

Major equipment investments for Port of Charleston

South Carolina State Ports Authority, Charleston, SC, USA

In September 2005, the Board of the South Carolina State Ports Authority (SCSPA), which oversees the Port of Charleston's container terminal operations, approved the largest single equipment purchase in the agency's 65-year history, authorising just under US\$64 million in new and upgraded equipment.

Larger ships and growing volume are driving the investments, which will be complete by mid-2007.

While post-panamax ships are common sights on the U.S. West Coast and in Europe and Asia, there are few on regular rotation on the East Coast. However, Charleston regularly handles ships up to 6,700-TEU. An additional factor is the expected dedication of post-panamax ships to trans-Suez services between Asia and the East Coast. Charleston is well prepared for the larger ships, with a 45-foot channel (13.7 m) all the way to the dock plus a five-six foot (1.5 m) tidal lift.

As for growth, cargo volume at the Port of Charleston has nearly doubled in 10 years. Between 1996 and 2006, container volumes went from just over one million TEU to 1.96 million. The SCSPA has focused on improving efficiencies as opposed to only increasing the terminal footprint.

Charleston has enhanced utilisation and productivity through longer gate hours, denser stacking, new gate systems and other initiatives.

While one typically expects congestion with volume growth, the SCSPA has achieved the opposite. In September 2006, the SCSPA's port-wide crane productivity was 41.2 moves per hour per crane and trucker turn times averaged 21 minutes.

Ship operations

More than half of the total investment approved for Charleston is for dockside handling equipment. The SCSPA is acquiring four new super post-panamax cranes from the low bidder, ZPMC of Shanghai, China, at a cost of \$33 million. The SCSPA solicited expressions of interest from 14 companies. Six responded and three bids were received.

Charleston currently has a fleet of 21 ship-to-shore cranes, four of which are aged second generation Canron cranes installed in 1982. The new cranes will replace these older cranes, which were designed to handle ships of up to 2,000 TEU capacity and 11 containers wide on deck. These cranes



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are now obviously outmoded in terms of size and are about 33 per cent slower than the next slowest crane at the port, making them obsolete in terms of speed.

Because the new cranes were manufactured in China where access for inspection would require extensive effort, Charleston contracted with Gottlieb, Barnett & Bridges, LLC of Mobile, Alabama for engineering and quality assurance. However, SCSPA staff remained actively engaged in the construction of the cranes and travelled to China several times during assembly.

In mid-January, the cranes departed aboard the ZHENHUA 19 for the 15,000 mile journey to Charleston. Delivery is expected by late March. In addition to the cranes themselves, an additional \$1.4-million electrical substation is required to support the two cranes slated for North Charleston Terminal.

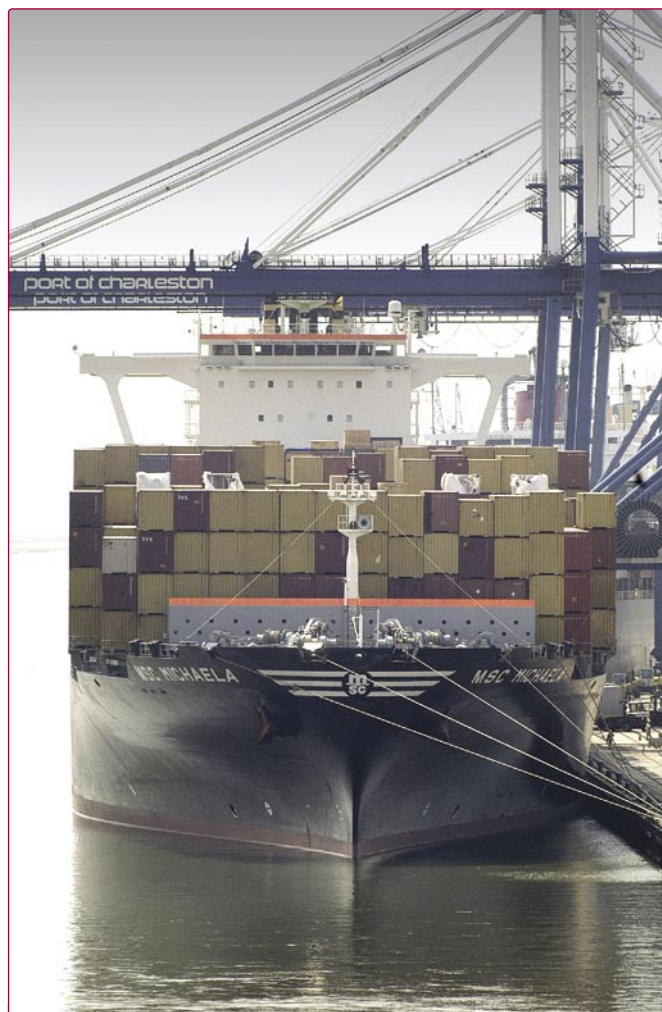
Yard operations

Over the past several years, the SCSPA has transitioned from a largely wheeled container storage operation to a principally grounded operation. To further increase capacity and performance it was necessary to bring on newer, better equipment and upgrading existing equipment.

Yard equipment in the recent purchase includes 16 rubber-tired gantry cranes (RTGs), taking the SCSPA's fleet of RTGs to 43 machines. Also included were two full container handlers, two empty container handles, kits to upgrade 13 existing full container handlers and two lift trucks for on-terminal chassis storage.

Several factors drove the need for the new RTGs. Prior to the purchase, the SCSPA operated a fleet of 30 RTGs used for stacking containers at Charleston's three container terminals. New contract agreements brought a substantial amount of additional acreage under the SCSPA's operational control. This yard reallocation also brought about the need for existing users in the licensed areas to use larger or additional RTG. Beyond yard modifications, the SCSPA is completing development of the Wando Welch Terminal, with the build out of 50 acres of container storage.

Konecranes of Hyvinkaa, Finland was awarded the \$23 million contract for the 16 RTGs. In this case, the SCSPA did not solicit competitive bids because the units were essentially quoted under existing price options still in effect from a 2004 purchase. Consistency of the fleet for maintenance and repair purposes and solid past performance of the Konecranes machines were major considerations.



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All of the 16 new five-high RTGs are being deployed at the Wando Welch Terminal, the SCSPA's largest container terminal. Six existing RTGs that stack four high are being transferred to North Charleston Terminal, where four-high stacking is more suitable. Also, three 30-year-old machines are being retired. The last of the new RTGs was assembled in January.

In addition to the RTG fleet, the SCSPA employs toplifting container handlers. Due to volume increases, the SCSPA has experienced somewhat consistent shortages of container handlers. Bids were solicited for two new full container handlers and two empty container handlers. Gregory Poole of Raleigh, North Carolina, the low bidder, was awarded the \$649,000 contract for two SMW model full container handlers.

For the two empty container handlers, performance and service concerns about the low bidder precluded the SCSPA from awarding the contract to that company. Instead, the SCSPA awarded the contract to Gregory Poole for two SMV models for \$499,600.

The SCSPA also sought to upgrade existing equipment. Prior to this purchase, 13 of the SCSPA's container handlers were limited to stacking containers three-high. This limitation underutilised container stacks during vessel operations, increased the need for storage slots and necessitated additional work consolidating stacks with RTGs after vessel operations. Gregory Poole is the sole source for the modification kits for this model and was awarded the \$1.1 million contract.

The SCSPA stacks and stores intermodal chassis on terminal using chassis rotators. These machines allow for quick access to chassis as needed and storage of unneeded chassis in bundles of four, all while lowering the space demands by 75 per cent.

Based on volume projections for the coming year, the SCSPA purchased two additional machines. The low bidder was not compliant to the specifications of 36,000 lb. lift capacity and solid pneumatic tires. Based on this, the contract was awarded to Gregory Poole for two Kalmar models for \$313,004.

Looking ahead

Beyond new equipment and improvements to existing terminals, the SCSPA is seeking permits for a new three berth, 250-acre container terminal on the former Charleston Navy Base.

ABOUT THE PORTS

The mission of the **South Carolina State Ports Authority** is to contribute to the economic development of South Carolina by fostering and stimulating waterborne commerce and shipment of freight. In pursuit of this mission, the Authority seeks to develop and operate efficient marine terminals and attract high-quality ocean carrier services.

The South Carolina State Ports Authority owns and operates terminals in three port facilities: The Port of Charleston, the Port of Georgetown and the Port of Port Royal. These facilities are owner operated terminals, meaning the SCSPA owns the terminals and operates them with its own staff. SPA staff work in all container cranes, run the container yard equipment, and operate gates on all terminals. The only exceptions are the licensed operators at the port, who license terminal space and operate their own yards and gates. SPA staff do operate the dockside container cranes and the yard equipment for licensed operators as well.

The US Army Corps released the Final Environmental Impact Statement in December 2006 and a permit decision is expected by April 2007. Phase I is scheduled for completion in 2012. The combination of near-term capacity improvements and terminal expansion will take Charleston's total TEU capacity to more than four million TEU.

ENQUIRIES

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