Containership Design Considerations

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The Mission of ABS

“To serve the public interest as well as the needs of our clients by promoting the security of life and property and preserving the natural environment.”
Containership Designs

- **Panamax (~1990)**
  - 4,500 TEU, 295x32m

- **Post-Panamax (~2000)**
  - 6,000 TEU, 300x40m

- **Super Post-Panamax (~2005)**
  - 9,000 TEU, 340x45m

- **New Panamax (~2010)**
  - 13,200 TEU, 365x48m

- **Ultralarge (~2013)**
  - 18,000 TEU, 400x59m

- **Malaccamax (?)**
  - 22,000 TEU, 450x60m
Projected 2014/2015 View of the Panama Canal

- The Panama Canal Authority began the process of expanding the nearly century old Panama Canal in 2008 through a $5.52 billion project scheduled for completion in 2015.

- The expansion program includes four major components:
  - New-Panamax locks
  - A Pacific access channel
  - Improvements to navigation channels
  - Improvements to water supply

Considerations for Main Design Parameters

- **Length**
  - Terminal Quay
  - Panama canal locks
  - Number of shore cranes

- **Beam**
  - Crane outreach
  - Panama canal locks

- **Height**
  - Strength of containers
  - Longitudinal strength of hull

- **Draft**
  - Panama canal locks
  - Water depth at Terminals

- **Air Draft**
  - Bridges F. EX. BAYONNE NJ
  - Height of stacks on deck

- **Speed**
  - Size of main engine and propeller
  - Fuel consumption = speed$^3$
Approximately Economical Indicators Over Ship Size

Payload 10t/TEU  TEU/NOM TEU

Relative Power/ NOM TEU
Relative CO₂ Emission/ NOM TEU
Crew/TEU

PANAMAX  NEW PANAMAX  ULCC