



# UNITED STATES COAST GUARD

U.S. Department of Homeland Security

## **MARINE SAFETY ALERT**

### **Sector Houston-Galveston**



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Houston, TX

Alert 01-11

### **Mooring Line Operational Safety**

Mooring line handling continues to cause serious personnel injuries and fatalities on the Houston Ship Channel.

During the month of April, Sector Houston-Galveston marine investigators closely examined two significant line handling deaths aboard foreign flag commercial vessels. The investigation following each death determined the incidents were unrelated in the manner in which they occurred; however, these seasoned mariners lost their lives while involved with routine operations onboard their respective vessels. Investigating two significant events in such a short time frame, and nine injuries over the past two years, has prompted Sector Houston-Galveston to remind mariners and operators of the inherent dangers involved with line-handling operations.

- A Motorman on a deep draft vessel was **KILLED** when his head was hit after a line suddenly sprung/slipped off a roller button.
- An Able Bodied Seaman on a deep draft vessel was seriously **INJURED** when his knee was crushed against a bitt after a line was trapped on the capstan while slacking and suddenly tightened while shifting a line following mooring operations.
- The Second Officer on a deep draft vessel was **KILLED** when he was pulled into a rotating hydraulic mooring line drum during mooring operations while getting underway to shift berths.
- The Second Officer on a deep draft vessel was seriously **INJURED** when his leg was struck causing him to fall resulting in lacerations to his head when the stopper failed while getting underway.
- A Mate on a push boat seriously **INJURED** his thumb when a mooring line sprung loose as he was removing it from a capstan while getting underway.
- A Deckhand on a barge was seriously **INJURED** when his fingers were crushed between wire rope and a kevel while he was removing the wire rope.
- A Carpenter on a deep draft vessel was seriously **INJURED** when his fingers were de-gloved as they were caught between a line and a chalk during line handling operations with a tug while getting underway.
- A Deckhand on a barge was seriously **INJURED** and nearly drowned when he was knocked unconscious and fell into the water after being struck in the head & chest by a parted line during mooring.
- An Ordinary Seaman on a deep draft vessel was seriously **INJURED** when his leg was fractured by a mooring line that overlapped and rolled off the mooring winch spool while getting underway to shift berths.

Sector Houston-Galveston encourages operators to share the following information with their mariners:

**Train, Train, Train:** Mooring line handling is a basic, everyday component of the shipping industry. Formal line handling training and supervised on the job training is strongly encouraged. Being knowledgeable in your job is very important but learning does not stop with just completed training. A mariner must evaluate all tasks and identify the hazards related to these tasks daily. Complacency in assigned work is one of the most common factors in workplace deaths annually.

**Go Slow to Go Fast:** Mariners must understand doing whatever it takes to get the job done does not necessarily get the job done faster; and in fact, can actually create setbacks and hazardous situations. Past investigations have revealed mariners are likely to be injured when they are in a rush, willing to do whatever it takes to get the job done or fail to stop operations when they see a mooring line fouled on rotating machinery or other unsafe acts.

**Identify Danger Areas / Zones:** Some operators have elected to highlight known danger areas by painting Danger Areas / Zones on the deck. It is imperative that line handlers remain out of the line of fire of a mooring line. Stay in the safe areas and use common sense when working around lines under tension.

**Review your Safety Management System (SMS):** Operators may wish to review SMS procedures to ensure familiarization and roles & responsibilities are clearly articulated. Training and familiarization concerning deck equipment/machinery should be periodically reviewed and documented. More importantly, the value of proper supervision cannot be overstated. Supervisors should serve as observers and avoid the temptation of engaging in line-handling.

**Basic Line Handling Principles:**

Proper use of deck fittings i.e. buttons, kevels, cleats, rollers and bitts provide near unlimited mooring arrangements; they also create the potential for dangerous latent unsafe conditions. Casualty investigations have revealed the improper application of deck fittings has caused mooring lines to spring/slip free off the fitting. Specifically, arrangements lacked a substantial bend and/or had an excessive angle prohibiting the line from holding tight against the deck fitting.

Image: Note: This line sprung/slipped off the roller. The angle of the line requires a taller roller bit structure for proper fit.



**Over or Under:** Operators are recommended to examine mooring line position on a drum/spool to determine safest operation; specifically to determine whether the mooring line should be run from over the top or under the bottom of the drum/spool.

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