

FCCA and RTM STAR Center Working Together for a Better Caribbean

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As a result of the increase in the number and size of cruise ship operations within the Caribbean, many of the cruise destinations are seeing an increased number of port calls. Port authorities are expected to expand their existing facilities in order to access larger cruise ships into these ports. Cruise ship operators are examining accessing their larger cruise ships into existing ports, and at the same time, searching for new ports of call.

Florida Caribbean Cruise Association (FCCA) and RTM STAR Center have worked together to meet the needs of cruise ship operators and these Caribbean ports by providing simulation research. Located south of the Fort Lauderdale International Airport, RTM STAR Center provides Simulation Training, Assessment & Research for the maritime industry.

STAR Center has demonstrated an unmatched performance record in conducting simulation based maritime research studies for port authorities, shipping companies, engineering companies, and maritime law firms.

These studies involve evaluating proposed port improvements, examining port access, and analyzing ship accidents.

STAR Center's capabilities can be effectively utilized to evaluate proposed channel improvements, pier configurations, and breakwater design. Proposed designs can be pretested in a controlled environment in order to optimize the plan in terms of navigational safety and cost efficiency. Environmental factors such as wind, waves, and current are some of the various elements examined to assist in establishing operational limitation(s) to ensure the navigational safety within a given port. It is not uncommon for a port to save millions of dollars in construction costs by having the foresight to optimize the design through simulation testing. Directly involving the various concerned groups such as the port authority, pilots, shipping companies, and terminal operators is facilitated by the use of simulation.

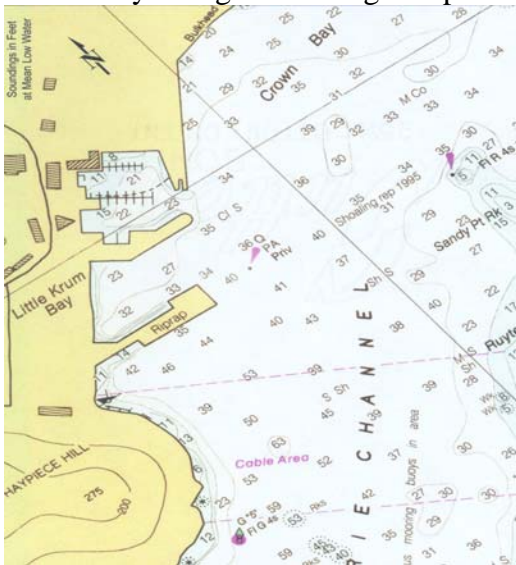


Port access is another concern in which simulation has proven to be an invaluable tool. This type of evaluation can be very beneficial to the ship's operators when considering taking an existing ship to a new berth or even a new port. Simulation can be an effective

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tool when examining the safety of a proposed ship design while considering the navigational challenges at the expected ports of call.

Testing ports, waterways, and vessels in a simulated environment with real-time simulation, prior to doing it in the real world, can prevent accidents, and establish safety parameters. Prescreening these factors can be useful in establishing the practicality of a vessel accessing a given berth during a range of environmental conditions. By testing various environmental conditions a safety factor can be established taking into account all available resources such as thrusters on a vessel, and the availability of tugs within a given port.



Many of these Caribbean ports have seen increases in the number of cruise ships calling year round. As a result, during the height of the cruise season a demand for additional berthing spaces has surfaced in many of these ports. Several ports in the Caribbean have conducted simulation-based studies at RTM STAR Center to examine proposed cruise ship terminals with excellent results. As an example, one of

these studies was conducted with the United States Virgin Islands (USVI) port authority on the island of St. Thomas.



Like many ports throughout the Caribbean, increased traffic and larger ships are requiring USVI port authority to look at extensive planning, expansion, and modernization of their present facilities. St. Thomas, one of the more popular cruise destinations in the Caribbean, had to address the growing demand for more berth space to accommodate the increasing cruise ship calls at the height of the season. USVI port authority wanted to examine the possibility of revamping the Crown Bay pier. A cooperative effort between the various involved groups was initiated. The FCCA, USVI Port Authority, St. Thomas Pilots, WICO (The West Indian Company Ltd.) and the cruise ship operators participated in the study.

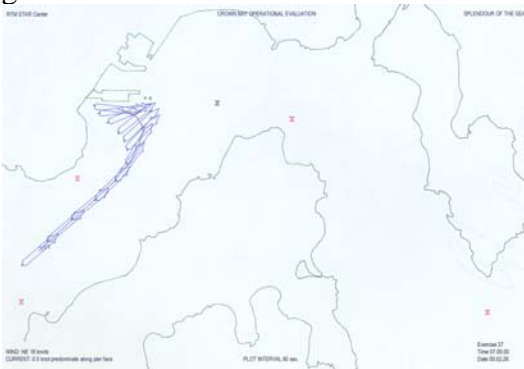
By involving all the concerned groups in the initial discussions, all concerns and ideas were able to be aired and a general focus was achieved. Gee & Jenson, an engineering firm, was commissioned to provide proposed designs for a new cruise terminal at

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Crown Bay pier by improving the existing pier.



With the assistance of the USVI Port Authority and port pilots, information such as prevailing environmental conditions and navigational safety concerns were incorporated. The simulation runs replicated the conditions commonly experienced at the Crown Bay pier. RTM STAR Center staff visited the Crown Bay Pier to gather information to generate a replication of St. Thomas harbor on the simulator. Port pilots and ship captains participated in the various scenarios examined to test the feasibility of the proposed design. Track plots of the various runs were generated and the associated data was analyzed and then a final report generated.



Similar studies have been conducted for Barbados, and Grenada in the West Indies. In each of these studies the proposed piers were outside of the main harbor and would permit access to

cruise ships that might otherwise be restricted by size and or draft at the existing piers. Included in these proposed pier configurations were recommended aids to navigation marking the limits of dredged areas on either side of the pier.

RTM STAR Center has been conducting these types of projects since 1984 at their Toledo, Ohio, facility and since 1993 at their Florida, facility. RTM STAR Center has the capabilities and flexibility needed to generate ports and ship response models to meet the needs of all the various groups throughout the Caribbean.