

# AWO Falls Overboard Report

2025 Combined Regions Annual  
and Safety Meeting  
February 19, 2025



**The American  
Waterways Operators**

*The Tugboat, Towboat & Barge Industry Association*



# Background

- USCG and AWO addressing crew fatalities since 1995
- Quality Action Team (QAT) on Reducing Fall-Overboard Crew Fatalities chartered in 2011
- First report on Reducing Fall-Overboard Crew Fatalities published in 2012
- Falls Overboard Subcommittee (FOB) chartered in 2022
- 2012-2022 survey collected data for 79 incidents
- 2022-2024 survey collected data on barrier efficacy installed/tested on barges to control unguarded edge falls

# Data Overview

- 119 incidents recorded
- Falls from barges accounted for 69% of incidents (19% from tug/push boats, 6% from skiffs, and 6% from gangway/dock)
- Falls occur in daytime hours (58.5%), more than at night (39%)
- Deckhands most likely to fall overboard (68% of incidents)
- Greatest contributing factor was slip, trip and fall events (59%), followed by lack of awareness/distraction (12%)



# Analysis

- Report presents risk management strategies designed to eliminate/reduce risk of falling overboard from unguarded edge of barge
- Methods organized according to effectiveness using a Hierarchy of Controls with “Design Mitigation” level for engineering controls that mitigate but do not eliminate risk
- Report considers controls to protect against unguarded edge of unmanned barge

# Elimination or Substitution

## Controls

THREAT	BARRIER	BARRIER EFFECT
<b>Walking barges</b>  <i>or</i> <b>Fleeting barges</b>  <i>or</i> <b>Building tow</b>	Walk the gunnel	Eliminates access to unguarded edges by substituting decks with an unprotected edge for paths on the interior of a tow where deck crew can walk between barges already fixed together.
	DOUBLE SKIN 29 Add a safety barge	Eliminates access to unguarded edges by covering the outside edge of the barge where work is being done with an 'extra' barge where no work is done.
	Stage the tug on the outside of couplings	Eliminates access to unguarded edges of barges where work is being done by covering that edge with the boat.



# Elimination or Substitution

## Controls

THREAT	BARRIER	BARRIER EFFECT
	Use Land-Based Workers for Locking	Substitutes crew working on deck for crew working on land, eliminating access to unguarded edge by vessel crew.
Tankering  or  Surveying	Use Remote Devices for Drafting	Substitutes workers leaning over edge with machine readings, eliminating workers from accessing edge for surveys or drafts.
	Use davits or cranes to transfer hoses from terminal to barge	Substitutes workers passing hoses across barge edge with a davit arm or crane being used to pass gear instead.
Cover Handling	Use Automated / Remote Control Cover Handlers	Eliminates crew accessing the edge of a barge during cover operations by substituting a crane and bridle to hook up to and move covers instead.

# Engineering Controls

THREAT	BARRIER	BARRIER EFFECT
<b>Walking Barges</b>  <i>or</i> <b>Fleeting Barges</b>  <i>or</i> <b>Building Tow</b>	Install permanent or temporary guardrails, handrails, barriers, or bulwarks on barge perimeter.	Protects access to the hazard of an unguarded edge by placing a barrier between worker and edge.
	Install Restraint System	Permanent or temporary restraint systems anchored and sized at a length that limits access to an unguarded edge and prevents a loss of control.



# Design Mitigation

THREAT	BARRIER	BARRIER EFFECT
Tow  or  Fleet Work Facing up	Handholds	Handholds allow crew to grab on to barge if they experience a loss of control near an unguarded edge.
or  Headlining	DOUBLE SKIN 29 Capstan on Vessel to Limit Use of Face Wires	Capstans allow center-level ties from the tug to the barge, preventing crew from using face wires fixed on corners near unguarded edges of the barge.
Deck Appliance  and  Equipment	Strategic Positioning of Deck Appliances Such as D-Rings & Kevels	Deck appliances installed strategically to minimize overlap with walking and working surfaces reduce risk of trip and fall incidents that lead to loss of control at an unguarded edge.
	Deck Appliances with Leverage Assist	Deck Appliances with leverage assist features reduce force necessary to tighten & install rigging.
	Install Deck Appliances that Tighten Inboard	Tightening appliances by applying force inboard prevents crew from directing body force toward the outside edge when tightening rigging.



# Design Mitigation

THREAT	BARRIER	BARRIER EFFECT
Deck Surface	Install Flush Hatch Covers	Flush hatch covers instead of raised hatches reduce risk of trips near an unguarded edge.
	Install Non-Slip Grip on Deck	Non-slip deck coatings mitigate risk of slips, reducing loss of control near the edge of a barge.
Deck Appliance <i>and</i> Equipment	Install Draft Monitor in Center of Barge	Depth sensors and sounding devices in the middle of the barge allow safe monitoring of barge depth without requiring crew to be near an unguarded edge to check depth when traversing shallow waterways.
Locking	Pre-Stage Bumpers and Lines	Eliminates crew walking unguarded edge of barges to put out bumpers & lines by substituting the boat to deliver gear to head & stern of barges.

# Administrative Controls

THREAT	BARRIER	BARRIER EFFECT
<b>Walking Barges</b>  <b>or</b>  <b>Fleeting Barges</b>  <b>or</b>  <b>Building Tow</b>	Housekeeping	Requiring walkways to be clear of obstructions & cargo on the deck reduces the risk of slips, trips, and loss of control.
	Communicating Hazards	Detecting, communicating, and marking duck ponds and other fall-overboard hazards in barge tows prevents loss of control.
	Highlighting Edges and Corners	Requiring edges and tips of deck appliances to be painted with high-visibility paint draws attention to tripping hazards caused by deck appliances and bits and the deck edge, mitigating the risk of trips and loss of control.
	Installing Deck Lights	Illuminating decks reveal barge hazards, reducing risk of slips, trips and falls near unguarded edges.
	Removing Cargo or Ice from Deck	Require de-icing or removal of slippery cargo on deck before allowing crew access to prevent slips and loss of control near unguarded edges.
	Walk on top of barge covers	Mitigates risk of access to unguarded edges by moving crew to the middle of a barge.



# Administrative Controls

THREAT	BARRIER	BARRIER EFFECT
Tools  and  Ladders	Using Lighter Rigging or Tools	Lighter rigging reduces the amount of force needed to tighten or loosen wires and ropes, preventing a loss of balance and body control near an unguarded edge.
	Setup Portable Ladders at Center of Barge	Placing portable ladders in the center of a barge, set them up in the center of the barge and secure them properly - far away from unguarded edges.
	Utilizing Ladder Extensions	Ladders extending 36 inches above the deck or more provide handholds for crews climbing to higher-level decks, preventing loss of control.
	Using grab bars on top deck for pigeonhole ladders	Pigeonhole ladders end at deck level. Providing a strap or grab rail provides the crew with a handhold to prevent loss of control at the upper deck level.
	Marking steps on pigeonhole ladders	Marking the first step or all steps to provide better visibility & reduce risk of slips, trips, & falls.
Ergonomics	Use Tool Baskets	Lift and carry hand tools using ropes and buckets, or pre-stage tools using the vessel to put tools where they are needed, ensuring the crew has two free hands.

# Administrative Controls

THREAT	BARRIER	BARRIER EFFECT
<b>Facing Up</b>  <i>and</i>  <b>Headlining</b>	Using Headlines or Hiplites instead of Face Wires	Using headlines or hiplites to move barges from midstream locations to a fleet or dock prevents crew from facing up until at least one edge is protected.
<b>Human Factors</b>  <i>and</i>  <b>Training</b>  <i>and</i>  <b>Lack of Situational Awareness</b>	DOUBLE SKIN 29 Training for Facing-up	Training crew on proper facing and un-facing methods may prevent mistakes and loss of control.
	Training to Raise Awareness of Risk of Fatigue and Distraction	Recognizing and mitigating factors affecting performance including crew endurance and situational awareness can reduce loss of control when working in proximity to an unguarded edge.
	Educating on Physical and Mental Wellness	Training on physical and mental wellness can prevent loss of body control due to physical or mental factors.
	Training on Risk of Mind-Altering Substances	Training on the importance of avoiding mind-altering substances, such as drugs, alcohol, caffeine, and certain OTC medications can prevent inebriation and loss of control.



# Personal Protective Equipment

THREAT	BARRIER	BARRIER EFFECT
Walking Barges or Fleeting Barges or Building Tow	Fall Restraint System with Harness & Shock Absorbing Lanyard	Prevents workers from moving further than the length of the lanyard, preventing falls from an unguarded edge beyond safe working length, calculated by adding lanyard length and shock pack length. May be used with a keyway system on the barge perimeter or with static anchor points at work locations.
	Fall Restraint with Belt & Tether	Prevents workers from moving further than the length of the tether to prevent falling from an unguarded edge. May also be called a “positioning device” or “positioning system.”
	Positioning System with Belay Device	Prevents workers from moving further than the safe working length to prevent falling from unguarded edges. (SWL = horizontal line & tether line length + deflection).
	Visual Edge Alert System	Alerts workers when they move too close to the edge using a perimeter cable with flags or ribbons tied to it.

# Personal Protective Equipment

THREAT	BARRIER	BARRIER EFFECT
<b>Walking Barges</b>  <b>or</b> <b>Fleeting Barges</b>  <b>or</b> <b>Building Tow</b>	Haptic or Audible Feedback Device	Alerts workers when they move too close to the edge with an audible alert or haptic feedback (vibrating device) that continues to alert until the worker has moved to a safe distance away from the edge.
<b>Barge Cleaning &amp; Repair</b>	Horizontal Lifeline and Personal Fall Restraint or Arrest Device	Horizontal lines run across the hopper or covers on the longitudinal center span of a barge to allow one or more workers to hook into using a carabiner, shock-absorbing lanyard or self-retracting lanyard (SRL) and harness, preventing falls from an unguarded edge outside of safe working length, calculated by adding lanyard length and shock pack or SRL length.



# New Barge Construction

## Opportunities

THREAT	BARRIER	BARRIER EFFECT
Hull Design	Raised Trunk & Coaming Wall Design	Building shorter coaming walls and designing diagonal corners can provide extra working room for deck crew to work, preventing accidental contact with vertical structures and loss of control near an unguarded edge.
Hull Design	Increased Walkway Width	Increasing walkway width can provide crew with more room to work and prevent contact with structures that can lead to loss of control.
	Flat Deck Barges	Flat deck barges with closed cargo holds below deck level can allow ample room for deck crews.
	Moving Working Areas Inboard	Moving manifold connection areas, gauge trees, cargo tank access, deck appliances, and other barge equipment inboard allows workers to stay away from unguarded edges.
	Guard Rails or Bulwarks	Installing Guard Rails or Bulwarks on barges is not common for inland barges. If suited for purposes, including these structures in new barge designs will eliminate the hazard of an unguarded edge.
Technology	Remote Monitoring	Remote drafting and gauging devices can prevent crew from requiring access to the edge of a barge, eliminating the risk of falls from an unguarded edge.