

The New Frontier of Towing

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The Knack

What makes an expert tug and barge handler? Operators of towing vessels might not be able to answer that in words, but they sure know one when they see one. Take the basic maneuver of transitioning from towing a barge astern to taking it on the hip, alongside. We've often seen this maneuver executed. And many of us have been fortunate enough to witness those who have "the touch."



"The maneuver starts with the tug gliding along in front of the barge, pacing the barge's gradual loss of headway. At just the right moment the operator swings the rudder over and guides the tug out of the barge's path, letting the barge bow pass close off his stern. Hands on the controls, the operator finds the sweet spot between engine RPM's and rudder angle to twist the tug around and lay it in flat on the barge's side-shell. As the tug lays firmly in on the barge there is no jolt, no hint of the potential violence of this maneuver. The tug shoulders into the barge, firmly compressing tires and fendering. The spring line goes up and the operator lets the tug shift gradually forward, smoothly taking the slack out of the line, wringing tension into it until it is taut. Stern line and headline go out and then the safety lines."

Many of us have also had the unfortunate opportunity to witness those who either don't have or have temporarily lost "the touch." The bent hand rails, caved in bulwarks, scalloped sides of barges and other "battle scars" testify to those times when this maneuver didn't go well.

Exactly what are the skills and qualities an individual needs to be one of those who can complete a voyage with no dents or scratches? We generally look for people who have the boat handling knack, a knack that includes "seat of the pants" smarts plus solid "sea sense", plus the ability to "think on their feet." Persons with that set of qualities are needed because many of the most critical activities in tug and barge work happen at speed --they occur too rapidly to permit one to "think" one's way through.

What is this "knack?" Those that have it can't readily define it. And don't think about it much. In fact they will tell you that's exactly what they are doing-not thinking, just doing. In reality, what they possess

is a finely honed ability to do two things semi-automatically: one, identify critical decision points; two, take timely action. They can take in a huge amount of information, assess its importance, filter and sort it by priority, take action and then move on to the next critical decision point.

Critical Decision Point

What is a “critical decision point?” It is a point in a dynamic situation--such as a tug and barge maneuver-- when the operator engages in a decision-making process and takes subsequent action that will determine the success or failure of reaching his or her goal. Most situations have multiple critical decision points. Consider the basic task of taking a barge on the hip. Success or failure hinges on many junctures in that maneuver: the operators choice of when to kick the rudder over to begin his turn to catch the barge; when and how much engine RPM to apply as the barge passes him by; and others. These are but two of the multiple critical decision points entailed in this maneuver.

These critical decision points may occur slowly or they may come in rapid fire depending on the situation. An operator with the soft touch is one who does two things very well. One, he’s able to “think ahead;” he can visualize the critical decision points before they occur. Two, he can rapidly process information he perceives through his senses and instruments on the boat, identify the most important factor(s), and take immediate action.

When one is shifting a tug from towing a barge astern to going alongside there is simply too little time to consciously assess and act on every factor involved in that maneuver. One has to weigh and process a constant stream of information: How fast is the barge moving? Has the wind caught the bow of the barge? Is the rudder pointed the right way? How much power is required to twist and back up? Am I coming up too hard on the spring line? Is the deckhand clear of the headline? The operator must not only be aware of the many factors in the situation but must be able, in that moment, to focus on the one or two that are the highest priority.

When you watch someone with a good touch take a barge alongside the process looks simple and seamless. He makes it look easy. But when you see someone struggle with that same “simple” maneuver the situation often unfolds faster than he can take corrective action. In trying to “think” his way through the maneuver, he engages in a conscious and logical train of thought recognizing the various factors, weighing possible alternatives,



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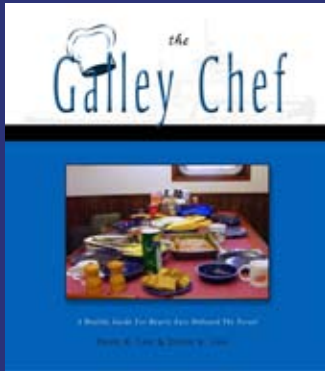
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acting on a selected choice--but the situation has already evolved to, or sometimes past another critical decision point.

That is what happens when our struggling operator is at the aft controls, shortening up to go alongside, gets in irons and hit by the barge. His mind and body are locked into one task-- shortening up his tow wire to the appropriate length. But while he's mentally processing the operation of the winch controls and figuring out how short his wire should be, he's stuck at one critical decision point.

Meanwhile the situation continues to unfold. The barge may still have too much headway on, and not slow down. Or perhaps it has sheered off to one side and is heading for a rocky beach. By the time this operator recognizes he's in trouble--he's either been hit by the barge or his deckhands are wildly gesturing and running for the tug's bow-- the situation is beyond redemption. The events unfolded at a rate beyond this operator's processing speed. He's been passed not only by the barge but also by a number of critical decision points when he could have altered the outcome of this particular maneuver.

Can people be trained to acquire and hone these critical decision making skills? Can people be made aware of what their personal threshold is for processing information? Can they be taught how to manipulate a situation so they can manage unfolding events at a speed they can handle? Can they acquire the mental tools to think ahead, to recognize critical decision points and to visualize future ones?

The answer to those questions is “Yes!” But unlike the aviation and rail industries we in the towing industry are in our infancy in employing effective techniques to teach these skills.

Traditional Method

Our traditional method has rested on the principle that people will acquire the needed skills through “experience.” Experience is instruction by osmosis. We assume through experience—both through making mistakes and doing things right- the operator will absorb the knowledge of what does and doesn't work. We assume further that he will carry that knowledge and apply it to future situations. And given enough time and experience, we hope that he will have been exposed to a variety of situations to ensure his having learned the whole spectrum of boat handling skills.

If only that were the case. Examples abound of operators who have been in the towing business for years, with varied experience who still struggle with particular maneuvers. They are not learning from experience. In fact, experience is teaching them only one thing-- how to keep using a technique that doesn't work.

The towing industry has devoted considerable resources to implementing comprehensive safety and training programs. The training received through STCW, ISM, RCP, ISO and similar programs has addressed many important safety and operational issues. These programs have proven highly successful in many arenas. However, teaching the art of tug and barge handling is not one of them.

The Future

As an industry, we are in the infancy of addressing this essential training element. Simulators for towing vessels, the Towing Officer Assessment Record (TOAR) are the first steps in this direction; this should just be the beginning. Prospective mates and captains should undergo an organized, sequential learning program that focuses on hands-on, onboard training. Detailed performance criteria should be developed that will offer a consistent set of standards to measure an individual's skill and level of competence.

Future successful tug and barge handling programs will incorporate two fundamental components: One is a structured, progressive training program, utilizing simulated and at sea experience, that gives a mariner exposure to the experiences he needs to be a good tug handler. The second is a set of learning tools that facilitates a mariner's ability to extract the real pearls of wisdom from his experiences and not just leave it to the inconsistency of osmosis.

Many of today's towing vessels employ sophisticated vessel design and technology. However technology has not replaced the need for an operator who, at the end of the day, can catch that barge and put it to the dock without putting his personal stamp on the handrails and bulwarks, and leaving a trail of busted pilings in his wake.



Western Towboat Company - Pacific Titan