

TMEIC improves productivity at the Georgia Ports Authority



Rackley Dawson and Jeff Cranford, Regional Sales Manager & Application Engineer respectively, TMEIC Corporation

Georgia waterways are a southern hub that provides access to raw materials and finished products from around the globe. Since 1945, the Georgia Ports Authority (GPA) has managed deepwater ports in Savannah and Brunswick, as well as inland barge operations in Bainbridge and Columbus.

Over the years, the GPA has seen tremendous growth and now boasts more than 9,700 feet of contiguous berth space and one of the busiest single terminal container facilities in the United States. Due to this continued growth and dedication to provide customers with the most productive port facilities, the GPA identified the need for more efficient container movement.

To help develop a solution to this need, they contracted TMEIC, a leader in safe and efficient port automation. TMEIC helped the GPA install their Maxspeed electrical drive systems in an effort to upgrade six ship-to-shore cranes. The cranes are located at Garden City Terminal in the Port of Savannah, which is the fourth-busiest container port in the United States.

"The Georgia Ports Authority continually strives to provide our customers with the most efficient container handling equipment available. We are excited that this philosophy has been achieved on two of our cranes with the assistance of TMEIC," GPA Director of Engineering and Facilities Maintenance, Chris Novack, said. He also noted that TMEIC was awarded the contract to supply these upgrades as a result of a competitive selection process.

The project replaced the original DC

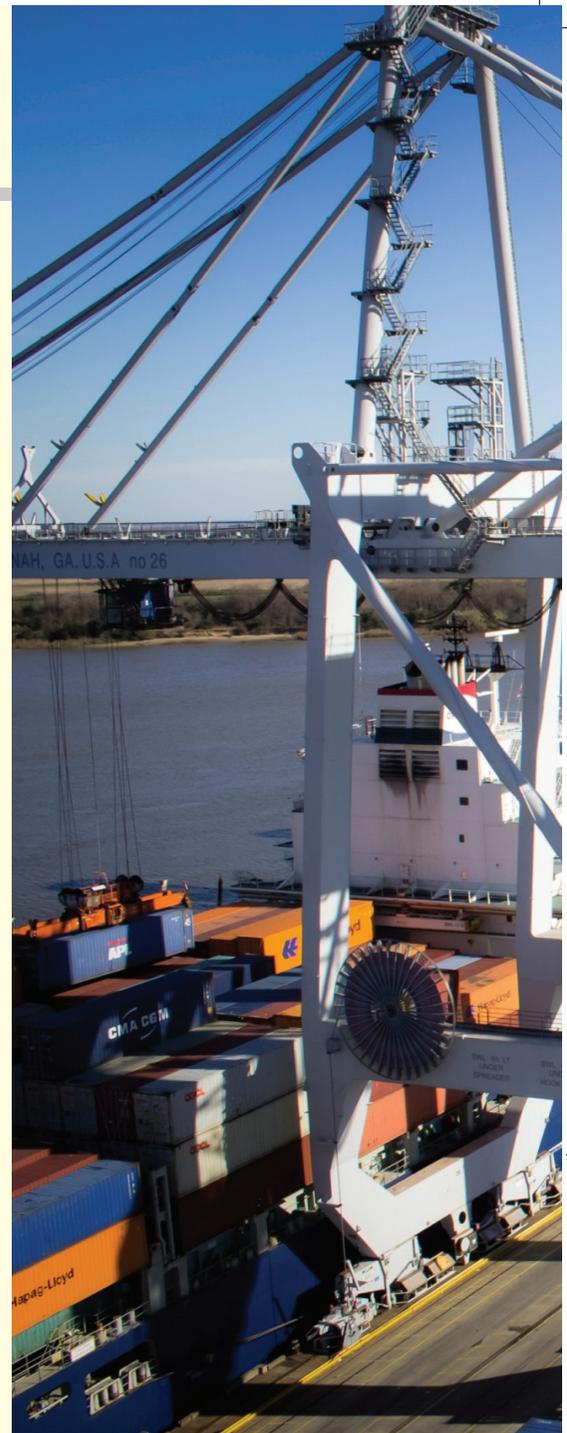
drives with TMEIC's TMdrive 10e2 drives and controls. TMEIC also supplied new AC hoist motors with higher HP that enabled GPA to increase container moves by two containers per hour.

"To design the right solution for GPA, TMEIC worked directly with Paul Harkness and his team to understand what they were trying to achieve. With TMEIC's many years of experience designing crane drives / control systems, we were able to choose the right sub-components to make this project successful. For example, Woelfer Motors supplied AC Motors that were a drop in replacement for the existing DC units. Pintsch Bubenzer Brakes and Hubner's U-One encoders were integrated along with the GE Rx3i PLC to give GPA the right solution to meet their customer's demands," TMEIC Sales Manager, Rackley Dawson said.

How Maxspeed works

The Maxspeed crane control system uses adjustable speed drives to control the speed and direction of the crane motors driving the gantry, trolley, boom, cable reels, and hoist. The operator uses a master switch (joystick), which inputs signals to the controller through the I/O racks to control speed and direction. A high-speed local area network (LAN) transmits the control signals to the individual drives, which generate the variable frequency three-phase AC power to the induction motors.

The link between the operator switch and the controller is optimised for speed so the operator has fast and responsive control of the motor.



Earlier crane systems used DC drives and motors, but most regions of the world are now standardised on AC technology. Several factors have contributed to this shift to automation, including the continuous increase in vessel size and the need for enhanced productivity.

Benefits Include:

- The same architecture for ship-to-shore and yard cranes
- Crane duty drives and motors with global recognition for their quality and reliability
- Open architecture
- System scalability that allows for smooth integration of advanced options

Since the hoist at Garden City Terminal has been upgraded, GPA has seen the increase in productivity they desired.



"The hoist is capable now of better performance than it ever was before," GPA General Manager of Crane Maintenance and Repair, Paul Harkness, said.

Additionally, he noted that they expected to realise a productivity increase in container moves by two containers per hour, but they have seen as high as six since the upgrade. The level of productivity they observe on any given day can be attributed to many factors, including how the ship is stowed, where the crane works on the ship and operator skill level.

"The entire process was very smooth, [TMEIC] did a great job coming to site and doing the upfront work. There were no surprises and the startup on the very first [crane] went about how we expected.

We had a couple of small issues right out of the gate, but they got a good, qualified engineer in here and commissioning went well. On the second crane, the commissioning was even better. It was pretty uneventful overall, which is always good," Harkness said.

About the author

Rackley Dawson and Jeff Cranford, Regional Sales Manager & Application Engineer respectively, TMEIC Corporation.

About the organisations

GPA and TMEIC have a previous, long-standing relationship. Since 1996, TMEIC has been involved with every GPA ship-to-shore crane. On their most recent collaboration, GPA crane operators and customers seem very pleased with



the upgrade. Initially, customers stated that they thought GPA might have hit a homerun.

TMEIC strives to be a key player in crane control and the shift to automation, delivering this increase in productivity to the GPA is just the latest achievement towards this goal.