Harbour Tug Operations: Ship-Assist Towage, Escort Towing and Girting Prevention

14 – 18 November 2027
Dammam - Eastern Province five-star



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Introduction:

Harbour tug operations decide whether a large ship reaches or leaves its berth without damage, yet many ports still allocate tugs by habit, give unclear orders between pilot and tug master, and accept towline and girting risks that crews have learnt to live with. Contact damage, parted lines and capsized tugs usually trace back to these gaps. This Core Concept course trains tug crews, pilots and marine operations staff to select, position and command tugs for ship-assist towage and escort work. Each participant produces a Berthing Tug Plan and Risk Assessment for a case vessel and berth.

Course Objectives:

- Select the tug type, propulsion arrangement and bollard pull a given ship, berth and weather condition calls for
- Predict how wind, current, shallow water and ship speed alter the forces a tug must counter during ship-assist work
- Give and confirm tug orders between master, pilot and tug crew using agreed commands, whistle signals and a pre-job briefing
- Position and handle tugs at the bow, the stern and alongside to assist berthing, unberthing and turning manoeuvres
- Control towline, winch and hook hazards, including girting, snap-back and emergency release, during direct and indirect towing
- Prepare a Berthing Tug Plan and Risk Assessment with weather limits, abort points and fleet crewing requirements

Target Audience:

- Those who command harbour tugs and decide how each tug is positioned and driven during a job
- Deck crew who make fast, tend and release towlines and operate towing winches and hooks
- Those who pilot ships in port approaches and direct tug assistance from the bridge
- Port marine functions that set tug requirements, weather limits and movement approvals for each berth
- Those who run harbour-craft fleets and are accountable for tug availability, maintenance and crew training

Course Outline:

Day 1: Harbour Tug Roles, Types and Propulsion

- Ship-Assist Towage Versus Escort and Coastal Towing: Roles and Service Scope
- Conventional Single and Twin-Screw Tugs: Rudder, Fixed Propeller and Stern Towing Point
- Azimuth Stern Drive Tugs: 360-Degree Thrust, Pushing Modes and Reverse Working
- Voith Schneider Tractor Tugs: Cycloidal Thrust Control and Stability Margin
- Port Tug Fleet Current-State Review: Ships Served, Berth Constraints and Incident Record

Day 2: Bollard Pull, Ship-Handling Forces and Tug Selection

- Static and Continuous Bollard Pull Ratings and Certificate Interpretation
- Wind Area, Current and Under-Keel Clearance Effects on Required Tug Force
- Squat, Bank Effect and Ship Speed Limits for Safe Tug Connection
- Tug Requirement Calculation Worksheet: Ship Size, Windage and Berth Approach
- Tug Selection Matrix: Number, Type and Towing Arrangement per Ship Category

Day 3: Tug Communication, Positioning and Berthing Assistance

- Master-Pilot-Tug Information Exchange and Pre-Job Tug Briefing Card
- Standard Tug Orders, Power Percentages and Order Confirmation Routine
- Making Fast at the Bow: Approach Angle, Interaction Zone and Line Passing
- Stern and Alongside Positions: Push-Pull Work, Turning and Braking the Ship
- Unberthing Sequence: Lifting Off the Berth, Swinging and Releasing Tugs

Day 4: Towline Safety, Escort Towing and Emergency Support

- Towline, Pennant and Stretcher Selection With Winch Brake Settings
- Girting Risk Factors, Gob Rope Use and Quick-Release Hook Testing
- Indirect Towing and Escort Modes: Steering and Braking Forces at Speed
- Weather Limits, Swell Criteria and Job Abort Decision Points
- Emergency Response Overview: Blackout on the Assisted Ship, Parted Line and Tug Firefighting Support

Day 5: Tug Case Exercises and the Berthing Tug Plan

- Case Exercise: Loaded Tanker Berthing in Cross Wind With Two ASD Tugs
- Case Exercise: Container Ship Unberthing With a Tractor Tug on a Short Line
- Harbour-Craft Fleet Crewing, Maintenance Planning and Competence Records
- Berthing Tug Plan and Risk Assessment Drafting With Hazard Controls
- Plan Review Panel: Pilot, Tug Master and Port Marine Perspectives

Skills You Will Gain:

- Tug Propulsion Knowledge
- Bollard Pull Assessment
- Ship-Handling Force Estimation
- Tug Order Communication
- Towline and Winch Safety
- Escort Towing Technique
- Towage Risk Assessment
- Harbour-Craft Fleet Planning

Why Attend This Course:

- Return with a Berthing Tug Plan and Risk Assessment built for a case vessel and berth that can be adapted to your own port
- Work through why tugs girt or lines part and which settings and habits prevent it
- Practise the order and confirmation routine that keeps pilot and tug crews working from one plan
- Compare tug practice with pilots, tug crews and port marine staff from container, tanker and bulk berths

Conclusion:

Safe ship-assist towage depends on the right tugs, clear orders and towing gear handled within known limits. The course moves from tug roles and propulsion types, through bollard pull, ship-handling forces and tug selection, to communication, positioning and berthing assistance, then to towline safety, girting prevention, escort towing, weather limits and emergency support. The final day applies these methods to case berthing and unberthing jobs and produces a Berthing Tug Plan and Risk Assessment ready for the port marine team.