EASTERN TUGBOATS

Harbor Tugboat *Gertrude*



MAIN DATA

Length overall	32.0m
Breadth	12.8m
Depth	6.0m
Full Load Draft	4.5m
Design Speed	12 kts
Max Speed	14 kts
Endurance	3000 nm
Operation	East Coast USA
Installed Power	7200 kW
Bollard Pull	80 tonnes
Propulsion	Electric

Harbor and Ship Assist Tugboat

- *Gertrude* provides ship assist and escort services including docking, undocking, and escorting for large ocean-going vessels from Portland, ME to Jacksonville, FL
- Designed to be highly efficient and maneuverable to accommodate her mission requirements
- Emergency response, firefighting and oil spill cleanup capable
- Utilizes 3 generators and 17 battery packs to power twin azimuthing thrusters
- Under 300 GRT and 500 GT
- USCG and ClassNK Compliant



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Hull

- Steel double chined hull with steep rise to her buttock
- Emphasis on structural continuity
- Large box skeg to increase projected area
- Azimuth thrusters angled at 5 degrees to align with buttock flow

Weights & Center

- Lightship draft: 3.6m
- Lightship displacement: 676 MT
- Lightship LCG/VCG: 15.8m AFT of FP/5.2m ABL
- Lightship Trim: 2.1 deg AFT
- Full load design draft: 5.2m
- Full load displacement: 880 MT
- Full load LCG/VCG: 14.8m AFT of FP/3.4m ABL
- Full Load Trim: 1.2 deg FWD

Capacities

- 52,600 gal of fuel oil (70.17 gal per hour consumption at 75% load)
- 4000 gal of freshwater
- 1900 gal of grey water
- 990 gal of black water
- 700 gal of sludge

Propulsion & Powering

- (2) Kongsberg RD-AZ-2800 Electric Azimuthing thrusters requiring 5200 kW to achieve 80 tonnes of bollard pull
- (3) Caterpillar 3512E Diesel Generator Sets generating 1700 kW each
- (17) Corvus Orca batteries adding an additional 2100 kW hr of power

Deck Machinery

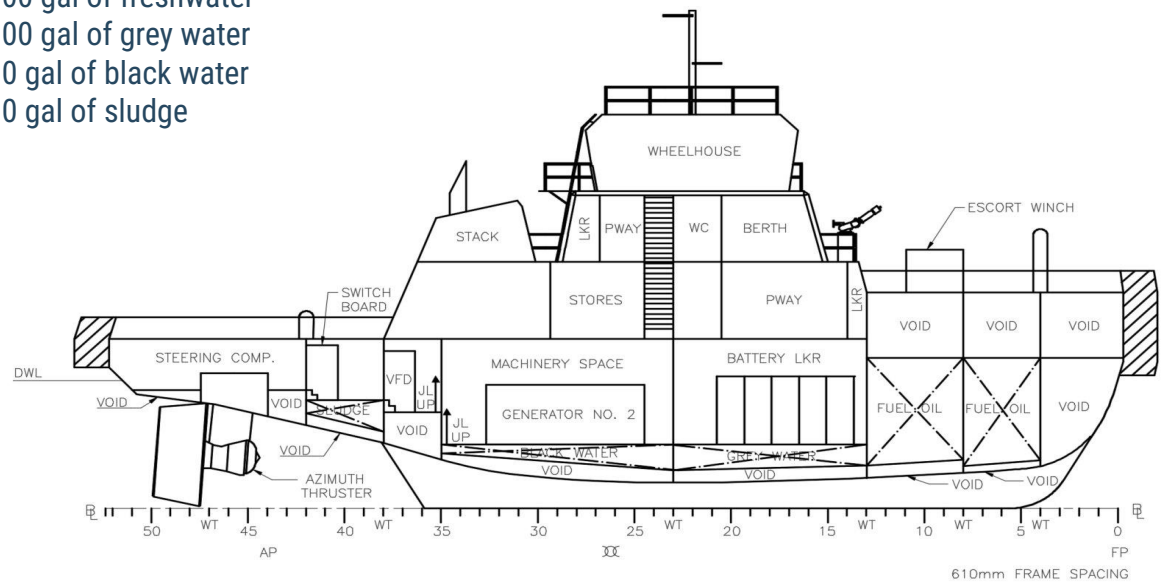
- (1) Kongsberg PM Escort Winch
- (1) Versatech Oil Spill Boom Reel
- (1) H-bitt
- (1) Staple

Accomodation

- 2 Officers + 4 Crew

Classification

- ClassNK, USCG, IMO Intact Stability (IS) Code 2008, US Code of Federal Regulation 46 CFR



Summary Data Sheet



EASTERN TUGBOATS



Sydney Barok

Hometown: Columbus, OH

Technical Resume:

- Marine Engineering Intern: Herbert Engineering Corp (HEC); Alameda, CA
- Naval Architecture Intern: Shipwright; Fort Lauderdale, FL
- Engine Cadet: USNS Apalachicola; Military Sealift Command; Mobile, AL

Relevant Interests: Motorsports

Career Aspirations: Marine engineer; alternative fuels & environmental sustainability



Anna Lindberg

Hometown: Bellevue, WA

Technical Resume:

- Naval Architecture Intern: Crowley Engineering Services; Seattle, WA
- Engine Cadet: USNS Comfort; Military Sealift Command
- Shipyard Intern: Marine Group Boat Works; San Diego, CA
- Sailmaker: North Sails; Seattle, WA

Relevant Interests: Sailing, sailmaking

Career Aspirations: Naval architect; small vessel or sailing yacht design



Thomas Motyka

Hometown: Hadley, MA

Technical Resume:

- Naval Architecture / Engineering Intern: Bill Prince Yacht Design; Port Washington, WI
- OS / Cadet: Resolve Pioneer; Resolve Marine; Dutch Harbor, AK
- Boatbuilding Intern: Brooklin Boatyard; Brooklin, ME

Relevant Interests: Sailing, wooden boat restoration, car / motorcycle restoration

Career Aspirations: Yacht design; recreational small craft; composite structures



Eli Murray

Hometown: Scituate, MA

Technical Resume:

- Naval Architecture / Design Intern: Arey's Pond Boat Yard; Orleans, MA
- Engine Cadet: USNS Patuxent; Military Sealift Command
- Boatbuilding Intern: Brooklin Boatyard; Brooklin, ME

Relevant Interests: Sailing, wooden boat building, woodworking

Career Aspirations: Recreational / small vessel design

Meet The Team