail cars per shipment, the plant downtime due to delivery delays was significantly reduced from 8% to less than 1%. The steady flow of materials and eliminating waiting reduced the overall cycle time by 35%.

In addition, the GPS tracking system, which tracked the product amount and delivery times for the plant, had become unreliable. An Implementation Engineers' project optimized the system's capabilities, which vastly improved the accuracy of the information.

Project completed in 6 months, still in action after 4 years

The IE team completed the project from the PDP (Phase 1) through Implementation Execution & Sustainability Phase (Phase 2) within 6 months.

Four years after the project, the tools installed by the IE team are still in use. The client remarked that Implementation Engineers fixed something that the client team had not been able to fix for many years.

The collaboration between the railroad leadership, the steel company, and the IE team broke the silence, resolved the needs of all parties, and contributed to the success and sustainability of this project.

NEXT STEPS ›

- Schedule a meeting with our team to learn about our enCompass® methodology and how IE can improve your operations.
- Interested in learning more about the topic covered in this case study? Call us at 1-312-967-4162 and reference the paper you're interested in. We would love to discuss your initiatives.
- Visit www.implementation.com to find out more about our services.

IMPLEMENTATION ENGINEERS®

At our core, Implementation Engineers is a data-driven, global firm with a razor-sharp focus on enhancing mining and manufacturing operations.

We have volumes of success stories, and they can all be attributed to our revolutionary enCompass® methodology. This industry-first approach gives us not only the knowledge to inform you of what needs to be done, but the power to actually implement those solutions for lasting impact.

10 S. Riverside Plaza, Suite 875, Chicago, IL 60606

1-312-967-4162