



Bigger Ships – Bigger Ports

Navigational Implications

Capt. Cliff Brand BSc (Hons) MBA FNI

MARINE, OFFSHORE AND ENGINEERING CONSULTANTS

Overview

- UL vessels
- Navigation
- Ports
- Port Navigation
 - Capital / maintenance dredging
- Port Interface
 - Port Infrastructure
- The Issues
 - Bigger Ships – Bigger Ports?
- Emergencies
 - Salvage
 - Port of refuge
 - Future challenges

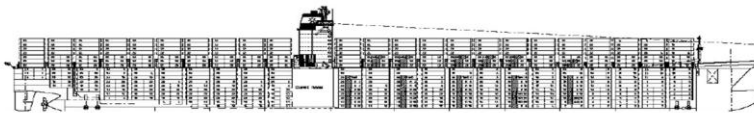


PORTS AND MARINE CONSULTANTS



Ultra Large Container Vessels

Vessel Particulars of Emma Maersk



LOA:	397 m
Breadth / Row:	56.4 m / 22
Draft:	16.5 m
Container Capacity:	15,500 TEU
Deck:	8 Height
Hold:	11 Height
Deadweight:	157,000 DWT



All 8 sister vessels were delivered from 2006-2008



Page 9

Confidential



PORTS AND MARINE CONSULTANTS

Ultra Large Container Vessels

MSC Danit - 14,000 TEU



LOA:	365.5 m
Breadth / Row:	51.2 m / 20
Draft:	16 m
Container Capacity:	14,000 TEU
Deck:	9 Height
Hold:	11 Height
Deadweight:	153,000 DWT

All 10 sister vessels were delivered from 2009 - 2010



PORTS AND MARINE CONSULTANTS

On the Blocks

Vessel Particulars of Maersk Triple-E 18,000TEU



Ship Owner: Maersk Line
 Ship Yard: Dawoo
 Delivery: 2013-2015
 TTL order: 10

LOA:	400 m
Breadth / Row:	59 m / 23
Draft:	14.5 m
Container Capacity:	18,000 TEU
Deck:	9 Height
Hold:	12 Height
Deadweight:	165,000 DWT

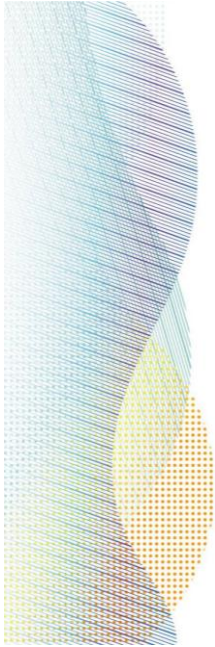


Page 10

Confidential



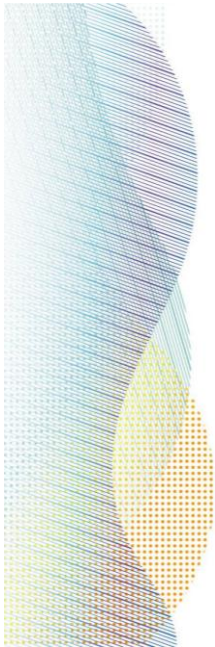
PORTS AND MARINE CONSULTANTS



Navigation



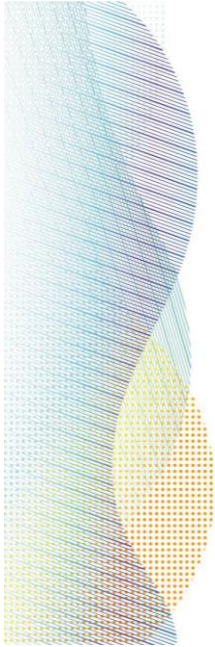
PORTS AND MARINE CONSULTANTS



Ports



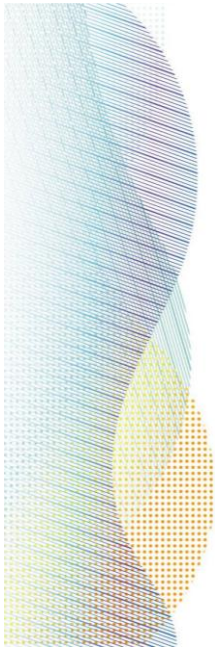
PORTS AND MARINE CONSULTANTS



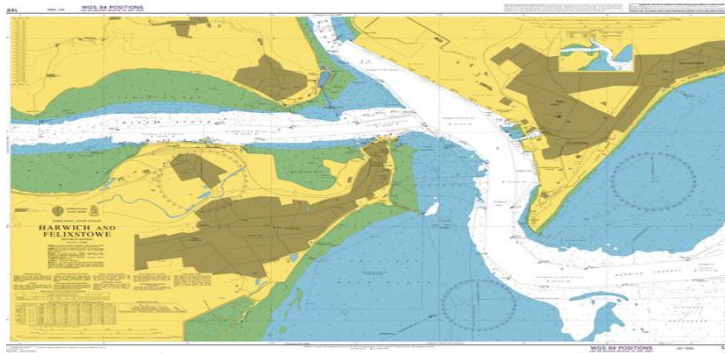
Ports



PORTS AND MARINE CONSULTANTS



Ports / Navigation



PORTS AND MARINE CONSULTANTS



Port / Navigation

- Experienced pilots
- State-of-the-art VTS
- Hours of simulation
- Strict adherence to passage planning and bridge team management
- Strict adherence to traffic management
- Strict adherence to environmental limitations such as weather and tidal current.



PORTS AND MARINE CONSULTANTS



Capital / Maintenance Dredging



PORTS AND MARINE CONSULTANTS



Port Infrastructure



PORTS AND MARINE CONSULTANTS



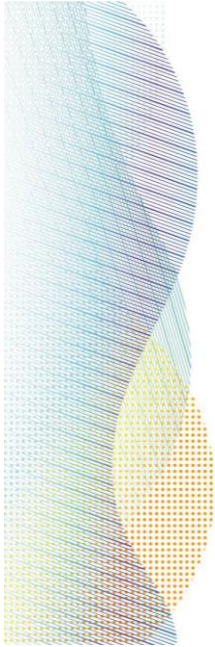
Bigger Ships – Bigger Ports?

- The issues
 - Navigational implications
 - Capital and maintenance dredging costs
 - Infrastructure costs
 - Safety margins!

- What happens in case of an emergency?



PORTS AND MARINE CONSULTANTS

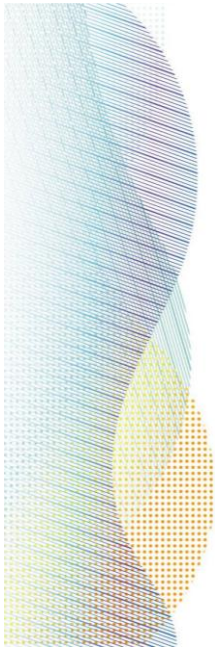


Reality

- Unloading of bunkers! (coastal state requirement)
- Port of refuge - Where?
- Towage resource?
- Lifting equipment? (floating sheerlegs - logistics)
- Cargo?
- Challenges !



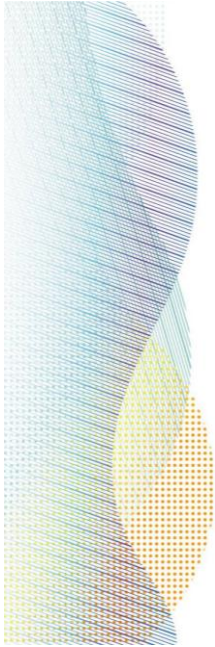
PORTS AND MARINE CONSULTANTS



Bigger Ships – Bigger Ports ?



PORTS AND MARINE CONSULTANTS



Conclusion



PORTS AND MARINE CONSULTANTS