PORT CANAVERAL CRUISE OVERVIEW
AAPA FACILITIES ENGINEERING CONFERENCE

 JACKSONVILLE, FL: APRIL 24-26

- Large Capital Project Highlights
- Construction Contract Types
- Construction Project Innovation
- Designing of Modern Facilities
- Drone Usage in Construction and Facilities Management
- LNG Fuel
- INFRA Grant Funding
- Engineering Department Management
- Facilities Maintenance Management

2018 MARINE TERMINAL MANAGEMENT TRAINING
Order Book by the Numbers:

- Ocean Vessels on Order: 112
- Average Size: 97,736 Tons
- Average Capacity: 2442 Guests
- Average Cost: $605,000,000
- Order Book Value: $66.5B
- Total Berths: 268,674
- Average Price per Berth: $247,631
### Cruise Industry News

**Cruise Ship Orderbook**

<table>
<thead>
<tr>
<th>Cruise Line</th>
<th>Ship</th>
<th>Cost(1)</th>
<th>Tonnage</th>
<th>Capacity</th>
<th>Yard</th>
<th>Sailing</th>
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<tr>
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Note: For a full accounting of cruise ship orderbook trends dating back to 1988, please see the [Cruise Ship Orderbook Report](#).
Shell, Q-LNG Transport and Harvey Gulf sign long-term LNG transport contract

Shell International Marine’s CEO Shane Guidry announced today the formation of new marine transportation company, Quality Liquefied Natural Gas Transport, LLC (“Q-LNG”), owned 70% by Shane Guidry and 30% by Harvey Gulf. Q-LNG will own and operate assets providing marine transportation of liquefied natural gas (“LNG”), a critical component of U.S. LNG infrastructure, commencing with a long-term contract with Shell Trading (US) Company (“Shell”) to deliver LNG as a fuel source to various ports in Florida and the Caribbean. Mr. Guidry commented, “I’m very appreciative that Shell has the confidence in me and my team to service their LNG transport needs. Everyone is aware the eastern ports of Florida are very busy with pleasure-craft, and Q-LNG will be focused and dedicated to deliver extremely safe transit to all the ports we will service.”

Mr. Guidry added, “While the downturn in the Oil & Gas market has hurt all vessel operators, our continued partnership with Shell displays the confidence entrusted in our team, which is extremely appreciated and very rewarding. We will not let Shell or the end users down in any way. We will work diligently 24 hours a day, 7 days a week to ensure Q-LNG delivers extremely safe and reliable service. In July 2017, under Shane Guidry’s leadership, Harvey Gulf reached four years while working over 12 million man hours without a lost time accident. The strong safety culture we’ve developed at Harvey Gulf will be integrated into Q-LNG, as well as a continued commitment to build upon the “SAFETY ABOVE ALL” foundation our team has established.”

Q-LNG has contracted with VT Halter Marine, Inc. (“VT Halter”) for the construction of America’s first offshore LNG Articulated Tug and Barge (“ATB”). The ATB will be constructed to meet the requirements of...
# LNG POWERED VESSELS ON THE ORDERBOOK

<table>
<thead>
<tr>
<th>Year</th>
<th>Vessels Ordered</th>
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<tr>
<td>2019</td>
<td>1 LNG-Powered Vessel</td>
</tr>
<tr>
<td>2020</td>
<td>2 LNG-Powered Vessels</td>
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<tr>
<td>2021</td>
<td>5 LNG-Powered Vessels</td>
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<tr>
<td>2022</td>
<td>6 LNG-Powered Vessels</td>
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<tr>
<td>2023</td>
<td>4 LNG-Powered Vessels – 50% of all current vessel orders!</td>
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</table>

<table>
<thead>
<tr>
<th>Cruise Line</th>
<th>Vessel Name</th>
<th>Length (ft)</th>
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*American Association of Port Authorities (AAPA)*

*Port Canaveral*
What is LNG? Find out more

LNG: FUELING THE FUTURE

What is LNG? Unpurred Natural Gas (LNG) is a natural gas — the same product widely used in homes, schools, hospitals and businesses for heating, cooling, cooking and fuel water.

-260°F

- LNG is so pure; it is equivalent to diesel fuel, but it has a lower carbon footprint.
- LNG is extremely flammable, but it has a low energy ratio.
- LNG is a premium fuel for marine engines.
- LNG is used to fuel ships or marine vessels.

Environmental Impact

LNG is the fuel of the future for commercial space and cruise industries. It reduces harmful emissions of ship operations.

Safety

NGL has been proven to be a safer fuel than conventional fuel.

The Future

LNG is the fuel of the future for commercial space and cruise industries, which require the Port to invest in capabilities, partnerships and infrastructure to support its use.

For Your Information

Cruise Parking & Terminal Information

Our cruise terminals are new, innovative and ultra modern. Learn more about the world’s most popular cruise port.

Beaches, Parks & Camping Reservations

By Day...Enjoy Sand, Sun and a Breeze off the Water By Night...Stalk Fish of Dream Under the Stars

Environmental Stewardship

We are committed to advancing environmental excellence and promoting programs, plans, and initiatives that focus on sustainability.

AAPA

American Association of Port Authorities
FINANCIAL IMPACT OF THE CRUISE BUSINESS
Total Operating Revenues - $94,968,148

- Cruise Ships: 58%
- Cargo Ships: 10%
- Parking: 18%
- Land Leases: 8%
- Recreation: 3%
- Miscellaneous: 3%
Cruise

<table>
<thead>
<tr>
<th>AUGUST</th>
<th>FY18 Actual</th>
<th>Prior Year</th>
<th>Prior Year Variance</th>
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<tbody>
<tr>
<td>Total Cruise Revenues</td>
<td>$71.33</td>
<td>$68.73</td>
<td>$2.60</td>
</tr>
</tbody>
</table>

- **Cruise:** $53.8 M
- **Cruise Parking:** $17.4 M
- 4.2M Multi-day Passengers
  - Up 235K or passengers (6%)
- Grand total of passengers is up 5% at 4.5M
If you've seen one Port…
COST OF CAPITAL PROJECTS

$300M in Capital Projects 2014-2016

➢ Cruise Terminal #1 - $104.2M
  Completed December 2014
  $53,434,891 / 180,313 SF = $296 / SF

➢ Cruise Terminal #5 Renovation - $44.6M
  Completed May 2016
  $20,939,587 / 89,547 SF = $234 / SF

➢ Cruise Terminal #10 Renovation - $30.7M
  Completed November 2016
  $25,693,355.00 / 125,824 SF = $204 / SF

➢ Cruise Terminal 3 - $150M
  Currently Under Design
  Completed May 2020

➢ Cruise Terminal #8 & #10 Renovation - $45M
  Currently Under Feasibility Study

$200M 2018-2020

Top Left, Cruise Terminal 1; Top Right, Cruise Terminal 3;
Bottom Left, Cruise Terminal 5; Bottom Right, Cruise Terminal 10
DESIGN OF A MODERN CRUISE TERMINAL
Debark:
- Pilot Call: 0500-0600
- Vessel at Dock / Tie Up: 0600-0700
- Gangways Attached: 0630-0730
- Vessel Agent and CBP board
- BCSO USCG if needed
- Early Walk-offs: 0630-0730
- General Debark: 0800
- CBP Customs Clearance
- “0” Count: 1015-1030
- Buses, Shuttles, Taxis, POV: 0700-1200

Embark:
- Guest Arrival: 0930
- Scheduled Guest Arrival: 1030-1100
- Security / Check In: 1015-1030
- VIP (Concierge) Boarding: 1030-1045
- General Boarding: 1500
- Wedding / Event Parties
- Detach Gangways: 1540
- Detach Lines: 1600-1630
- Vessel Departs: 1600-1700

“TYPICAL” DEBARK / EMBARK OPERATION
DESIGN OF A CRUISE TERMINAL

- Linear PAX bridge and mobile passenger boarding bridges for increased flexibility for vessel door arrangements compared to legacy fixed gangways
- Seating for roughly 1/3 of the vessel capacity (depending on cruise line)
- Use of two-story ADA-compliant internal and external pedestrian ramps for vertical transport in place of multiple elevators and escalators
- Baggage laydown area for approximately 1.5 to 2.0 bags per person (depending on cruise line)
- Roadways and access for commercial stores, busses, charter busses shuttles, taxis, POV parking and POV drop off

Top Left, CT-10 PAX Bridge; Top Right, Cruise Terminal 5 Mobile Gangways; Bottom Left, Cruise Terminal 5 Pedestrian Ramp; Bottom Right, Cruise Terminal 10 Baggage Laydown Area
CARNIVAL CRUISE LINE TERMINAL 3
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AAPA Facilities Engineering Committee Chair