

Working Together

Safe Voyage[®]



SMS BASICS

Teamwork

BOOK NEWS

The Galley Chef

ART OF TOWING

The New Frontier of Towing

SAFETY DECK

Vessel Accidents and Losses

LEGAL BITTS

Workplace Smoking Ban

BRIDGING THE GAPS

Navigation Skills Assessment

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Welcome!

This is a proud moment for us to provide this publication to you. It has been a work in progress for some time and we could not have done it without the enthusiasm, encouragement and support of our clients and colleagues in the maritime industry.

Thank you to the individuals who responded so generously with their time, talent and expertise to provide wonderful feature articles and on-going columns for this publication. We would also like to thank the many Captains, Mates, Tankermen, Engineers, Deckhands, and Shoreside Personnel that have candidly opened up during workshops and shared their challenges, beliefs and ideas for continual improvement. Without you, the marine towing industry would not be where it is today.

Together, we will explore new ground; work collectively in finding meaningful solutions to complex issues; have open forums to share ideas, thoughts and suggestions; hear about lessons learned through personal experience and stories told; gather pearls of wisdom; identify and bridge gaps, and lighten your voyage by sharing a laugh or two.

This publication is for all of you, shoreside and operations personnel alike because of your commitment to this industry; your personal safety; the safety of your co-workers; the environment; and most importantly, for doing an excellent job by being the best that you can be for yourselves, your families, the communities that depend on you and the companies that employ you.

Enjoy and Safe Voyage,

Dean & Dione

The New Frontier of Towing

by Captain Jeff Slesinger

Director-Safety & Training
Western Towboat Company



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,



Available Now

Safe Voyage® Safety Meeting Topics

The Safe Voyage® Safety Meeting Topics were developed to meet regulatory training requirements by mariners for mariners. Each topic includes guidelines to facilitate discussion onboard the vessel. They are sold in bundles of 6 with 24 total topics to choose from. It even includes a place to add your company logo.

For more information contact QSE Solutions @ 425-788-2713.

Coming Soon

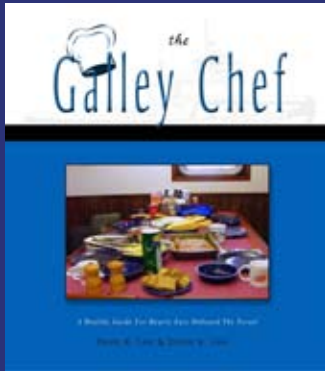
Regulatory Training Guidebook for the Towing Industry

This comprehensive book is a must have for anyone interested in understanding the myriad of training requirements for workboat mariners. It includes: a training summary, sample training matrix, training elements by position; the regulatory agency or organization requiring these elements; website links; as well as, frequency and duration of required training.

To reserve your copy today, email office@qsepublishing.com

New Workboat Book

“Healthy and Hearty Eats
Onboard the Vessel”



The Galley Chef was developed to provide mariners with the basic tools to safely create simple and nourishing meals onboard the vessel. Topics include: the importance of eating right and food quality; organization; storage; safe food handling and sanitation; personal hygiene; and, serving techniques. In addition, cooks from various workboats share some of their favorite recipes and ideas, including Premier Chef Captain Chris Starkenburg. Captain Starkenburg has and will delight crewmember palates with his delicious, yet easy recipes and meal planning suggestions for cooking onboard the vessel.

Whether you are an experienced cook or just starting off, you will enjoy reading, referencing and trying out the great recipes in this helpful book.

To order your copy of *The Galley Chef*, go on-line to www.qsepublishing.com.

You can pay by major credit card through Paypal and you don't need an account.

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

Teamwork

by Dione Lee

President - QSE Solutions



What makes a successful Safety Management System?

Teamwork. This simple concept is usually overlooked when implementing and maintaining safety management systems. It is overlooked when we create policies and procedures; it is overlooked when we develop job descriptions; it is overlooked when shoreside communicates to the vessels, and when the vessels communicate with shoreside; it is overlooked when we want to receive credit for a job well done; and, unfortunately it has been overlooked when we have to say an untimely goodbye to a fellow crewmember.

So, if teamwork is so simple, why is it overlooked? Do we run out of time to involve others; are our imaginations so great that we think we can visualize and write a procedure without involving those who perform the function; do we forget to get input from the people who are held accountable when assigning responsibility; do we only care about our efforts being recognized that we fail to recognize the contribution that others can make; and/or, do we think this one time we don't need anyone watching our backs as we perform a routine but somewhat hazardous task?



Starlight Marine ASD Tug, Z-Five

Safety management system elements have inherent communication processes that are all geared toward working as a team: management and master reviews; audits, defining levels of authority and lines of communication onboard and shoreside; and, non-conformity reporting for red-flagging when processes and systems break down or are no longer valid.

If you haven't adopted a team attitude already, try it. You might be amazed at how effortless and effective your safety management system will be.

QSE Solutions has partnered with individuals and organizations to implement customized quality, safety and environmental management and learning systems for 20 years. They have developed and fine tuned an integrated, innovative, and dynamic teamwork approach for bringing positive and sustainable change within organizational operating environments.

Washington's Workplace Smoking Ban

by Thomas G. Waller

RCW 70.160.030: "No person may smoke in a public place or in any place of employment."

It has been over two years since Washington voters (63% of them) approved Initiative 901. The law arising from the initiative amended the 1985 Clean Indoor Air Act and broadly prohibits smoking in "public places" and "places of employment." From a vessel perspective, only ferry, cruise and tour vessels likely constitute "public places." On the other hand, virtually every commercial vessel operating on Washington waters constitutes a "place of employment." I-901 thus applies to vessels operating on the lakes and rivers of Washington, Puget Sound and out to the three mile limit otherwise. Those operating vessels on Washington state waters should, in light of the law, consider adopting new policies, including modifying or supplementing employee handbooks, to correlate with Initiative 901.

A "place of employment" is defined broadly as "any area under the control of a public or private employer which employees are required to pass through during the course of

employment." This concept explicitly includes all work areas as well as all common areas. Smoking is further prohibited (or at least presumptively prohibited) within 25 feet of entrances, exits, windows that open and ventilation intakes. There is virtually no place on a conventional tug, barge, fishing vessel or other workboat that would not constitute a "place of employment."

I-901 contains no exemption for vessels. Thus, the only other ways to challenge the resulting law would be through concepts of federal preemption or constitutionality.

The anti-smoking law will almost certainly withstand any challenge on the basis of federal preemption. States may enact laws of local concern so long as they do not conflict with federal law or interfere with the uniform working of the maritime legal system. More specifically, federal law preempts state law only if (1) Congress expressly so states, (2) Congress enacts comprehensive laws that leave no room for additional state regulation, or (3) state law actually conflicts with federal law. Other areas that have found room for state



legislation of maritime matters (in Washington and elsewhere) include anti-discrimination and harassment, wage and overtime requirements and penalties, water quality (pollution prevention and response; ballast water), air quality (ventilation and emissions) and fuel (bio-diesel standards). As a general rule, state laws are not allowed to upset the federal maritime standards for vessel manning, crew licensing and documentation, navigation, construction and design. There is otherwise a strong presumption against a finding of preemption.

Not surprisingly, there is no federal statute or regulation expressly reserving indoor

spaces aboard workboats for recreational smoking. Locally, the Seattle MSO has told us that Washington's workplace smoking ban is a state law and outside Coast Guard jurisdiction. (There was a comment, though, that investigators would be involved if a crew member left his vessel or work station at a critical time simply to have a cigarette.) Seattle's OSHA office has stated simply it has no jurisdiction over state laws and would refer complaints or inquiries to the relevant state agency.

In the absence of federal authority allowing for smoking, there is no conflict between Washington's anti-smoking law and federal law and, thus, no federal preemption.

Congress has also left the issue of workplace smoking sufficiently open for states to enact their own laws on the topic. OSHA and the Coast Guard do regulate ignition sources (e.g., cigarettes) around flammable and explosive products, gasses and materials (including vehicles aboard ferries). OSHA also regulates potential occupational carcinogens. It has declined, however, to issue blanket anti-smoking regulations, as it has not yet sufficiently quantified the degree of risk. On the specific topic of smoking, federal regulations prohibit smoking in the presence of benzene,

asbestos, arsenic, lead and other toxins. Air quality regulations are otherwise limited mostly to ventilation standards. There is room enough for state legislation.

Would a Washington "place of employment" include a commercial vessel from Washington operating in Alaska? On the issue of discrimination and harassment, the answer is certainly yes. Washington's laws travel aboard Washington boats because, as courts have rationalized, the state has a "strong interest in protecting its citizens." Protecting Washington's citizens/seamen against second-hand smoke would seem to call for a similar outcome, though technically I-901 appears limited geographically to Washington waters.

The means and manner of enforcing the new law is still mostly unknown. Local law enforcement agencies (including the local health departments) are tasked with enforcing the law. Enforcement includes acting against persons smoking in unlawful places or destroying or defacing no-smoking signs. Enforcement may also go against employers and business operators who allow the smoking to continue. Will the law be an invitation to local police and health officials to board moored vessels or even vessels working on

inland waters? It seems unlikely, but only time will tell. The maximum civil fine is \$100 and each day constitutes a separate violation.

Under Washington law, smoking is prohibited in "public places" and "places of employment." It is increasingly prohibited, by local law, from parks, playfields and beaches. Smoking may someday be prohibited everywhere. The most prudent policy for Washington-based vessel operators is to act affirmatively and definitively by prohibiting all smoking aboard their vessels¹.

¹ *Objections have inevitably been raised, and will continue to be raised, by habitual smokers on extended sea passages. Alcohol consumption was once a seagoing right, ritual and institution.*

Tom Waller practices maritime law in Seattle with Bauer Moynihan & Johnson, LLP.



Safety Pearls Of Wisdom From A Seasoned Mariner

by Captain Doug Myers

Safety: What is your objective? How can you achieve it safely?

I would like to pass on some words of wisdom from my point of view about keeping yourself safe while at work.

- **Securely stow things**

Knowing they could not shift in bad weather could very well reduce the risk of injury to someone trying to correctly stow a loose item or personnel trying to do corrective stowage of some item that got loose.

- **Clear pathways**

A person may twist or worse yet break ankles, fingers etcetera if they fall.

- **Wear floatation jackets**

You never plan to fall into the water, when it happens you may break an arm or leg, or worse be knocked unconscious.

- **Hard hats will crack first**

If you do happen to be the person that has something fall onto your hard hat you can thank your diligents that you had it on! It will crack or split off your head as it rips your shoulder or hand off but you will still have enough brains to know that your shoulder or hand hurts like hell!

- **Who are you working with?**

Get to know the people your working around. Are they doing it safely? Accident prone? Agile, Alert and Safety conscious? Knowing this could make or break how you work with someone. Are they watching your back and are you watching their back?

- **Acknowledge your state of mind**

Either you feel good or you're feeling sick or there might be some personal problems. These will affect the way you deal with work and can affect the

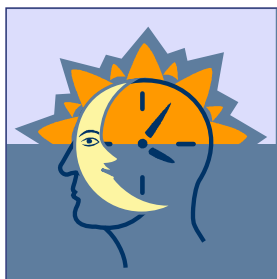
safety of yourself and others around you! Act on this to insure you and others around stay safe; tell your coworkers. It very well may be a bad day for you and you need to be extra careful in what you do. When you or anyone else gets hurt there is a ripple affect and it changes everything!

- **Analyze everything you are doing**

Make mental notes of potential safety issues and act on your instincts! Point safety issues out! Know your capabilities! Know that when avoiding a safety issue, "Time Spent" always wins over "Quickness". Be careful out there because I need you healthy and unhurt! Hey look at this from your point of view for a minute. Um, I'm hurt...can't work...no money...can't play, because I don't have any money... because I'm hurt. That's no good either way you look at it, we need you and you need you! I hate to say it but your Captain is "not perfect" and will only be able to keep things together if every one keeps serious about safety, we work together on this! Protect yourself first and then others around you. You're no help to anyone hurt. Use safe working practices. Time always seasons a person as to what they see as a potential safety issue; know this that if you just started in this industry you can't possibly recognize all of the risks! Inquire about things from the "Old Timers"! How to...What if...etc.?

Be safe, be careful, and be aware. The above should achieve this for you!

If you have something you would like to share with other crewmembers or questions you would like answered to ensure safe voyages, this is the forum. Please submit your thoughts or questions to office@qsepublishing.com. In the subject header type: Mariner's Forum. Thank you



The following excerpt is from the “Crew Endurance Management System Awareness Workbook”, Pacific Marine Towing Industry Partners 2007

The Importance of Sleep

The average person needs eight hours of uninterrupted sleep each night to achieve peak performance. That’s one hour of rest for every two hours that you’re awake. When you don’t receive enough sleep, your cognitive abilities become impaired, which can place you at risk on the job. That’s because sleep deprivation causes:

- Drowsiness
- Feelings of being overwhelmed
- Lack of motivation
- Unconscious slips into brief or long periods of sleep
- Reduced ability to handle complex tasks
- Reduction in speed
- Inability to make decisions or think logically or critically
- Memory impairment
- Reduced motor skills and coordination

Causes of Sleep Deprivation

Sleep deprivation can be caused by:

- The quality of sleep—Noise and vibration can prevent crew members from receiving the deep sleep required to rejuvenate the body and boost energy production.
- Sleep fragmentation—Getting regular sleep through shorter periods, such as napping, doesn’t allow the brain and body enough time to rejuvenate fully. As a result, the body and mind are not prepared for optimal performance during the work shift.
- Circadian rhythms—Your physical and psychological functions follow a rhythmic pattern, which typically coincides with the hours of daylight. Melatonin, the hormone that makes you sleepy, is suppressed during daylight hours and increases in darkness. Crews assigned to the night shift often encounter circadian inversion, because their bodies want to sleep when they’re scheduled to work.
- Irregular hours—Constant changes in crew members’ work schedules can inhibit sleep, because their circadian rhythms are disrupted. The effects are similar to jetlag.
- Extended work hours—Extended work hours are longer than eight hours in a day or 40 hours in a week. Studies have indicated that shifts of nine hours or more increase injuries, fatigue, health problems,

and errors. Other consequences include decreased alertness, slower response times, reduced cognitive abilities, less energy to exercise, and the inability to plan and prioritize.

Tips for Improving Sleep

- From seven to eight hours of sleep is recommended. If this isn't possible, your goal should be to sleep at least six hours each day.
- If you can't sleep seven or eight hours, compensate with daily naps of up to 90 minutes. Allow 15 minutes between your nap and returning to work to avoid grogginess, disorientation, or sleep inertia. (Exception: Don't nap if you have trouble sleeping during your normal sleep period.)
- Sleep on a comfortable surface in dark surroundings.
- Sleep in the same place every day and wear the usual sleep clothing. Developing such habits will allow sleep to come more easily.
- If you can't fall asleep after 30 minutes in bed, get up for awhile before trying to sleep again.
- Exercise at least one hour before bedtime.
- If you work the night shift, make sure you're exposed to bright light during your shift to boost your energy levels.
- Don't drink any caffeinated beverages or take medications containing caffeine four hours before bedtime.

Sleep is essential for improving your energy levels, as well as maintaining a healthy diet. Food is converted into fuel, which produces energy.

The Beauty of Sleep

A good night's sleep helps replenish the energy needed to achieve peak performance on the job. For the average person, this equates to eight hours of uninterrupted rest every day.

Cooking with the Captain



Classes Starting April 2008

Classes for Deckhand/Cooks will be presented by Pacific Culinary Studio located in Everett, Washington

Premier Chef Captain Chris Starkenburg, featured in The Galley Chef will be the lead instructor for three different class offerings for you to choose from:

4 Hr Cooking Basics Onboard the Vessel

The studio can accommodate up to 30 students where Captain Chris will explain and show recipe preparation and cooking techniques. Generous samples of all that is demonstrated are plated and served to participants.

1 Day and 2 Day Hands-on Classes

The studio can accommodate up to 15-20 students for a hands-on experience. This team building exercise will include topics such as meal planning, purchasing, preparing, serving, food safety and sanitation onboard the vessel. Students will be able to enjoy the food they prepare.

Call Leslie Lightner - Director, Pacific Culinary Studio at 425-231-9239 for more information.

Vessel Accidents and Losses

by Mike Doyle

Trident Marine Associates, LLC
Marine Surveyors and Consultants
Tacoma, WA

Vessels are lost when they sink, burn, collide with each other, or become wrecks on a beach. A vessel loses its ability to protect the crew from the sea when it becomes more dangerous for the crew to remain on board than to abandon ship.

The causes of vessel accidents can be a very a complex issue because of an almost universal combination of human and technical factors. Very few accidents are caused by a single negative event; they are nearly always the result of several negative events coming together to create the situation for the accident to happen. Each negative event may also have several contributing negative factors that when taken separately, may be of little consequence, and when compounded, may become very serious.



“While no vessel can ever be regarded as unsinkable, it should be capable of absorbing a number of errors and misfortunes before there is danger of sinking.”

Statement of the Royal Institution of
Naval Architects (UK) Seatrader Review,
Pg 7 (December 1997)

To illustrate the compounding nature of emergencies, the following casualty is typical and offered for consideration:

A main engine cooling line fails at a worn out, 3-inch diameter flexible coupling, and sea water floods into the engine room, the bilge alarm does not activate, and the deck boss notices water above the deck-plates when he grabbed his rain gear from the engine room entry. The deck crew is unsure where the sea valve is located but they do start the bilge pump. By the time the captain gets below and locates the sea valve, the water has risen half way between the deck plates and the generator, and is still rising despite the bilge pump running and the sea valve closed. The bilge suction strainer is opened out and found to be clogged with wire ties, a plastic bag and sea-grass. The water continues to rise, and the captain determines that the sea valve is not closing completely. The water eventually shorts out the generator and the vessel loses electricity including the bilge pump. However, the main engine is still running and the captain heads for the beach, 8-miles away.

The captain orders the gas-powered pump to be set-up, but finds that the suction hose is missing and the pump had not run for the past year. 4-miles from the beach, the main engine dies. The captain feels that the vessel will not sink since the engine room is fitted with watertight bulkheads and the weather is good. His emergency power system is working properly and he has been in radio contact with a vessel 2 hours away.

Suddenly, he remembers that the owner had recently upgraded the steering hydraulics, and the new piping installation passed through an open cut-out in the engine room/lazarette bulkhead. Over the next 30 minutes, as the stern settles into the water, he feels that since the forward engine room bulkhead isn't leaking, the bow section of the vessel should keep them afloat until the other vessel arrives. He has the crew muster on deck with their immersion suits; they inflate the liferaft and secure it alongside. They gather spare equipment and standby.

The crews' misfortunes continue when they notice the water washing against the openings for the forward compartment's ventilation; they close the covers, but notice the gaskets are worn; the cover is bent and not stopping the water completely. Over the next hour, the bow settles lower in the water, and just as the rescue vessel appears on the horizon, the vessel slowly capsizes.

In the preceding example, the following conditions were significant factors:

Factor	Lesson Learned
Coupling Failure	Flexible couplings are easily inspected for condition, such as, drying out, cracks, hardness, softness, etc. Hose-type couplings should be double clamped. High-quality materials.
Bilge Alarm Failure	Bilge alarms are easily tested and early indication of flooding would have provided crew more time to deal with flooding while it was still manageable.
Sea Valve Location	Crew needs to be aware of the location and operation of all critical equipment. Immediate closure of the valve would have slowed flooding and provided the crew more time to deal with the subsequent negative factors.
Bilge/Strainer Condition	The bilges and/or the strainer, were dirty which limited the capacity of the pump to dewater the space.
Sea Valve Condition	The sea valve did not completely seal and the ingress of sea water could not be slowed to a manageable level.
Emergency Pump Condition	The emergency pump was not ready for use.
Bulkhead Integrity Failure	The improper (open) installation of the penetration allowed the flooding to become progressive and displace additional buoyancy.
Down Flooding	A simple gasket and bent cover may have ultimately caused the loss of the vessel and exposed the crew to the hazards of abandoning the vessel.

While dramatic, the example is very plausible, common to the industry, and illustrates effectively how a combination of negative factors results in a vessel loss. The significant point of the example is that virtually all negative technical factors are identifiable, and can be eliminated by a dedication to maintenance and periodic inspection. Negative human factors may be a more difficult issue, and those factors may be minimized with training, awareness, and sound operating practices, including oversight by experienced personnel.

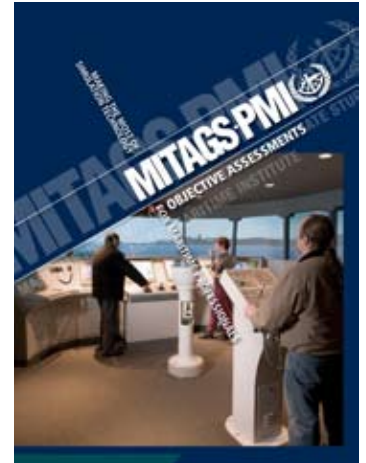


Navigation Skills Assessment Program

With its innovative Navigation Skills Assessment Program, the Pacific Maritime Institute (PMI) is “Bridging the Gaps”. By using custom simulation scenarios and assessment criteria based on a company’s defined knowledge and skill requirements, PMI objectively measures the mariner’s performance. The results: knowledge and skill gaps are identified and recommendations are made.

Areas assessed during simulation include:

- COLREGS or Rules of the Road
- Situational Awareness
- Bridge Resource Management
- Company Policies and Procedures
- Communication
- Systems



Performance at each measurement point is rated: Highly Effective; Effective; Not Effective; and, in some cases Unsafe. Using a numerical point scale, PMI compares performance between individuals and determines a standard of acceptance.

A comprehensive report is generated at the end of each assessment session for review purposes. This report includes the evaluator(s) observations and comments for each attendee and general recommendations that address the individual’s knowledge and skill gaps. Observations and recommendations may include further training or implementation of additional company policies and procedures.

PMI’s Navigation Skills Assessment Program provides a safe and meaningful experience for mariners to improve on their performance, especially if the company has recently experienced an incident. “Bridging the Gaps” is part of the corrective/preventive action process for continual improvement. This solution is not inexpensive; it is labor and resource intensive; however, the results have been extraordinarily successful.

For more information about this program, contact at (206) 719-2801 or gtrunnell@mates.org.

PMI Incorporates the SAIL System™

“Set High Standards for Performance then Build Teamwork to meet those Standards”
-Wesley K. Clark, A Time to Lead: For Duty, Honor and Country

The SAIL (Seamanship Assessment Integrated Learning) System™ co-developed by Captain Jeff Slesinger and QSE Solutions as a set of semi-custom tools for Companies to implement onboard learning and objective measurement criteria will be incorporated into PMI's Workboat AB program. After 3 years of development and trial implementation at Western Towboat Company, the SAIL System has proven itself to be a robust and practical solution to recruitment and retention, as well as meeting AWO RCP proficiency evaluation, and personnel development requirements.

These proven tools include a position specific learning guide; assessments, based on Company standards of competence; and, recordkeeping book. The SAIL System™ also provides a Mentor / Assessor Program, The MAP™, to effectively implement the SAIL System™ within a Company.

Collectively, the developers have over 45 years experience in the Marine Towing Industry as leaders, instructors, writers and innovative safety management system consultants. “Together with PMI's expertise in “fast track” academic apprenticeship programs, we can offer the industry a practical and effective solution for ensuring qualified personnel and standards of excellence in the maritime industry.”



Contact QSE Partners at (425) 788-2713 or email office@qsepartners.com for further information on how the SAIL System™ can benefit your Company.