

# Optimizing Dock Operations and Improving Completion Times

From its origin as a small local carrier in 1923, ABF Freight System, Inc. has been transformed into one of North America's largest and most experienced motor carriers, offering direct service to all 50 states, nine Canadian provinces, Guam and Puerto Rico.

## The Challenge

With a forward thinking approach to Quality Improvement, ABF's mission is to deliver value to its customers by developing and implementing customized solutions to their global logistical challenges.

ABF's industrial engineers were tasked with finding the most efficient and economical system to optimize dock operations and manage completion times.

For this project the team needed to coordinate available manpower, forklifts and open bays to handle incoming and outgoing shipments in the most efficient manner. Additionally, union regulations brought further elements of consideration requiring solid justification for personnel schedule changes and shift patterns.



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ammunition for change.**

**Jamie Anawaty**  
Industrial Engineer  
ABF



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## Key Facts

- Simulation results provided the 'ammunition for change'
  - Used SIMUL8's Excel Connections feature to import data
  - Experimented with proposed scenarios in a risk free environment to find best solution
  - Inputs included; available manpower, forklifts and open bays to handle incoming and outgoing shipments in the most efficient manner
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## The Solution

ABF prides itself on its Quality Improvement Processes and the Industrial Engineering team thoroughly researched alternatives to help them determine the optimal software and processes for the project. ABF spoke with several simulation companies to compare software features and price.

SIMUL8's extensive and powerful feature list, accessible price point and its ability to quickly handle the vast amounts of data required were cited as the reasons the team chose SIMUL8 Professional.

A simulation model of the dock operations process was then created using SIMUL8's drag and drop interface and Visual Logic to mimic the current system. ABF's forward thinking approach to quality improvement means they hold data on every area of the business.

Using SIMUL8's 'Excel Connections' feature, ABF then imported the data that gave a minute-by-minute analysis of the company's dock operations. This allowed the team to validate the simulation model against the real life process.

ABF engineer, Jamie Anawaty, was delighted at the accurate data output provided by SIMUL8's simulation models. "I've been extremely happy with the results we've had using SIMUL8. It was easy to use, and the program was able to synthesize the massive amounts of data we plugged into the models," he commented.

Using the simulation the team then began to experiment with their ideas for improvement in a risk-free environment and with no detrimental impact on the current system. They tested various scenarios to improve the completion times including; changing resource shift patterns, changing the number of open bays, and increasing the number of forklifts.

## The Result

Having the ability to test so many scenarios to find the optimum solution resulted in a number of possible solutions presented to management. The visual nature of the simulation models combined with the robustness and accuracy of the results helped to bring the solutions to life and gained instant buy-in from decision-makers.

States Anawaty, "The results forecasted by SIMUL8 and the actual results of operational changes match. We now have proof, which has allowed us to build up trust and credibility with upper management. SIMUL8 has given us ammunition for change, and everyone is on board with our recommendations."

The true value of SIMUL8, according to ABF is that the industrial engineers now have the ability to accurately forecast and illustrate how the changes they recommend will improve ABF's operations.

ABF also highlighted the speed of SIMUL8 to be far superior to other simulation software packages when the time to build simulations and the time it would have taken to garner the same results were considered. "I was able to immediately start building simulations and seeing results," Anawaty added.

ABF is planning to expand their simulation applications to include the transportation travel times to further refine the materials handling models.