

Current State of Maritime Safety:

A look into the Passenger Ferry & Towing Industries

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Hornblower Statue Cruises | NYC Ferry



Outline

- Traditional Safety
- New trends in Maritime Safety
- Controls
- Case Studies & Lessons Learned



Background

- Regional Director, HSSQE (Hornblower)
- TVIB Sub M TSMS Lead Auditor
- 20 years plus of Maritime Experience
- Multiple sectors of maritime industry
- SUNY Maritime College Alumnus
- BS, Marine Transportation
- Masters, International Transportation Management
- Master 100GT Near Coastal License
- 3rd Mate Unlimited Oceans License
- Management System Auditor (ISO, ISM, TSMS)
- PVA Regulatory Committee
- USCG AMSC Board of Directors
- Marine News | Maritime Reporter | Foghorn Magazine Contributor



Traditional Safety

United States Coast Guard oversight & federal regulations, including inspections.

46 CFR Subchapter T

- Less than 100 GT
- ($x < 150$ pax)

46 CFR Subchapter K

- Less than 100 GT
- $X > 150$ pax
- Overnight accommodations ($X > 49$ pax)

46 CFR Subchapter H

- More than 100 GT

46 CFR Subchapter M

- Tugboat & Towing Vessels (Since July 20, 2016)



Slips, Trips & Falls

Slips, trips and falls are a major cause of workplace injuries. Unsafe conditions and behaviors, along with a lack of safety awareness, can lead to these types of accidents.



SLIPS, TRIPS & FALLS:
15% of all accidents*

SLIPS, TRIPS & FALLS
on the same level are the
2nd LEADING
CAUSE OF
INJURY**

25,000
SLIP, TRIP & FALL
ACCIDENTS occur **DAILY**
in the US*

* National Safety Council ** Bureau of Labor Statistics



Back & Other Injuries

- A general crew claim with a minor injury and the crewmember goes to a reputable doctor can be resolved in the area of \$10k to \$20k.
- A general crew claim with a minor injury and the crewmember goes to a doctor that milks the injury can cost upwards of \$50k to \$100k.
- A no liability passenger claim that gets an attorney can cost the vessel \$200k to \$500k in investigation and defense costs.
- A no liability passenger claim that is just looking for out of pocket medicals is usually resolved in the area of 5k to 10k.



Fire & Boat Drills

Monthly Drill Requirements:

- Fire
- Man Overboard
- Abandon Ship

Quarterly Drill Requirements:

- Security
- *Discussions on new topic
- Spill Response



Safety Equipment

- Emergency Communications
- Life Jackets
- Ring Buoys
- Survival Craft
- Fire Protection
- Others



Impacts to Environment

In 2018, US imported **9.94 million barrels per day** of petroleum: Crude oil, gasoline, diesel fuel, ethanol.

- Clean Waters Act
- MARPOL
- EPA Vessel General Permit (VGP)
- Vessel Incidental Discharge Act (VIDA)



DISCHARGE OIL PROHIBITED

THE FEDERAL WATER POLLUTION CONTROL ACT
PROHIBITS THE DISCHARGE OF OIL OR OILY WASTE INTO OR UPON THE NAVIGABLE WATERS OF THE UNITED STATES, OR THE WATERS OF THE CONTIGUOUS ZONE, OR WHICH MAY AFFECT NATURAL RESOURCES BELONGING TO, APPERTAINING TO, OR UNDER THE EXCLUSIVE MANAGEMENT AUTHORITY OF THE UNITED STATES, IF SUCH DISCHARGE CAUSES A FILM OR DISCOLORATION OF THE SURFACE OF THE WATER OR CAUSES A SLUDGE OR EMULSION BENEATH THE SURFACE OF THE WATER. VIOLATORS ARE SUBJECT TO SUBSTANTIAL CIVIL PENALTIES AND/OR CRIMINAL SANCTIONS INCLUDING FINES AND IMPRISONMENT.

Report all discharges to the
National Response Center at 1-800-424-8802
or to your local U.S. Coast Guard office
by phone or VHF radio, Channel 16.



Trending Upward: Risks & Exposures



Trending Upward: Risks & Exposures

- Navigational Risks
- Personal Electronic Devices (PED)
- Public Relations / Social Media
- Drones
- Cyber Security
- Fatigue
- Distractions
- Active Shooter / Active Threat



Navigational Risks

- Navigational Risks
 - Increase Waterway Use
 - Human-powered Vessels
 - Kayaks
 - Paddle boarders
 - “bicycle-boats”
 - Jet Skis
 - Illegal Charters



Personal Electronic Devices

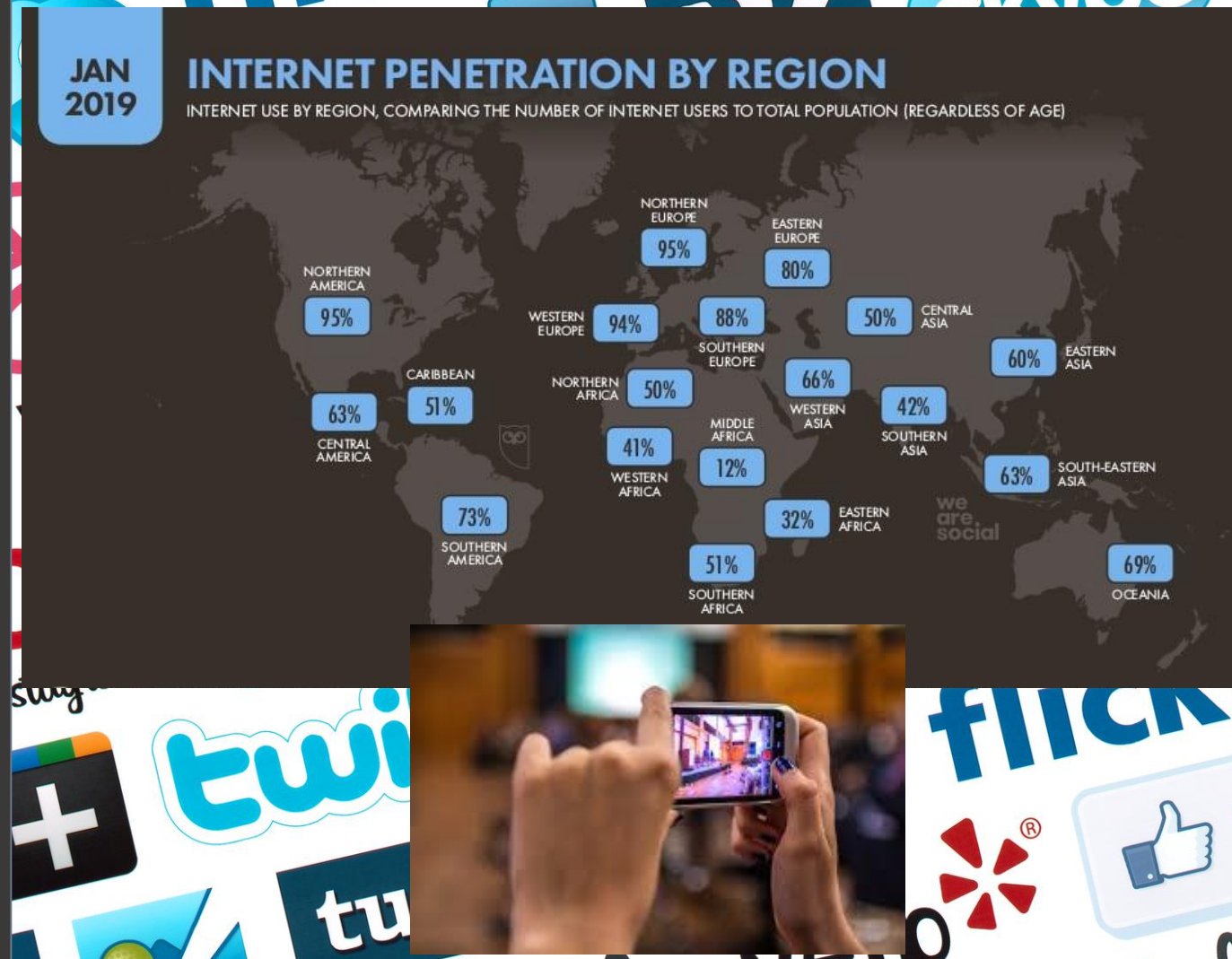
- Personal Electronic Devices (PED)
- Communications (Internal & External)
 - Texting
 - Talking
 - Face Time / Video Feed
- Technology-based advances:
 - Navigation Program / E-Charts
 - Reporting
 - Camera use
 - Online SMS



Public Relations / Social Media

- The number of internet users worldwide in 2019 is 4.388 billion, up 9.1% year-on-year.
- The number of social media users worldwide in 2019 is 3.484 billion, up 9% year-on-year.
- The number of mobile phone users in 2019 is 5.112 billion, up 2% year-on-year.

Statistics provided by Smart Insights.



Drones / Unmanned Aerial Vehicles

- 2019, expected sales of \$ 1.6 billion
- The FAA says the commercial drone market could triple in size by 2023
- UPS & CVS Pharmacies to test drone delivery for medications and medical supplies
- Photography
- Spill Response
- Navigational Review
- Drone strikes, homemade IEDs, kamikaze drones (Taiwan)



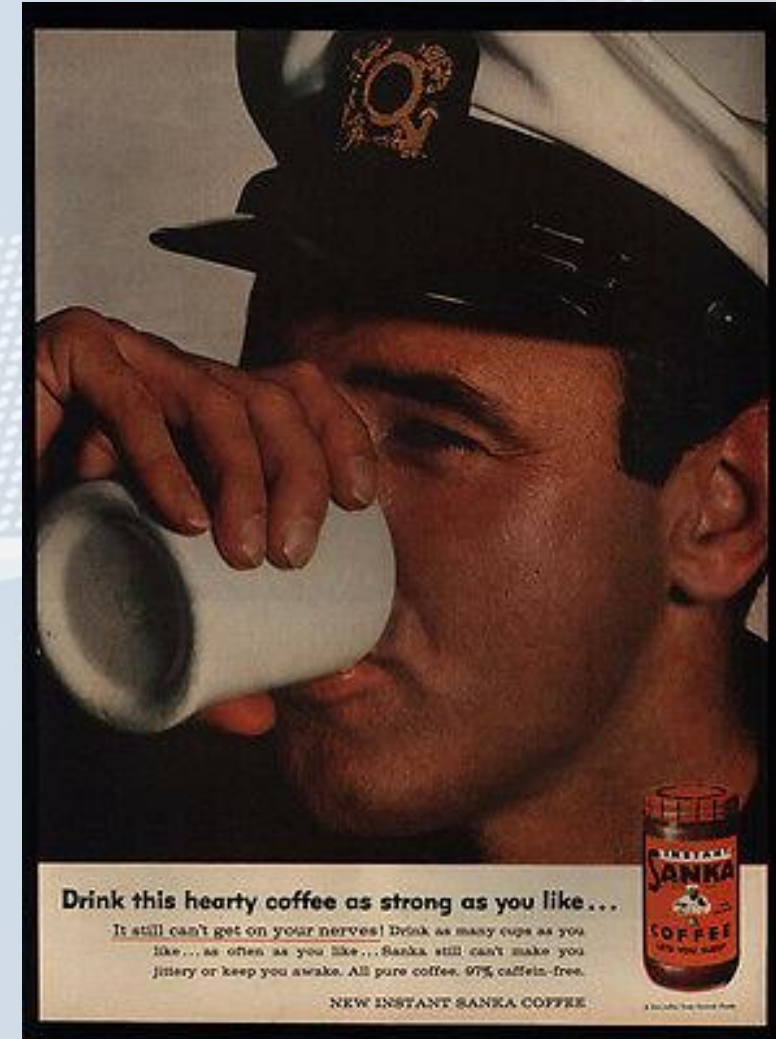
Cyber Threats

- Extortion/ransomware for allowing the vessel to restore operations.
- Digital piracy by shutting down the vessel.
- Espionage for obtaining sensitive information that can be used by competition.
- Defamation/litigation by causing ISPS Code non-compliance/delaying the vessel/causing disruption.
- Terrorism causing vessel collisions.



Fatigue

- Increased workload
- Stress
- Poor sleep
- Crew endurance
- Drug & Alcohol use
- Caffeine Crashes (Coffee, Energy Drinks)



Distractions

Personal

- Family
- Financial
- Constant Communication

Technology

- Personal Electronic Devices
- Increased documentation requirements
- Advances in Equipment



Active Shooter / Active Threat

- According to the FBI, these types of incidents usually do not last more than 12.5 minutes
- Dept. Homeland Security train:
 - RUN
 - HIDE
 - FIGHT
- Local NYC conducted full-live scale exercise this past summer.
- Cross Sound Ferry bought pepper spray and pepper gel guns to help crewmembers if they decide to confront the attacker



Controls

- Safety Management System (SMS) – ISM Code, ISO, etc...
- Towing Safety Management System (TSMS)
 - Subchapter M
- New Technology
 - Training
 - Bridge Simulators
 - Equipment
- Good housekeeping
- Preventative Maintenance
- “Looking out the window!”



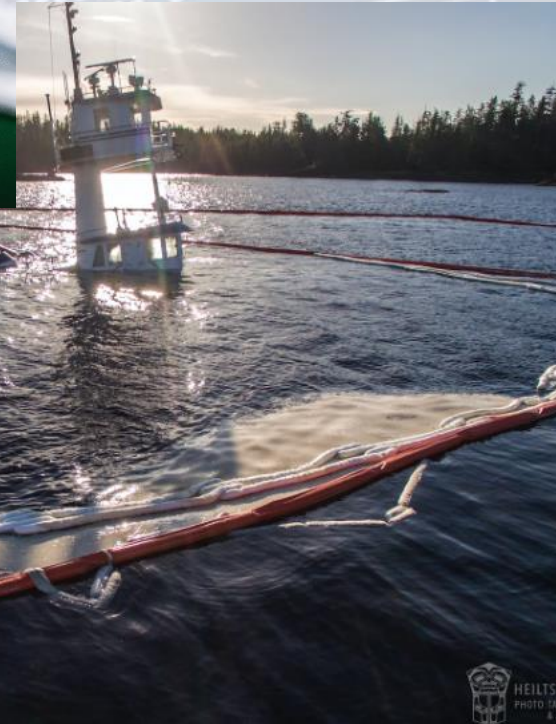
Case Study 1:

Incident: Kirby Tug Nathan E. Stewart Grounding / Spill
Date: October 13, 2016

Summary: Shortly after 1 AM, articulated tug-barge (ATB) tug Nathan E. Stewart and a tank barge, DBL 55, went aground on Edge Reef near Athlone Island, at the entrance to Seaforth Channel, approximately 10 nautical miles west of Bella Bella, British Columbia, within the Heiltsuk First Nation territory. The tug's hull was eventually breached and approximately 29,000 gal of diesel fuel were released into the environment. The tug subsequently sank and separated from the barge.

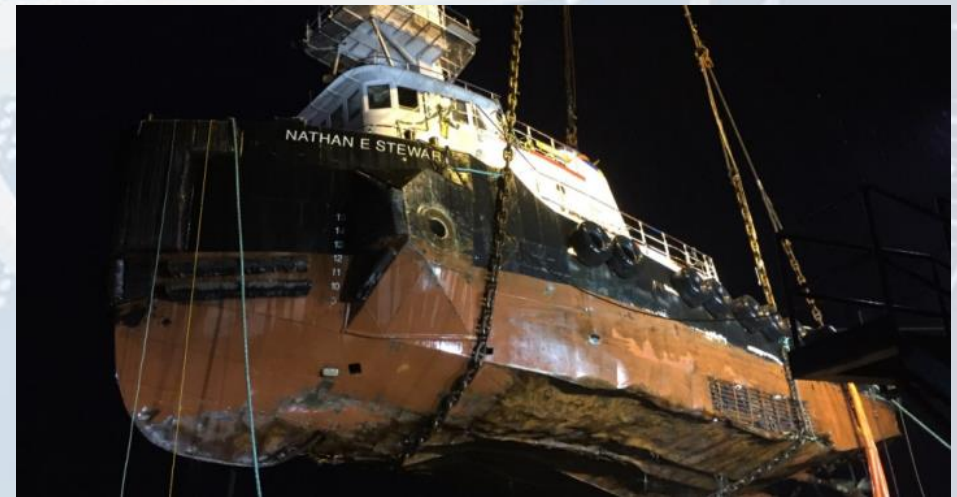
Root-cause(s):

1. The second mate who, contrary to Canadian regulations, was keeping watch alone on the bridge at the time of the accident, **had fallen asleep** and missed a planned course change.
2. For more than two days, he had been working a 6-on, 6-off shift schedule, alternating six hours of duty and six hours of rest.



Case Study 1:

- A Canadian court has fined American tug operator Kirby Corporation about **\$2.2 million** for the environmental damages caused by the sinking of the ATB tug Nathan E. Stewart off Bella Bella, B.C. in 2016.



Case Study 2:

Incident: NY Waterway Ferry & Kayaker Collision

Date: August 30, 2016

Summary: At about 1800 hours on August 30, the ferry Jersey City was backing out of its slip on the Hudson. Despite the evening sun reflecting off the water, the captain did not have a lookout posted on the stern. Meanwhile, nine kayakers were approaching on a guided tour organized by Manhattan Kayak Company (MKC). Five of them were injured in a collision with a ferry near West 39th Street.

Root-cause(s):

1. The vessel captain did not maintain a **safe speed** or a **lookout** once the sun glare existed and was ... at fault in the incident.
2. Manhattan Kayak Company (MKC) was at fault for "**not taking action early** in the trip to avoid collision" and for failing to notify ferry operators that they would be running a tour in the area.



Case Study 3:

Incident: Branson Ride the Ducks Sinking
Date: July 18, 2018

Summary: On the evening of July 19, 2018, a duck boat operated by Ride the Ducks sank on Table Rock Lake in the Ozarks near Branson, Missouri, in the United States. The amphibious vehicle sank with 31 people on board, leaving 17 dead, during high winds associated with nearby severe thunderstorms.

Root-cause(s):

1. The vessel captain ignored warnings of approaching high winds and lightning and that he operated the vessel in conditions that exceeded the boat's limitations as regulated by the U.S. Coast Guard.
2. The vessel captain failed to tell passengers to put on their life jackets and abandon ship when the boat's bilge alarm sounded.



Case Study 4:

Incident: K-Sea Tug & Philadelphia Duck Boat

Date: July 7, 2010

Summary: The tugboat, Caribbean Sea, was pushing a barge that collided into a disabled sightseeing "duck boat" on the Delaware River killing two tourists and injuring more.

Root-cause(s):

1. Tugboat Mate admitted that he was **distracted by his cell phone and laptop** for an extended period of time before the collision.
2. He piloted the tug, the Caribbean Sea, from its lower wheelhouse where he had significantly **reduced visibility**, and that he did not maintain a proper lookout or comply with other essential rules of seamanship, according to federal prosecutors.



Lasting Thought

“Safety today is no different than Safety was yesterday, our limitations will always be restricted to the human element, but our goal everyday should be to educate and empower the industry to identify and eliminate those risks.”

Questions?



Thank you.

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