# Overview of ABS Projects on Mariner Personal Safety (MPS) and Maritime Safety Research Initiative

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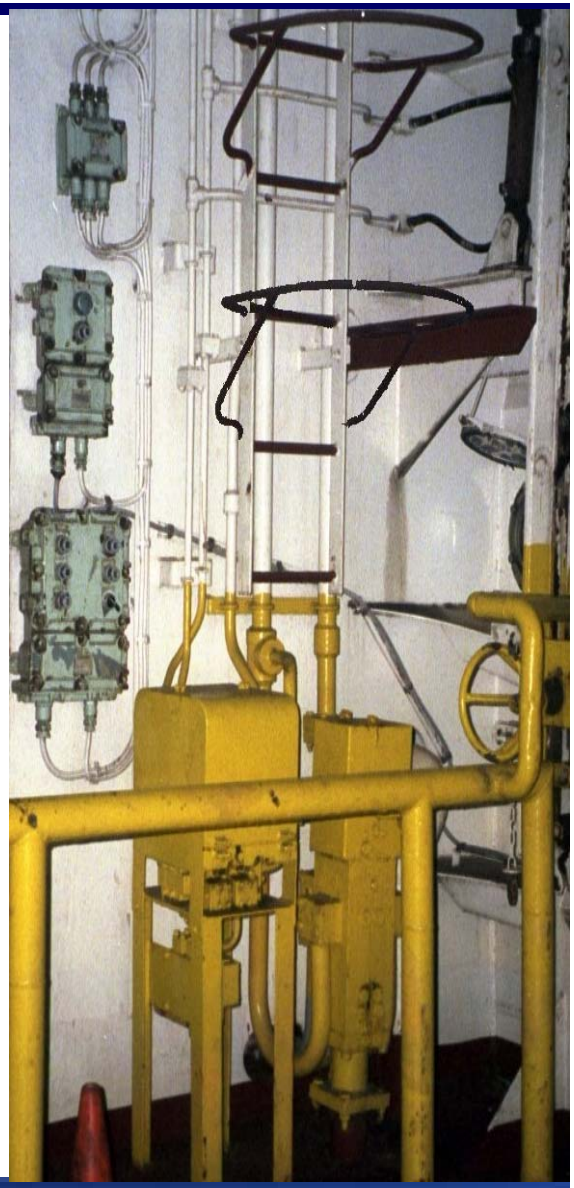
# Mariner Personal Safety (MPS) Project Overview

- Objective obtain and review incident and close call reports
- Collected more than 100,000 records (injuries and close calls)
- Database represents close to 2,000 vessels and 50,000 mariners
- Constructed a database to:
  - Identify trends
  - Create benchmarking statistics
  - Identify potential corrective actions
  - Identify potential lessons learned
- Develop and share results

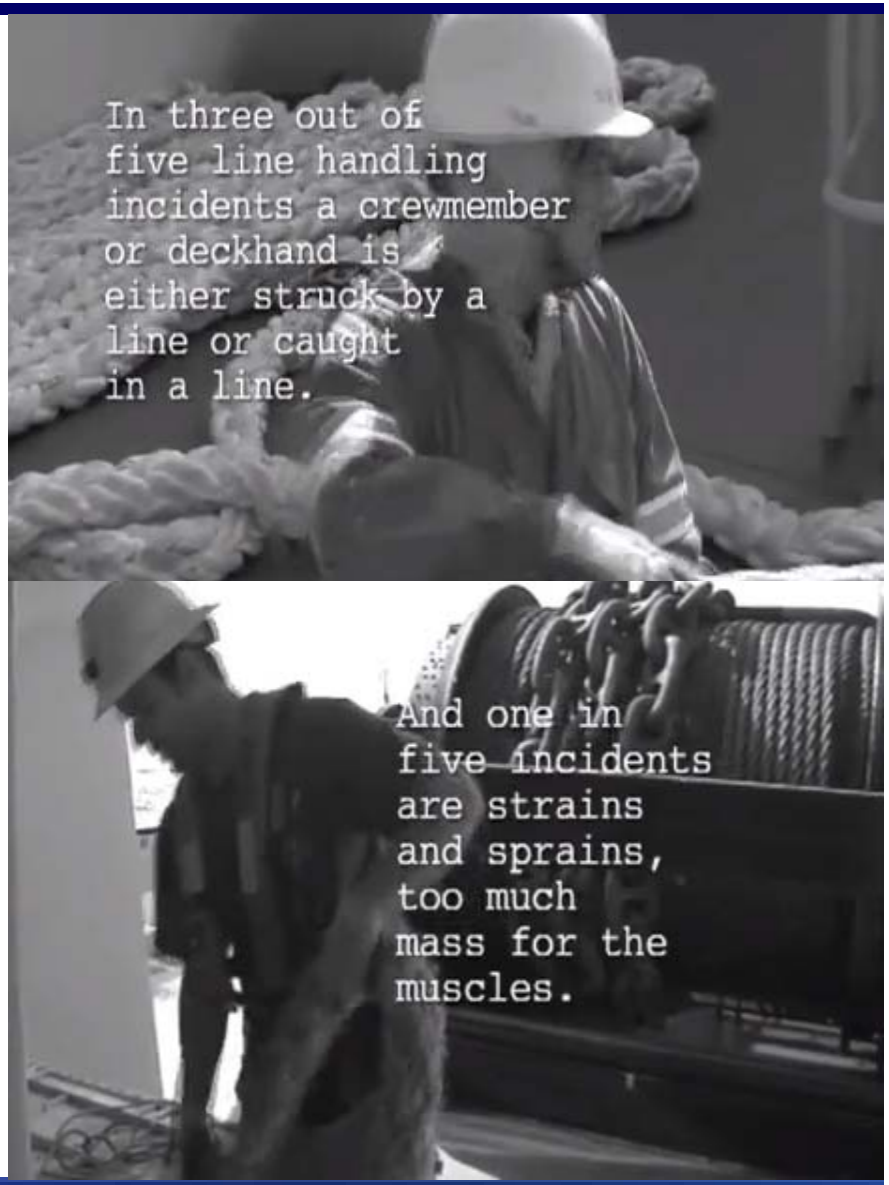


# Industry Partner (IP) uses for Project Results

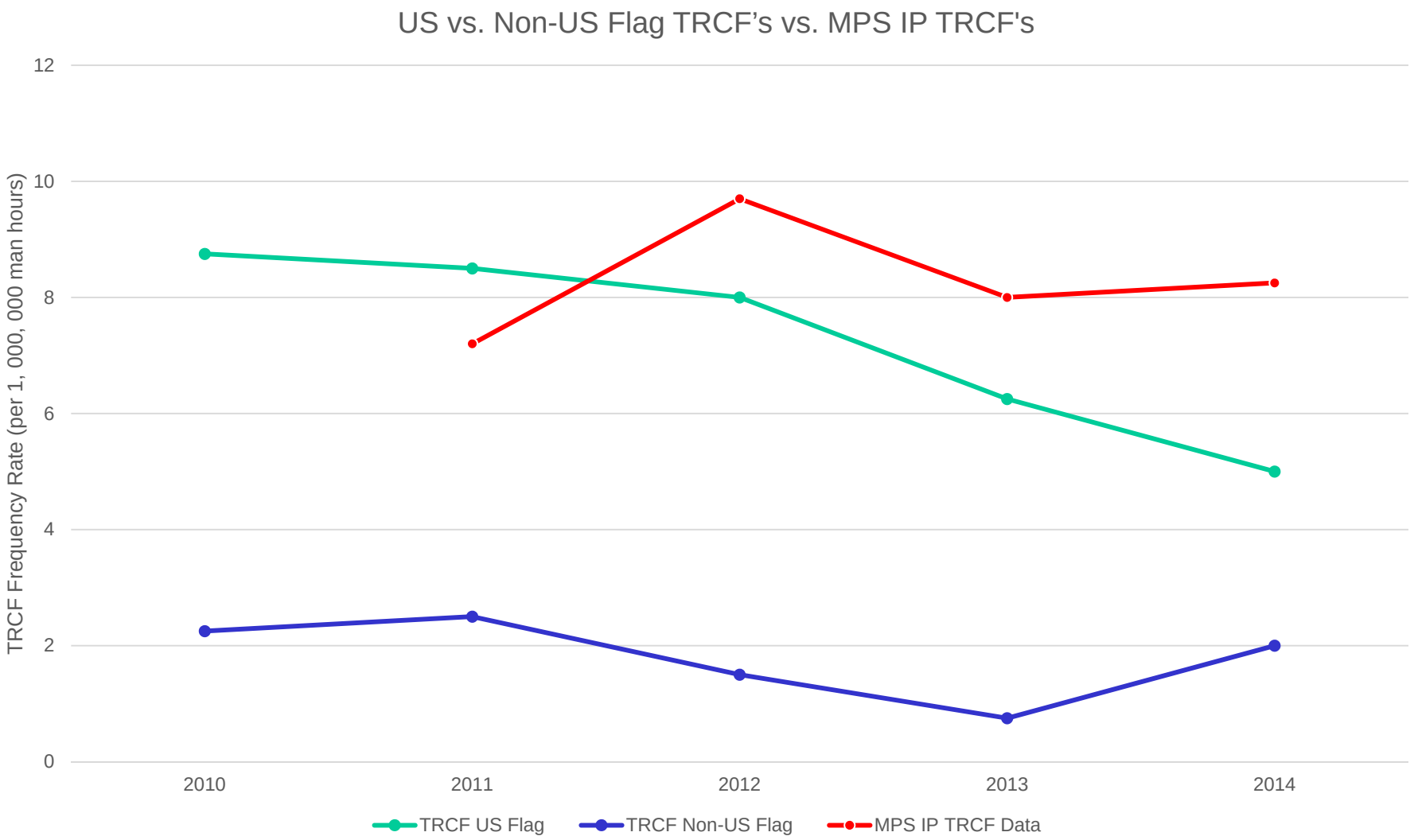
- Directing safety auditing efforts and new design efforts:
  - Identify potential hazards for specific spaces on board (e.g., work and accommodation areas)
  - Identify potential hazards related to crew activities (e.g., line handling to food preparation)
- Help direct safety intervention, prioritization and resource allocation
- Input to safety measurements (metrics) – benchmarking
- Tool box talks and additional safety education for the crew
- Support corporate safety management system

# Recent Use of MPS Results to Support SOCP

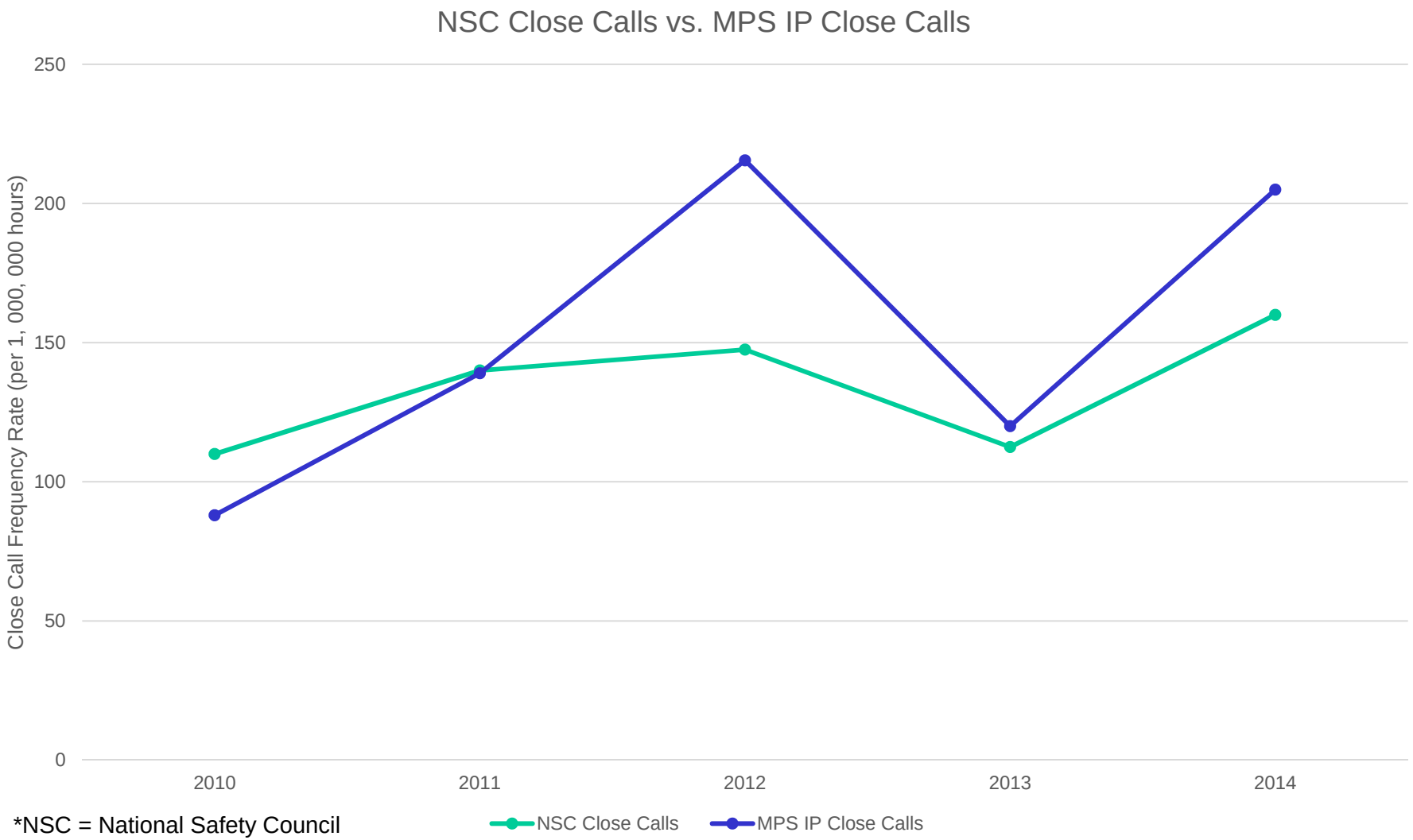
- Line handling training video
  - US Ship Operations Cooperative Program (SOCP) initiative
  - Video developed by Maritime Training Services (MTS)
  - Contents of video supplemented with data from MPS database
    - Close calls
    - Injuries
    - MPS statistics quoted in video
  - MPS statistics and data assisted with the storyboarding and video commentary



# US vs. Non-US Flag TRCF’s vs. MPS IP TRCF’s



# NSC Close Calls vs. MPS IP Close Calls

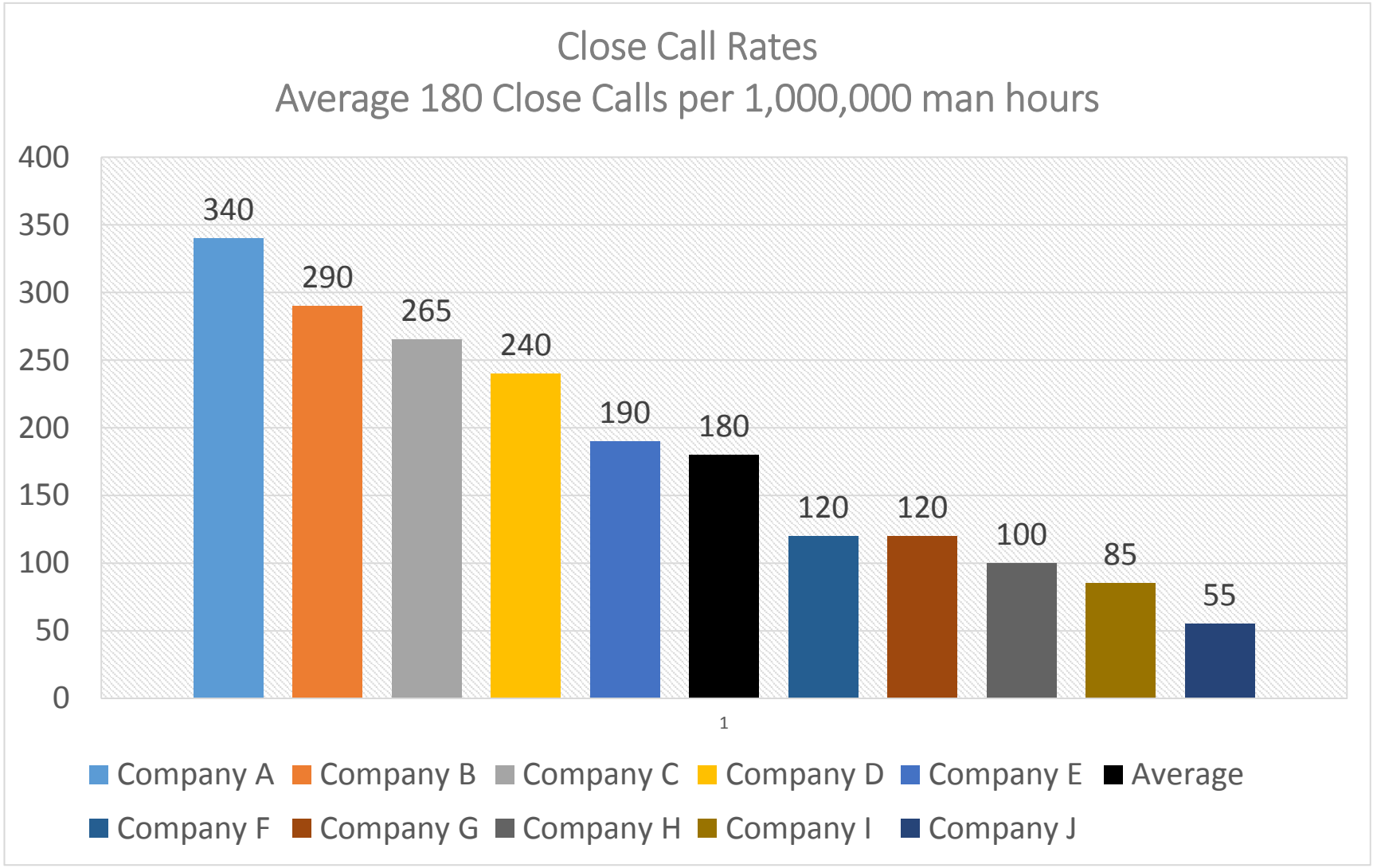



*NSC = National Safety Council

# Benchmarking Close Call Rates

- Questions to ponder:
  - Does a lower number of close calls mean a safer environment?
  - Does a higher number of close calls mean a less safe environment?
  - Is there a clear definition of a close call?
  - Does a higher number of close calls represent a more proactive SMS or mature safety culture?

# Close Call Rates for MPS Industry Partners



# Close Call (near miss) Reporting

- Investigation of MPS close calls demonstrated that there is no consistent definition of a close call and no consistent data being captured for close calls
  - A possible consensus definition is:
    - A commonly accepted (but not universal) definition is “a sequence of events and/or conditions that could have resulted in a loss”
  - A good starting point for data reporting include:
    - Who and what was involved?
    - What happened, where, when and in what sequence?
    - What were the potential losses and their severity?
    - What was the likelihood of a loss being realized?
    - What is the likelihood of a recurrence?

# Additional Close Call Reporting Items?

- When in the work shift did the close call occur (e.g. when first coming on watch, right after or before a meal, or right before being relieved)?
- What were the weather conditions?
- When in the course of crew rotation did the close call occur (e.g. when the crew member just rotated on the vessel or getting ready for shore leave)?
- What is the proposed corrective action or resolution?
- Is this close call vessel specific or could it be applicable to other vessels in the fleet?
- What are the lessons to be learned, if any?

# Identified IP/Industry Need - Close Call Program

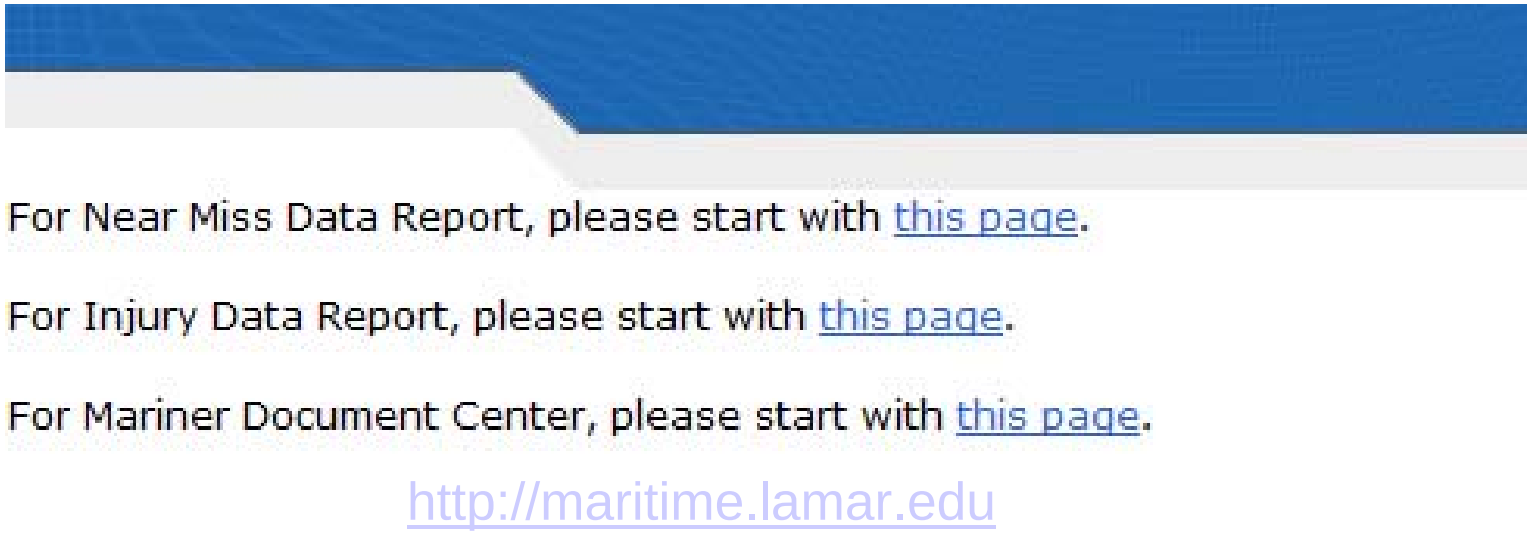
| | Component | Description |
|---|---|---|
| 1 | Awareness | Begins with visible senior management support, training of employees in the identification of hazards, close calls, and recognition of improvement opportunities |
| 2 | Reporting | Implemented and senior management supported system for reporting hazards and close calls, preferably electronic. |
| 3 | Investigation | Determination of the priority level (high, medium or low) depending on the potential outcome if the close call was to become an incident. Based on the risk probability and severity, an appropriate investigation is conducted. |
| 4 | Root Cause Identification | The incident is analyzed and causes are evaluated until a detailed cause(s) is identified. |
| 5 | ID corrective actions and recommendations | Using education, experience, research, knowledge of the situation, brain storming, acceptable corrective action(s) and recommendations are made. |
| 6 | Dissemination | All close calls should be shared with the immediate crew and within the organization. If deemed valuable, the close call investigation and outcomes should be shared with industry to raise awareness about the hazard or close call. |

# Work with Industry / SOCP

- The US Ship Operations Cooperative Program (SOCP) asked us (ABS and Lamar) to draft documents for near miss reporting and injury reporting
- US Maritime Administration (MARAD) key sponsor of this effort
- Goals include:
  - Standardized terminology
  - Standardized reporting practices
  - Development of industry benchmarking
  - Development of industry trending data
- Deliverables – draft ASTM standards for SOCP to submit to ASTM for publication
- Contract in place and work has started

# MPS Website

- The website and database is broken-up into three parts
  - Searchable database with close calls (near misses)
  - Searchable database for injuries
  - Searchable database for safety related documents (Document Portal)
    - The ones currently in the database are based on a review of the close call and injury database



# Database Access

- Industry Partners can have access to
  - Close call database
  - Injury database
  - Mariner Safety Document Center (portal)
- Industry Partners assigned unique password and ID
- Available for testing and comment
- Database revisions and improvements based on user feedback

# Data Confidentiality

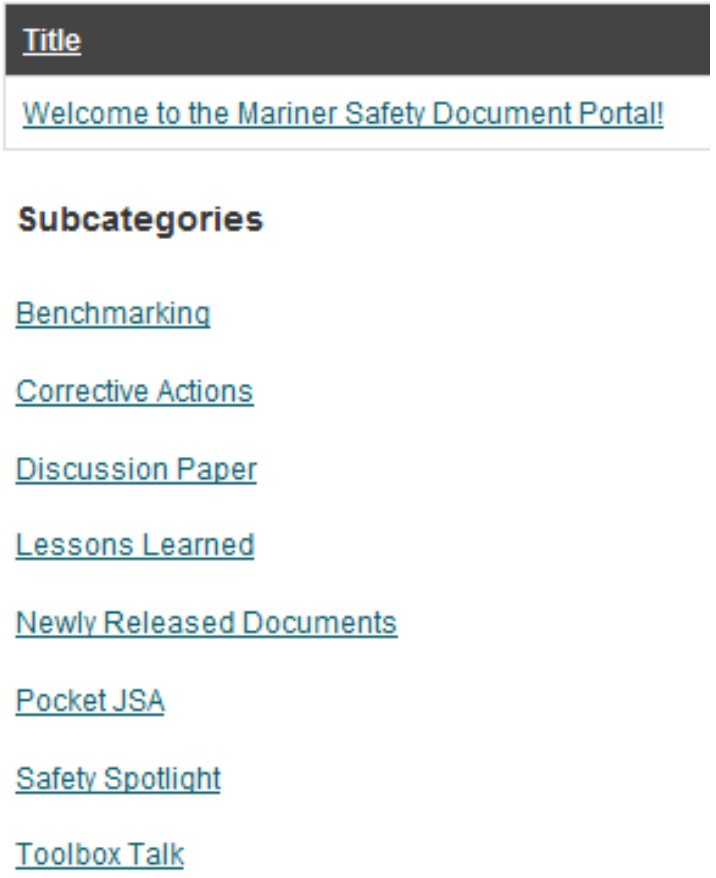
- ABS and Lamar University (co-investigator and MPS server host site) – confidentiality agreements in place
- Lamar University can initiate a confidentiality agreement with industry partners separately
- Lamar University performs a sanitizing effort on incoming data
- Cannot link individual records to any particular industry partner

# Database Evolution

- Improvements based on user feedback
  - Stemming
  - Synonyms
  - The drop-down lists are now filtered, e.g. limited based on other searches
    - Simplifies search
  - The drop-down lists are alphabetized
    - Simplifies search
  - Addition of search by vessel type

# Safety Document Center (Portal)

- Document Center (Portal) subcategories
  - Benchmarking Information
    - High-level overviews
  - Applied Corrective Actions (16)
  - Discussion Papers (23)
  - Lessons Learned (15)
  - Safety Spotlights (23)
  - Toolbox Talks (59)
  - Newly Released Documents
    - 2012 Benchmarking
    - Crew member fatalities



# Document Portal Screen Capture - Example

- Ergonomic Discussion Papers

| Title | Author | Hits |
|---|---|---|
| Cold Stress | Written by Administrator | 13 |
| Communication | Written by Administrator | 3 |
| Conduct of Project HFE Design Reviews | Written by Administrator | 7 |
| Cultural Calibration | Written by Administrator | 16 |
| Designing for Habitability | Written by Adminstrator | 13 |
| Designing Means of Access and Related Access Aids | Written by Administrator | 9 |
| Diet of Seafarers | Written by Administrator | 4 |
| Ergo for Maritime-Prevention of MSDs | Written by Administrator | 4 |
| Fatigue Quantification | Written by Administrator | 7 |
| Habitability and Comfort | Written by Administrator | 10 |

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# Maritime Safety Research Initiative

- A 2015 ABS Technology project –
  - Develop and publically share practical safety data
- Create opportunities for collaborative efforts with maritime industry groups, academies, etc… around the world
- This on-line initiative will be a repository for MPS generated safety information
- MPS Industry Partners retain access to injury / close call databases
- This online public repository will not be directly linked to the injury / close call databases

# Initiative – Core Activities

- Products to be developed will include, but not limited to:
  - Create industry injury and close call benchmarking/trending metrics
  - Create a library/database of corrective actions and lessons learned Input to assist with improvement of SMS and corporate safety culture
  - Input to assist with incident investigations and root cause analyses
  - Input to assist with the development of Job Safety Analyses (JSAs) and other safety materials
  - Generic results from safety culture surveys
  - Generic results from leading indictor studies
- Industry requests:
  - Close calls related to poor procedures and piracy
  - Accommodations ladder injuries and fatalities
  - Close call that resulted in vessel design modifications
  - Injuries with containerships including lashing/unlashing activities

# MPS Industry Partner Ideas

- Industry Partner input:
  - Create the ability to subscribe to the Center
  - Send out quarterly updates to subscribers
  - Set up an optional “tiered” access structure
    - Tiered access would relate to information access
    - Higher tiers would be on a fee based system
  - Create podcasts (video / voice) of Tool Box Talks
  - Create short PowerPoint presentations about safety issues and include actual close calls, ‘injury reports, lessons learned, and corrective actions

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