

Tug and Tank Barge Underway Operations

OVERVIEW

Ecology makes recommendations to individual tug and tank barge companies to ensure safer operations following unique incidents. The following is a summary of recommendations, sorted by incident type. Although, the recommendations are based on specific circumstances, other operators are encouraged to review them in order to learn lessons from incidents.

BROKEN TOW WIRE INCIDENTS

- Ensure that your tug captains complete a voyage plan prior to undertaking a voyage.
- Ensure that your policies/procedures regarding the completion of a voyage plan and voyage planning checklist are followed by tug crews.
- Ensure that your policies/procedures regarding log book entries are followed by tug crews.
- Consider including spot checks for compliance with voyage planning and log book entry policies/procedures during management visits to your tow vessels.
- Ensure voyage planning includes consideration of secondary effects of bad weather, such as backed-up traffic at harbor entrances and the low probability of assistance from other vessels.
- Review company procedures for documenting tow wire maintenance and condition.

WHY THIS MATTERS

The Washington State legislature has established a “zero spills” goal. Ecology investigates oil spills and incidents and determines what went wrong, why, and what can be done to prevent them from happening again. Ecology is sharing these recommendations for prevention so that tug and tank barge operators can incorporate them in their day to day operations and prevent oil spills.”

CONTACT INFORMATION

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Broken tow wire section from an incident involving a drifting tank barge.

- Ensure the form used for documenting tow wire maintenance and condition follows company guidelines, and provide additional training to improve the consistency of maintenance notations and of observations of tow wire condition.
- Review your policies/procedures for tow wire inspection and maintenance against requirements of the U.S. Coast Guard Navigation and Vessel Inspection Circular (NVIC) 5-92, "Guidelines for Wire Rope Towing Hawsers."
 - Ensure that all elements of NVIC 5-92 are covered.
- Develop policies/procedures requiring a full investigation into the causes of broken tow wires, including the use of expert analysis for post-incident wire examination.
 - Ensure lessons-learned are incorporated into your tow wire inspection and maintenance procedures.
- Review your document control procedures to ensure that all manuals and guidelines are up-to-date and that outdated copies are discarded.
- Review your tow wire inspection and maintenance procedures to ensure they adequately inform the tug captain of his duties, and give him the authority to take action to ensure safe tow wire performance.
- Create emergency barge retrieval policies and procedures that are as realistic as possible.
- Review your procedures regarding voyage planning and go/no-go decisions for coastal transits involving laden tank barges.
 - Ensure that sufficient consideration is given to weather forecasts in voyage planning and that your tug captains have adequate support and guidance for making a go/no-go decision based on forecasted weather conditions.
- Inspect the stern arrangements of your tugboats with your tugs' crews and, if possible, your wire rope supplier.
 - Tugs towing tank barges should be a priority.
 - Inventory points at which tow wire damage is most likely to occur and take corrective action to mitigate or eliminate those hazards.
- Examine your inspection and maintenance program for towing surfaces and towing gear upon which the taut tow wire lays.
 - Ensure that your inspection and maintenance program requires that the surfaces bearing the taut tow wire are kept smooth.
 - Ensure that all tow wire bearing equipment, such as stern rollers, operates as designed.

GROUNDING INCIDENTS

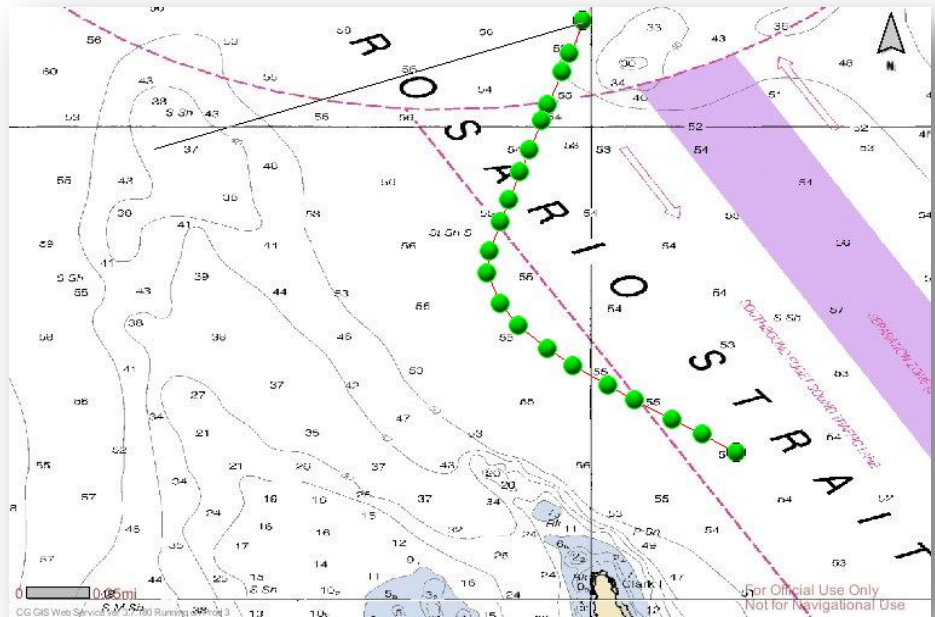
- Review your navigational procedures concerning the plotting of track lines and fixes and the effective use of navigational equipment. Navigational procedures should include the use of the "best scale" charts for the area to be navigated.

- Develop a system of spot-checking your tug crews for attention to company policies and procedures for log books and charts (paper and electronic). Log books should be checked. Positional information should be reviewed for track lines and fixes.
- Ensure that your navigational procedures provide adequate guidance regarding the prudent use of track lines for voyage planning, and of appropriate fix intervals under varying conditions (for instance, proximity to shoal water, traffic density, tidal current, visibility).
- Develop procedures to monitor wind forecasts in addition to current winds to determine better timing of local wind changes before committing to transits of narrow or hazardous waterways.
- Undertake an inventory of critical deck equipment aboard your tugs and ensure that your planned inspection and maintenance program adequately addresses each piece of equipment identified as required by Section 10 of the International Safety Management (ISM) Code.

OTHER INCIDENTS

- Ensure your marine operations manual requires that a qualified navigation watch stander needs to be present in the tug's wheelhouse at all times while underway.
- If your company/organization does not explicitly address mobile phone use (for voice, text messaging, or games) in your operations manual or standard operating procedures, modify the manual/procedures to establish rules for mobile phone use by on-duty personnel. The rules should, at a minimum:
 1. Restrict mobile phone use by on-duty personnel to operations-related calls.
 2. Set time limits for those calls – those limits should allow only brief, important conversations.
 3. Identify locations and circumstances when on-duty mobile phone calls are permitted, or are not permitted. Choose the best approach for your operation.
 4. Outline procedures for on-duty personnel to get relief should they receive a personal mobile phone call of an emergency nature.
- If your marine operations manual does not require a formal face-to-face handoff between off-going and on-coming Masters and Chief Engineers, modify it to include the requirement and to specify required points of discussion.
- Develop criteria and procedures for use by your tug operators when they are approaching a berth with a tank barge under less-than-ideal environmental conditions.

Plot of the tug with tank barge's position at one-minute intervals. The tug exited the traffic lanes and could not immediately be contacted by Puget Sound Vessel Traffic Service (PSVTS) on the radio. The tug's operator was below getting coffee and engaged in conversation. [plot courtesy of PSVTS, USCG]



Damaged caused to the hull of a single-skinned tank barge as the result of hard contact between the tug and barge during berthing in rough weather. Oil leaked from the fracture upon loading the barge.

FOR MORE INFORMATION, CONTACT:

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MORE SAFETY ADVISORY BULLETINS

- SAB 09-02:** Mobile Phone Use and Marine Operations (09-08-017)
- SAB 09-01:** Vessel Fueling Spills (09-08-010)
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- SAB 06-01:** Automatic Identification Systems (AIS) (06-08-010)
- SAB 00-01:** The Importance of Identifying and Addressing Root Causes of Equipment Malfunctions (00-08-015)
- SAB 99-02:** Passage Planning for the Oregon and Washington Coasts: Special Considerations (99-256)
- SAB 99-01:** Traffic Separation Scheme and Puget Sound Vessel Traffic Service (99-253)
- SAB 98-01:** Shipboard Systems Modifications (98-252)
- SAB 97-01:** Deep Water Anchoring (00-08-004)
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- SAB 94-03:** Piston Crown Maintenance (00-08-006)
- SAB 94-02:** Importance of Preventative Maintenance (00-08-007)
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