

AUX Coxswain Course Towing Approaches



U.S. Coast Guard
National Motor Lifeboat School

Rev 01 SEP 10



Homeland
Security

Definitions

- **Shock loading** – The rapid extreme increase in tension on the towline, which transfers through the tow rig and fittings to both vessels.
- **Station Keeping** – The art of keeping a boat in position, relative to another boat, aid, or object with regard to current, sea, and/or wind.
- **Static Force** – The forces that cause a towed vessel to resist motion e.g., Inertia and Moment of Inertia.

Definitions

- **Dynamic Force** – Forces associated with the changing environment e.g., the wind, current, weather.
- **Yaw** – Sheering off alternately to port and starboard
- **Windward** – Towards the wind.
- **Leeward** – The side or direction away from the wind.

Definitions

- **Catenary** – The sag in a length of chain, cable, or line because of its own weight and which provides a spring or elastic effect in towing, anchoring, or securing to a mooring buoy.
- **In Step** – The towing boat keeping the proper position with the towed boat. For example; the proper distance in relation to sea/swell patterns so that both boats ride over the seas in the same relative position wave crest to wave crest.

Definitions

- **Scope** – The length of towline or distance from the stern of the towing vessel to the bow of the tow.
- **Drogue** – A device used to slow rate of movement. Commonly rigged off the stern of a boat while under tow to reduce the effects of following seas. May prevent Yawing and/or broaching.

Definitions

- **Danger Zone** – Hazardous area around the disabled vessel. The size of the danger zone depends on the conditions, size of vessel, and skill and experience level of the coxswain.

Towing

- O/S Preparations
- Crew Communication
- Types of Approaches
- Selection of Approach
- Optimum Position
- Station Keeping
- Opening and Closing

On scene Preparations

Circle the Vessel

- Take your time.
- Solicit input from crew.
- Identify predominant force.
- Identify hazards.
 - If T.O.W., On fire etc. Remove all people when Necessary, Safe and/or practical.
- Ensure all persons on vessel put on life jackets – If they don't have enough provide them.

On scene Preparations

Circle the Vessel

- How's the vessel riding?
- Towing rig configuration
 - Pennant / Bridle/ Skiff Hook
- Communications
 - How often? Back-up? What info can they provide you?

Note: Remember location of bitts, cleats, and chocks for alongside tow.

On scene Preparations

Setting up the Towing Approach

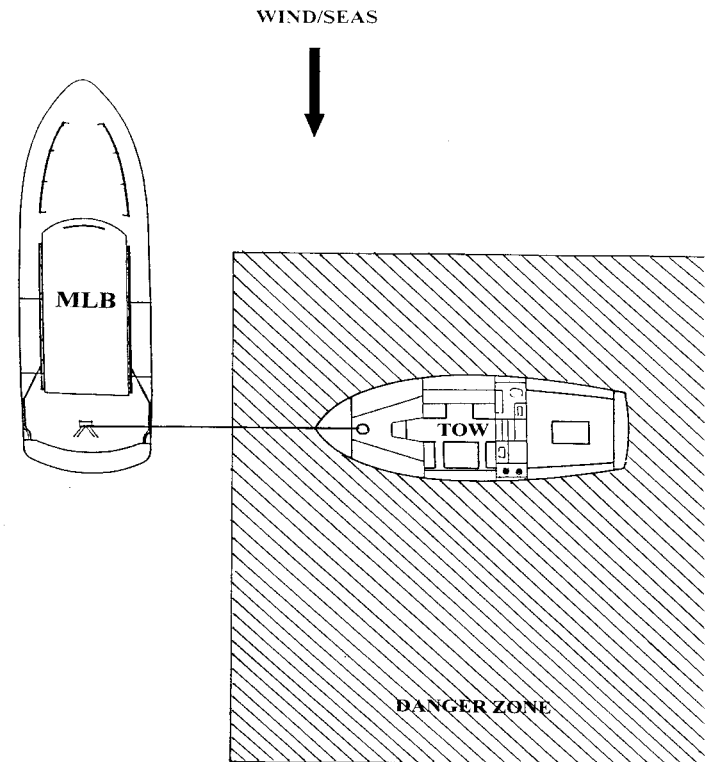
- Determine other forces that will affect tow.
- Type of vessel.
- Determine side to pass tow rig.
- Skill/Experience level.

On Scene Preparations

Selection of Towing Approach

Bow To:

- Bow must be kept square to prevailing force.
- Keep Rudder Angle Indicator centered, and use throttles to station keep.



On scene Preparations

Setting up for Tow

- Brief crew on your intentions and solicit input.
- Assign crew duties.

On scene Preparations

Setting up for Tow

- **Station keep and observe**
 - Determine set & drift.
 - Effect of the wind/swell on vessel
 - Prepare deck.
- **Identify danger zone.**

Note compass heading of predominant force.

Definitions

- **Optimum Position** – The position taken by the Vessel which allows the crew the maximum amount of time to pass the heaving line and towline without getting in a hurry. This position gives the coxswain the ability to see the tow rig attachment point and supervise crew while passing the tow rig.

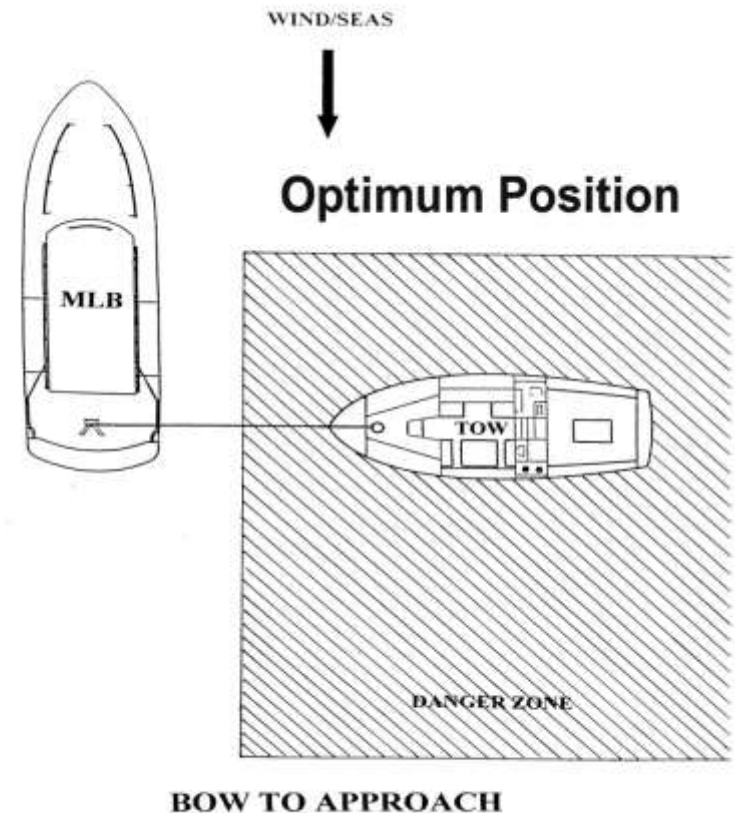
Towing Approach

- Determine where to pass the heaving line. (above or below *optimum*)
- Move ahead with bow/stern square into prevailing element.
- Avoid zig zagging during the approach.
- Decrease speed to bare steerageway before reaching *optimum position*.
- Boat must be stopped before passing the heaving line.

Optimum Position

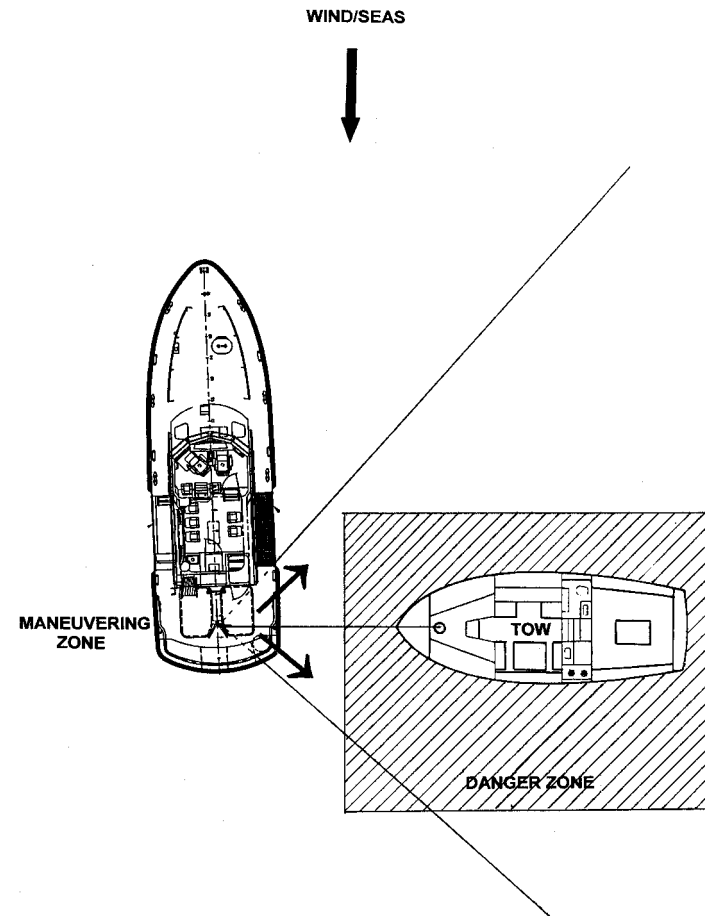
Safe distance

- Keeps your vessel out of danger zone.
- Establishes a safe distance.
- Allows time to pass tow rig.
- Minimizes stress level.



Maneuvering Zone

- 90 degree arc, 45 degrees forward and 45 degrees aft of the tow bitt.
- Use the tow bitt, tow line and the attachment point on the disabled vessel as a visual gauge to maintain optimum position.
- **Don't Forget: Stop, Square, Optimum**



Opening and Closing Maneuver

- Communicate your intentions clearly.
- Is designed to gain or close distance to the disabled vessel safely.
- Used as necessary to keep your vessel out of danger.
- Done prior to passing the towline/gear over?
- Speed consistent with conditions.

Opening and Closing Maneuver

- Two types of Openings
 - Opening by Pivoting
 - Opening by Backing
- Two types of Closings
 - Closing by Backing
 - Closing by Quartering (***least preferred***).



QUESTIONS?