

The Harbor Transporter For Shoal Draft Ports



Presented by

Seaworthy Systems, Inc.

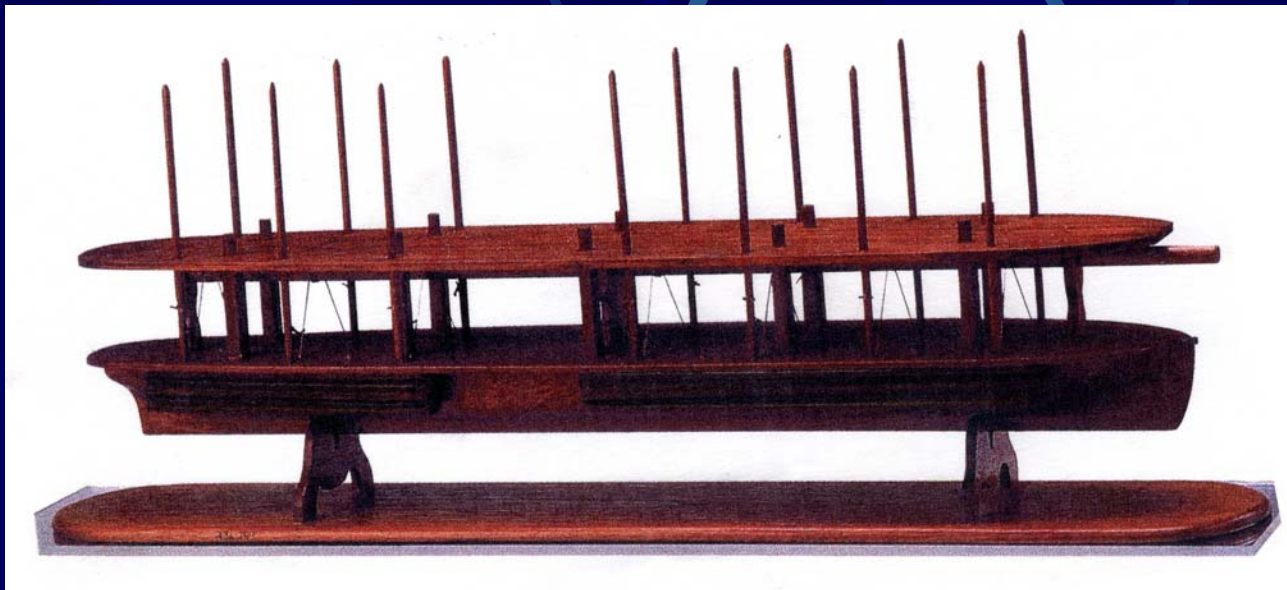
Martin Toyen

Introduction

- Shoal Draft Port Dilemma:
 - Deep draft ships can't call if fully laden
 - The Port and the region might be at an economic disadvantage do to the shallow channel depth
 - Permit process to deepen the channel takes a significant time
 - Dredging projects can take up to 10 years

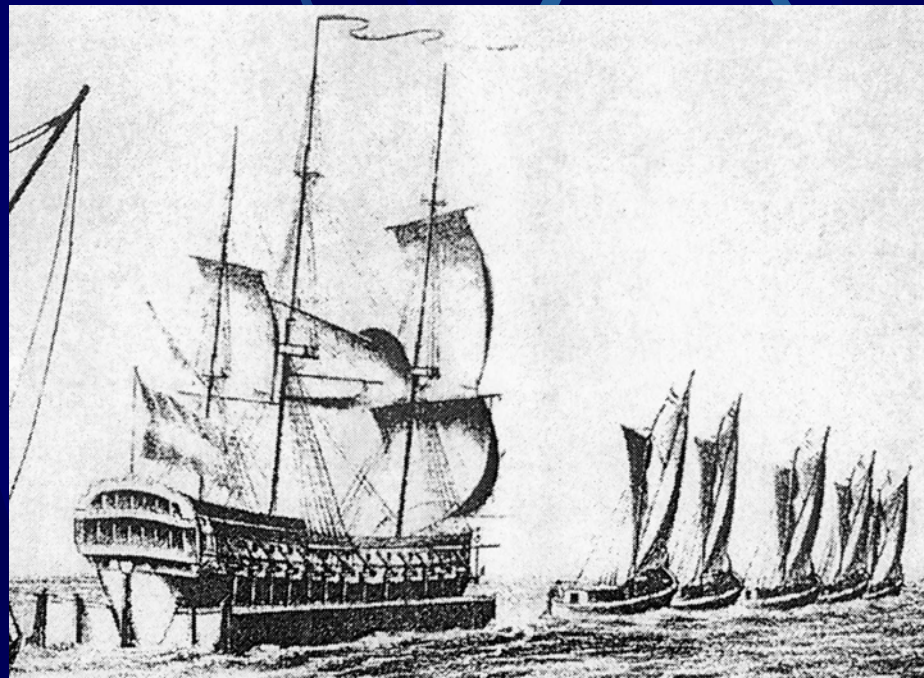
The Only President Holding a Patent

- Abraham Lincoln's Patent:
 - No. 6469, in 1849

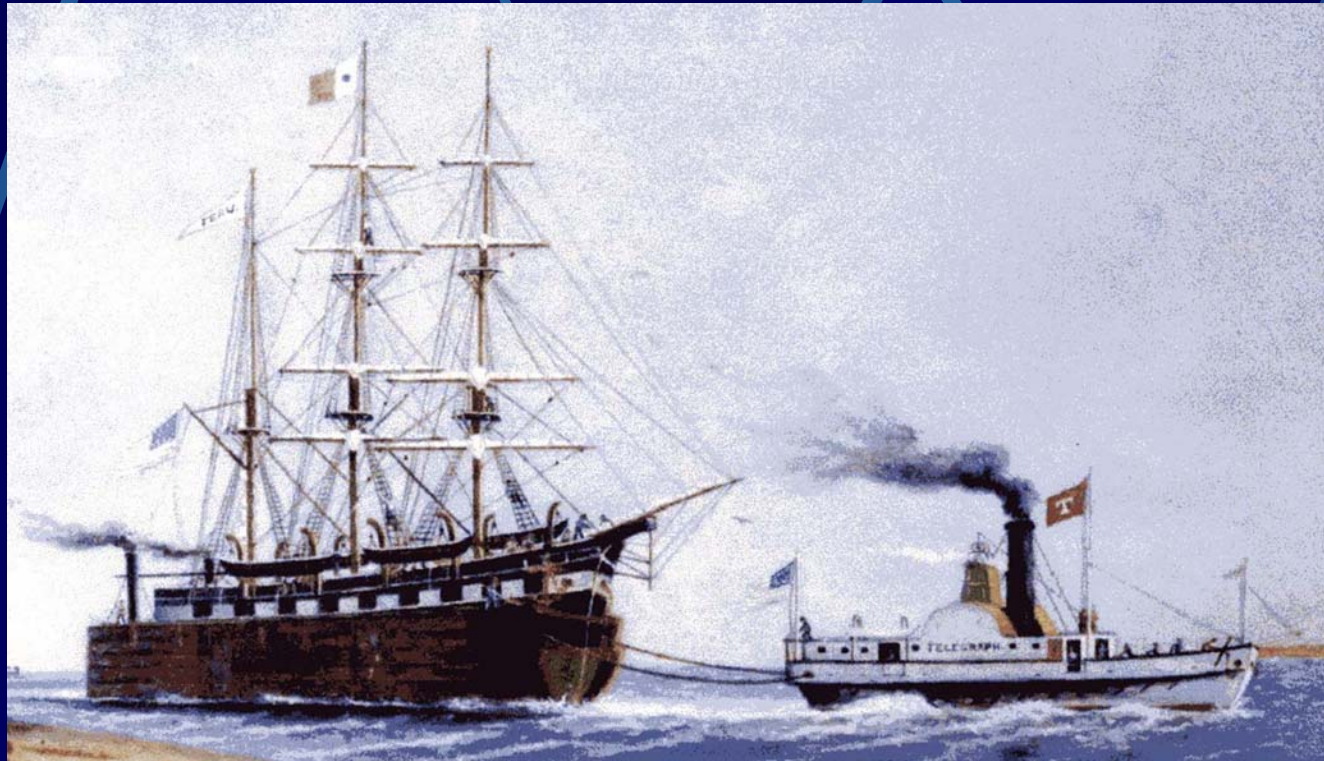


History is Replete with Solutions

- Dutch Trader – Zuyderzee 1688



- **Nantucket Whaler - 1842**



- **Naval Combatant – Gulf of Aden**
 - **USNS COLE**



Seaworthy's Self- Powered **HARBOR TRANSPORTER™**

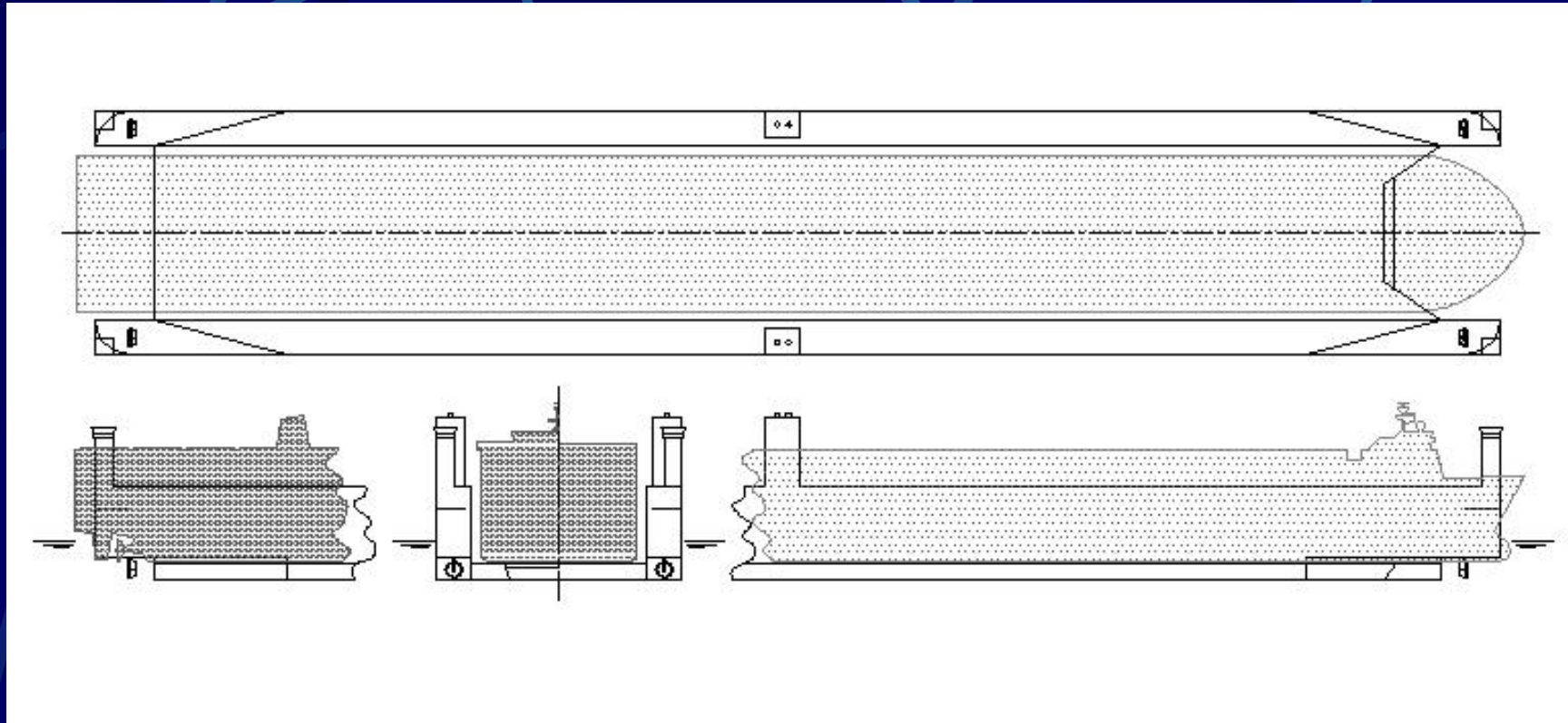
for Shoal Draft Ports



Seaworthy's Harbor Transporter™

- Offered in three sizes:
 - 1,000 feet in length
 - 800 feet
 - 600 feet

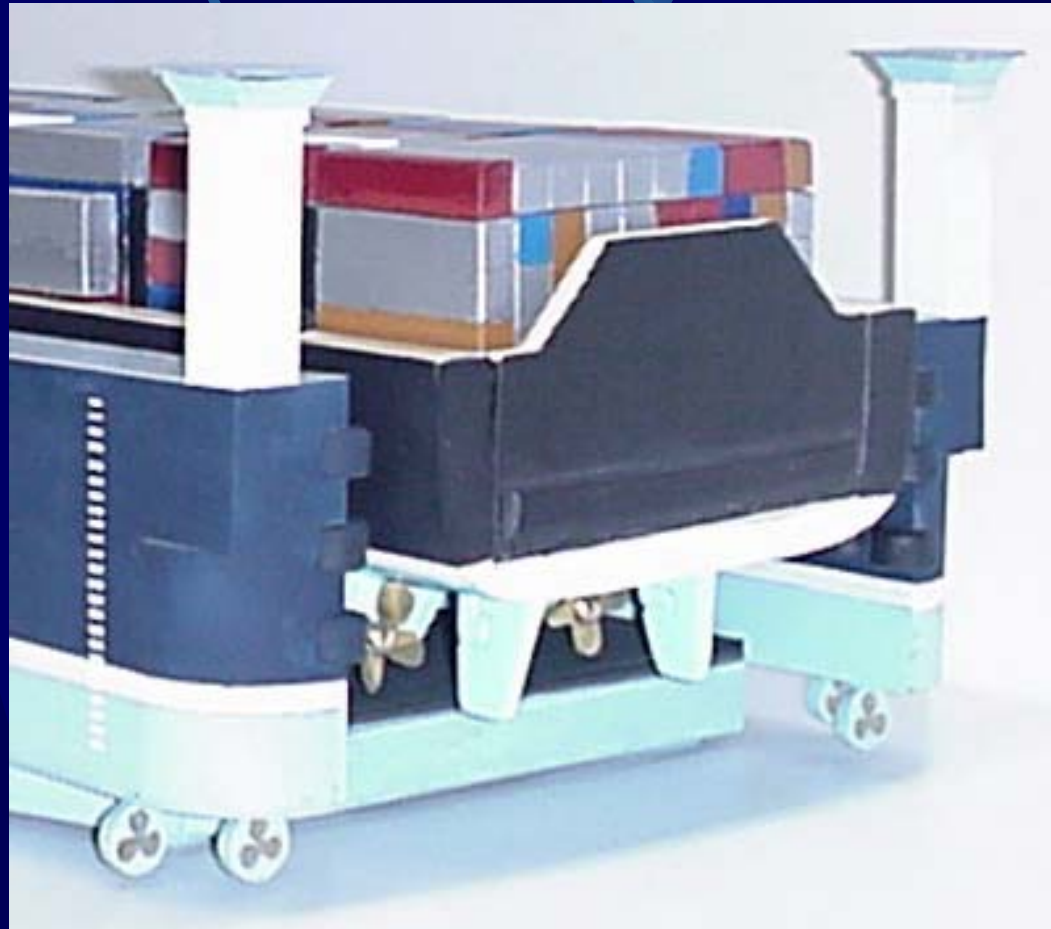
General Arrangement



Seaworthy's 1000 ft Harbor Transporter™

- 1,000 ft. Transporter Specifications
 - LOA – 1,100 ft. including 4 bridges (each corner)
 - 140 ft. width opening between camels, 220 ft. overall beam.
 - 15 ft. draft (empty), 32 ft (loaded)
 - Self Powered – 2 x 5,000 HP electric driven thrusters on each corner (40,000 HP total)

Electric-Driven Thrusters



Seaworthy's 1000 ft Harbor Transporter™

- Displacement - 90,000 tons
- Light ship weight 35,000 tons
- Ship expected to be lifted 2/3 with 40,000 tons afloat during transit
- Ballast Pumping Rate – 12 pumps, 750 tons per minutes total capacity
- Six articulated dry dock sections and 24 hydraulic, recessed, air roller, positioning bumpers

Seaworthy's 1000 ft Harbor Transporter™

- 50 foot draft ships can be transported through 32 foot channels
- 40 foot draft ships can be transported through 27 foot channels
- 32 foot draft ships can be transported through 21 foot channels

Commonly Asked Questions

- Issue: Obviously suitable for smaller destroyers, cranes and oil rigs, not large containerhips
- Answer: *Primarily we're "scaling up," much like containerhips going from 1,000 TEU to 10,000 and beyond, or 20,000 DWT tankers to 400,000.*

Commonly Asked Questions

- Issue: Dry docks don't move around harbors and can't make safe maneuvering speeds
- Answer: *It is really a matter of what one designs for and how much power and capacity one builds into this system. We are proposing a bona fide self-powered ship transporter, not a dry dock*

Commonly Asked Questions

- Issue: Ship lifting is risky – not done often – especially with a loaded ship.
- Answer: *Instead of keel blocks, the entire lift deck is covered with a special, thick, “compliant” material and is properly articulated by the connected six lifting sections. Flooding is safely controlled to match the ship’s loaded bending moment. Ship remains at least 30% buoyant, reducing structural and bottom loads*

Commonly Asked Questions

- Issue: Dry-docking takes all day. How much longer will this extra operation take?
- Answer: *The process envisioned is for the transporter to approach the anchored ship in deep water. move below it from astern take lines to and from designated locations centered with air-roller bumpers and, once gently grounded, the transporter deballasts in a matter of an hour or so. Coming off the dock will take even less time. Transit time is equal to existing times.*

Commonly Asked Questions

- Issue: The air draft at some bridges may be marginal. Lifting may preclude clearing.
- Answer: *Yes, as the ships are configured now. But, just as river and canal boats in Europe are configured for low bridges, accommodating modifications can be made. Many mega-ships, for example considering forward visibility, will undoubtedly have pilot houses forward and thus lower air drafts. An alternative is to dredge a limited zone at the bridge.*