



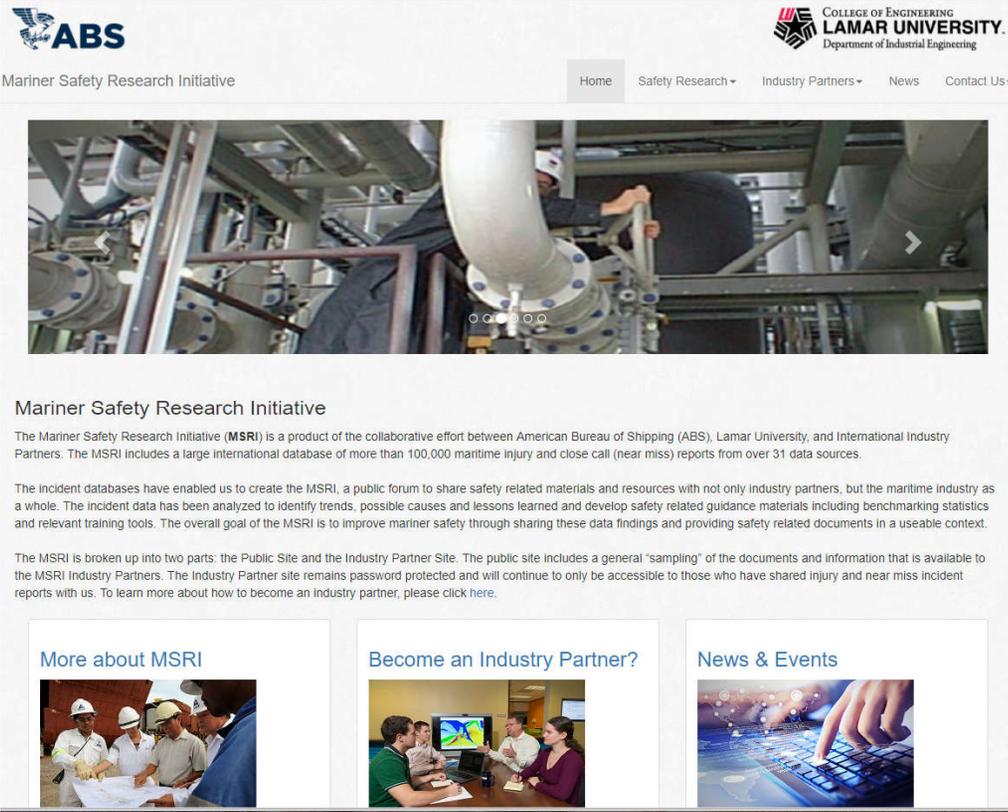
ABS' and Lamar University's Mariner Safety Research Initiative



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Mariner Safety Research Initiative (MSRI) - Overview

- ABS/LU/maritime industry cooperative research effort to improve the health and safety of seafarers
- Online initiative includes:
 - 3 searchable databases:
 - near miss database
 - injury database
 - repository (document portal) of pragmatic safety data
 - Results of ABS/LU's consolidated Safety Culture data set



ABS

COLLEGE OF ENGINEERING
LAMAR UNIVERSITY
Department of Industrial Engineering

Mariner Safety Research Initiative

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Mariner Safety Research Initiative

The Mariner Safety Research Initiative (MSRI) is a product of the collaborative effort between American Bureau of Shipping (ABS), Lamar University, and International Industry Partners. The MSRI includes a large international database of more than 100,000 maritime injury and close call (near miss) reports from over 31 data sources.

The incident databases have enabled us to create the MSRI, a public forum to share safety related materials and resources with not only industry partners, but the maritime industry as a whole. The incident data has been analyzed to identify trends, possible causes and lessons learned and develop safety related guidance materials including benchmarking statistics and relevant training tools. The overall goal of the MSRI is to improve mariner safety through sharing these data findings and providing safety related documents in a useable context.

The MSRI is broken up into two parts: the Public Site and the Industry Partner Site. The public site includes a general "sampling" of the documents and information that is available to the MSRI Industry Partners. The Industry Partner site remains password protected and will continue to only be accessible to those who have shared injury and near miss incident reports with us. To learn more about how to become an industry partner, please click [here](#).

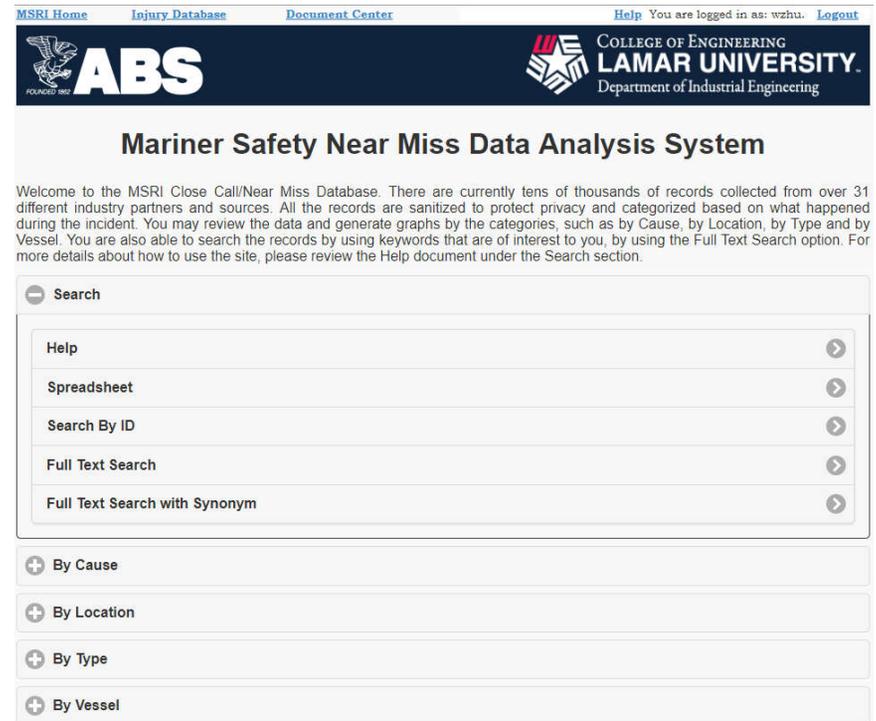
More about MSRI

Become an Industry Partner?

News & Events

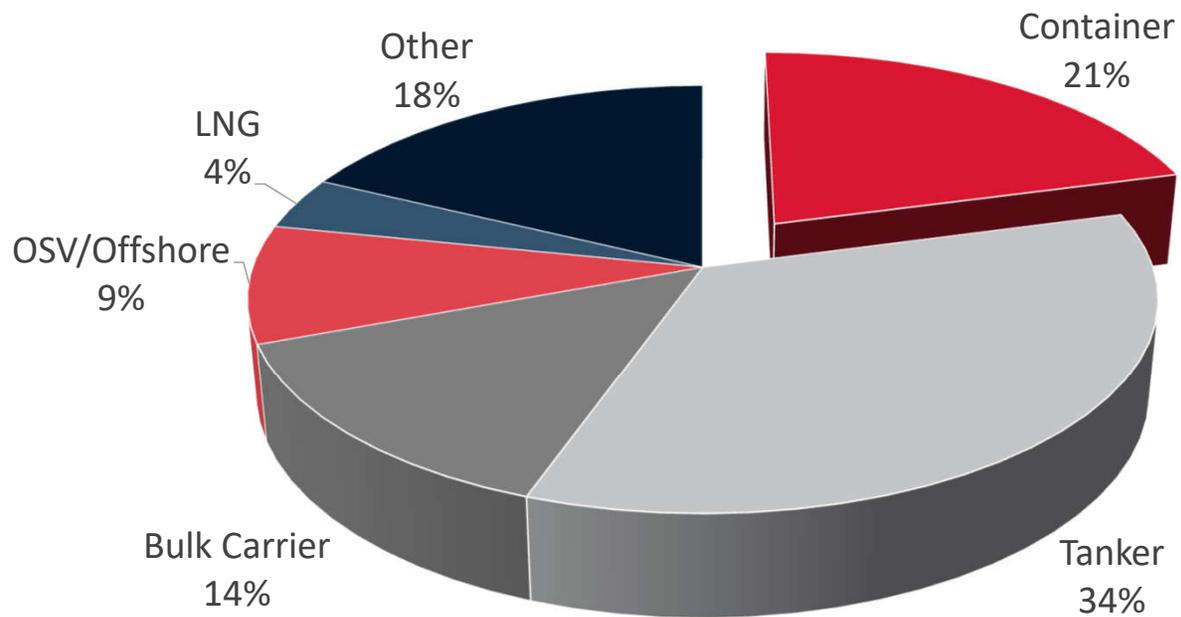
Near Miss and Injury Databases

- Objective: obtain and review incident and near miss reports from Industry Partners (IP's)
- Collected approximately ~ 120,000 records (injuries and near misses)
- Database represents more than 2,100 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

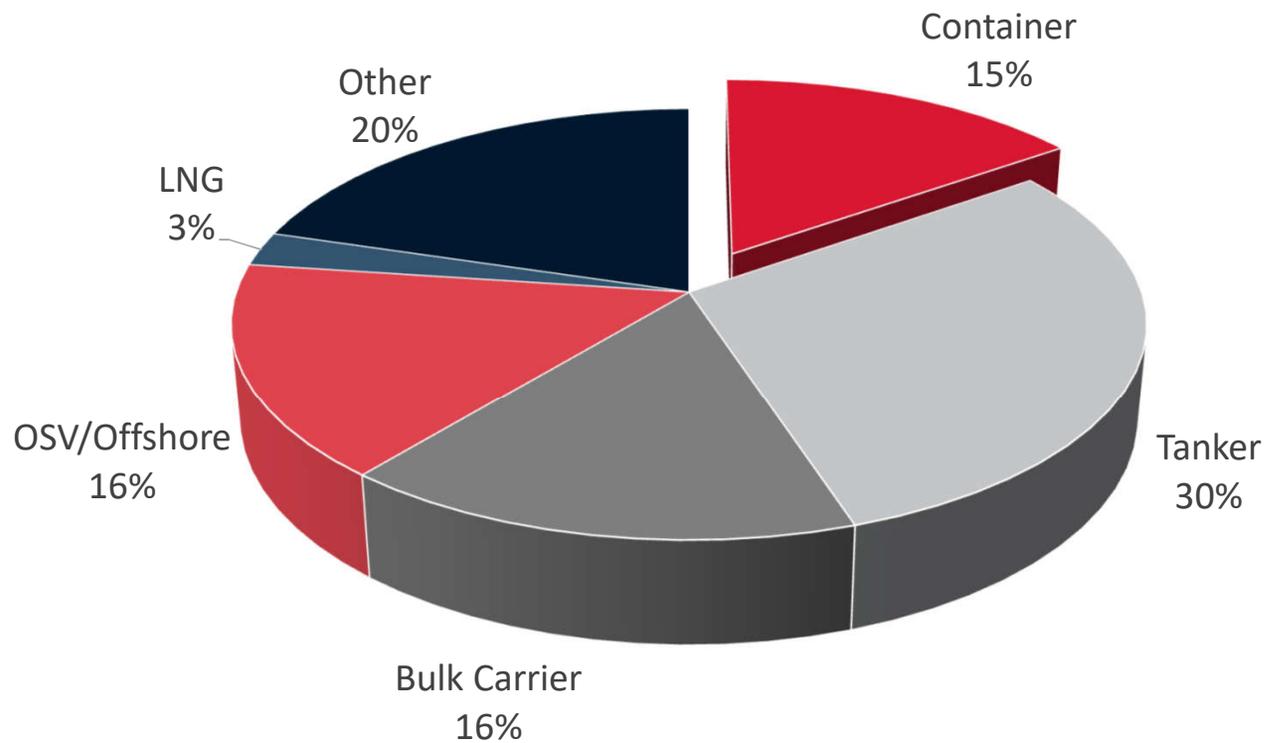


The screenshot shows the MSRI Home page for the Mariner Safety Near Miss Data Analysis System. The header includes navigation links for MSRI Home, Injury Database, and Document Center, along with a user login status (wzhu) and a Logout option. The main header features the ABS logo and the Lamar University logo, specifically the College of Engineering and Department of Industrial Engineering. The title of the system is "Mariner Safety Near Miss Data Analysis System". A welcome message states that there are currently tens of thousands of records collected from over 31 different industry partners and sources, all sanitized for privacy. It lists search options: by Cause, by Location, by Type, and by Vessel, and also mentions a Full Text Search option. Below the welcome message is a search interface with a "Search" button and a list of search options: Help, Spreadsheet, Search By ID, Full Text Search, and Full Text Search with Synonym. Below the search options are four filter buttons: "By Cause", "By Location", "By Type", and "By Vessel".

Vessel Type – Near Miss Database



Vessel Type – Injury Database



Industry Partner Input for MSRI Activities

- Share safety documents (TBT's, Safety Spotlights, etc.)
- Share benchmarking data
- Outline and define the more useful data fields of near miss reports
- Outline and define the more useful data fields of injury reports
- Make attempts at standardized near miss and injury reporting
- Work with Maritime industry groups and universities
 - NSC-WTG, AWO, UK's HEAG, Inter-Cargo, Inter-Tanko, Inter-Manager, US Maritime Administration, US SOCP, IMO, etc.
 - US Maritime universities
 - International maritime universities
- Hold occasional Industry Partner meetings.
 - Get Industry Partners to present on success stories and “not-so” success stories

Data Confidentiality

- ABS and Lamar University (co-investigator and MSRI 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

- Continual improvement 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

*= Only IPs have access to the near miss and injury databases

The screenshot shows the 'Full Text Search with Synonym' interface. At the top, there are logos for ABS (FOUNDED 1962) and COLLEGE OF ENGINEERING LAMAR UNIVERSITY (Department of Industrial Engineering). The main heading is 'Full Text Search with Synonym'. Below this, there are links for 'Help' and 'Customize Synonyms'. The 'Keywords (Query Reference)' section contains three input fields labeled 'key1:', 'and key2:', and 'and key3:'. A 'Find Synonyms' button is located below these fields. The 'User Defined Synonyms' section has three input fields labeled 'For key1', 'For key2', and 'For key3'. An 'Add Synonyms to List' button is positioned below these fields. The 'Synonyms Found:' section is currently empty. The 'Filters:' section includes two rows: 'Type - Low Detail:' with a dropdown menu set to 'Any', and 'Type - Medium Detail:' also with a dropdown menu set to 'Any'.

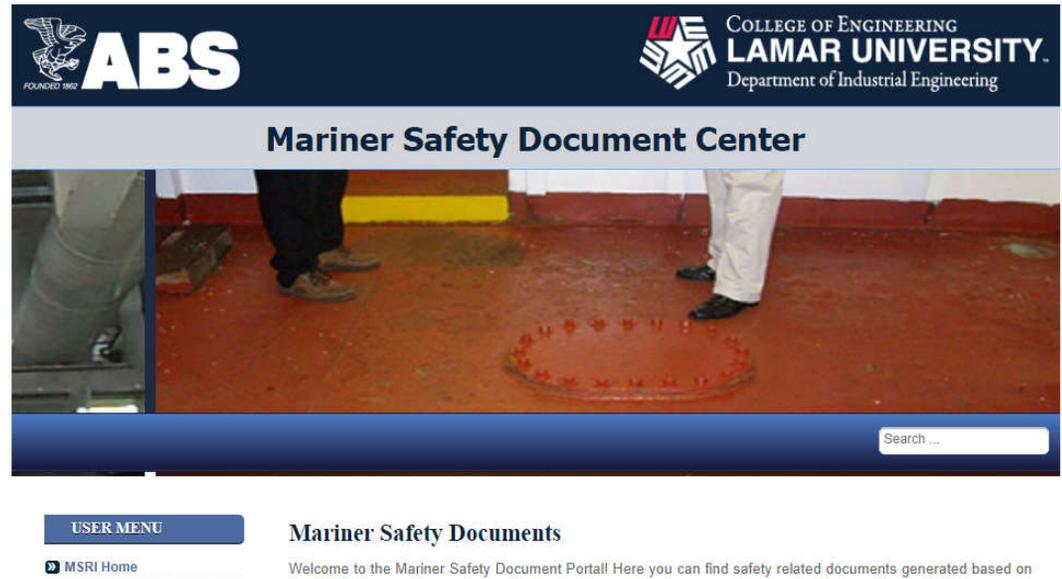
Database Access

- Industry Partners have access to:
 - Near miss database
 - Injury database
 - Mariner Safety Document Center (portal)
- Industry Partners assigned unique password and ID
- Database revisions and improvements based on user feedback

The screenshot shows the MSRI Mariner Safety Near Miss Data Analysis System interface. At the top, there is a navigation bar with links for MSRI Home, Injury Database, Document Center, and Help. The user is logged in as wzhu. The ABS logo is prominently displayed on the left, and the Lamar University logo is on the right. The main heading is "Mariner Safety Near Miss Data Analysis System". Below this, a welcome message states: "Welcome to the MSRI Close Call/Near Miss Database. There are currently tens of thousands of records collected from over 31 different industry partners and sources. All the records are sanitized to protect privacy and categorized based on what happened during the incident. You may review the data and generate graphs by the categories, such as by Cause, by Location, by Type and by Vessel. You are also able to search the records by using keywords that are of interest to you, by using the Full Text Search option. For more details about how to use the site, please review the Help document under the Search section." Below the welcome message is a search section with a "Search" button and a list of search options: Help, Spreadsheet, Search By ID, Full Text Search, and Full Text Search with Synonym. Below the search options are four filter buttons: By Cause, By Location, By Type, and By Vessel.

Safety Document Center (Portal)*

- Document Center (Portal) subcategories
 - Benchmarking Information (1)
 - High-level overviews
 - Corrective Actions (17)
 - Ergo & Safety Discussion Papers (23)
 - Lessons Learned (15)
 - Safety Spotlights (30)
 - Toolbox Talks (57)
 - Newly Released Documents (1)
 - 2018 Near Miss Benchmarking



* = Document portal is publically available

Document Portal - Safety Spotlights

USER MENU

- » MSRI Home
- » [Mariner Safety Documents](#)

Safety Spotlights

Display #

Title	Hits
Cold Weather Safety: Injuries	Hits: 292
Gangway Injuries	Hits: 368
JSA - Top 5 Near Misses	Hits: 554
PPE - Near-misses	Hits: 274
Procedures	Hits: 223
Remedial Design	Hits: 240
Slips and Trips in Workspaces: Top 5 Near-misses	Hits: 1995
Surveyor Safety: Cell Phones	Hits: 251
Surveyor Safety: Top 5 Near-misses	Hits: 209
Visitor Safety and Ladders	Hits: 1435



Document Portal - Toolbox Talks

USER MENU

- » [MSRI Home](#)
- » [Mariner Safety Documents](#)

Toolbox Talks

Display #

Title	Hits
Access/Egress	Hits: 360
Back Injuries	Hits: 277
Cell Phone Safety	Hits: 386
Chemical Safety	Hits: 280
Cold Weather Safety	Hits: 252
Complacency	Hits: 925
Computer Ergonomics	Hits: 238
Electrical Hazards	Hits: 246
Fatigue	Hits: 473
Fire Safety	Hits: 272

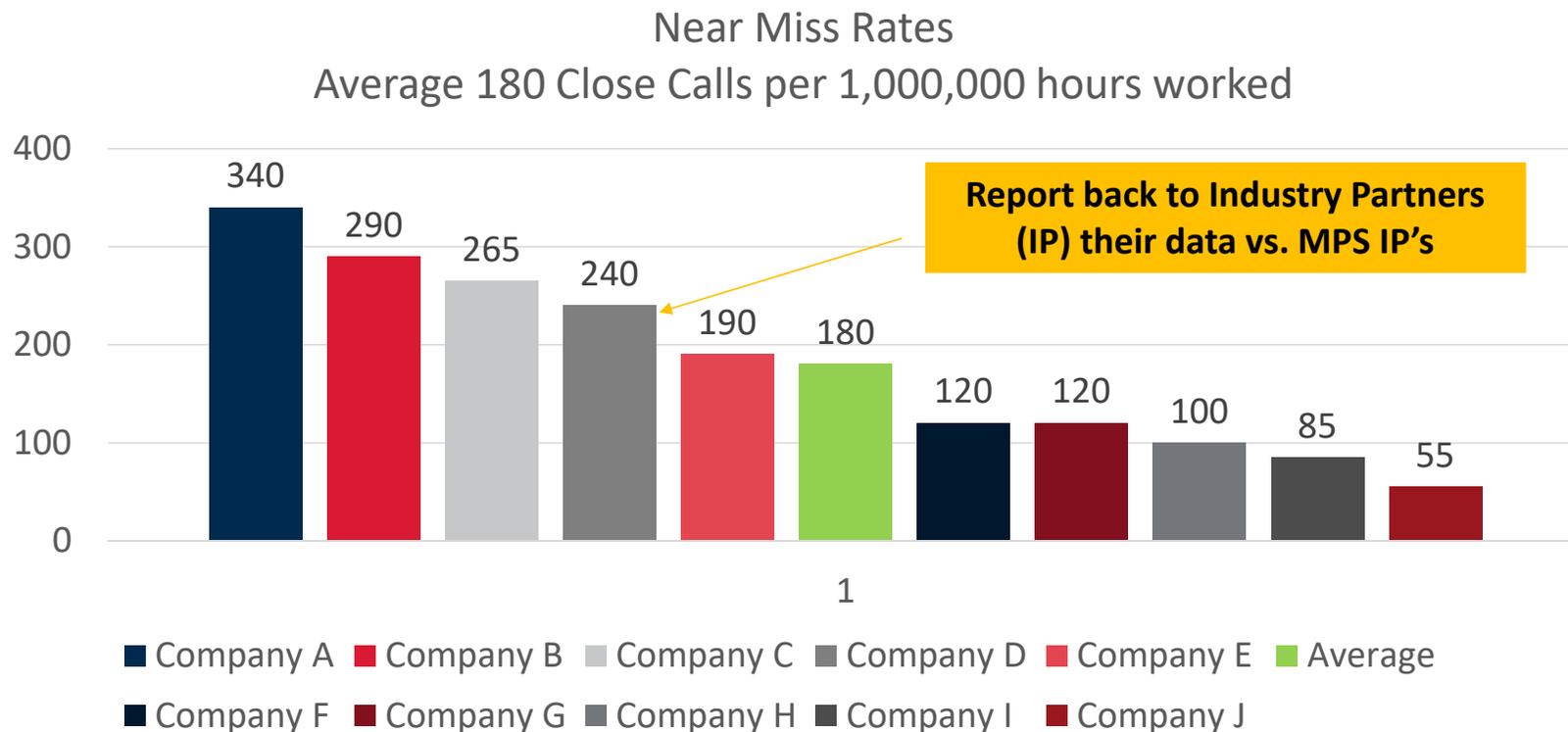


Industry use of MSRI Results

- Benchmarking
- Trending
- Best Practices
- Lessons Learned
- Correct Actions
- Toolbox Talks
- Safety Spotlights
- Ergonomic and Safety Discussion Papers
- JSA's, JHA's, SOPs, etc.
- Support Training Development

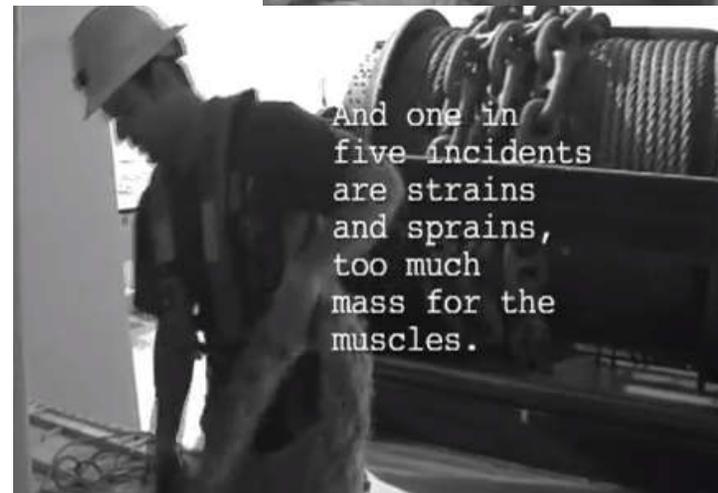
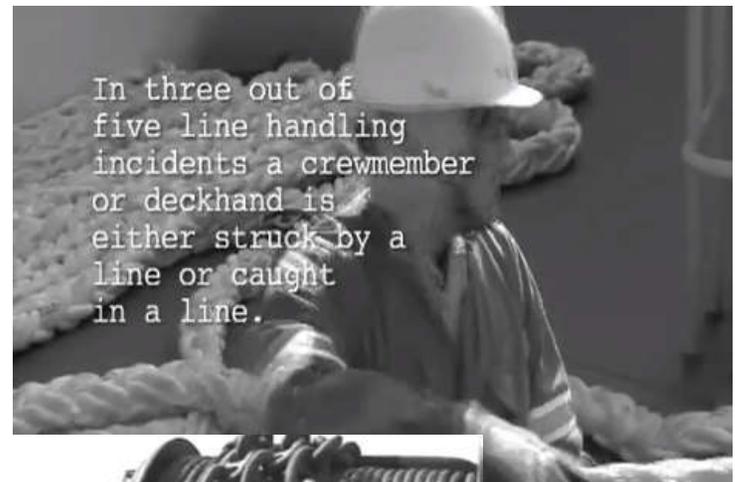


Near Miss Rates for MPS Industry Partners



Use of MSRI 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 MSRI database
 - Near misses
 - Injuries
 - MSRI statistics quoted in video
 - MSRI statistics and data assisted with the storyboarding and video commentary



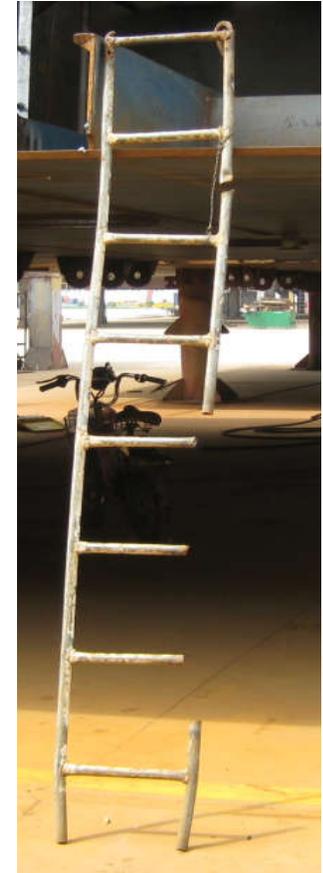
No Common Standard For Near Miss Reporting

- Over 30 data sources reviewed
- Each company uses a different format for collecting and reporting near miss
- Different definitions for near misses
- Number of data fields in industry partner reports ranged from 1 to over 30
- Most companies include hazardous conditions and some maintenance issues in their near miss reporting systems



Identified Industry Need – Near Miss Program

	Component	Description
1	Awareness	Begins with visible senior management support, training of employees in the identification of hazards, near misses, and recognition of improvement opportunities
2	Reporting	Implemented and senior management supported system for reporting hazards and near misses, preferably electronic.
3	Investigation	Determination of the priority level (high, medium or low) depending on the potential outcome if the near miss 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 near misses should be shared with the immediate crew and within the organization. If deemed valuable, the near miss investigation and outcomes should be shared with industry to raise awareness about the hazard or near miss.



Work with Industry / SOCP

- The US Ship Operations Cooperative Program (SOCP) asked ABS & LU to draft documents for near miss & injury reporting
- US Maritime Administration (MARAD) key sponsor of this effort
- Goals:
 - Standardized Terminology
 - Standardized Reporting Practices
 - Development of Industry Benchmarking
 - Development of Industry Trending Data
- Deliverables:
 - Publication of ASTM F3256-17 Best Practices for Near Miss Reporting and Recording: <https://www.astm.org/Standards/F3256.htm>
 - Publication of ASTM F3284-18 Best Practices for Injury Reporting and Recording: <https://www.astm.org/Standards/F3284.htm>

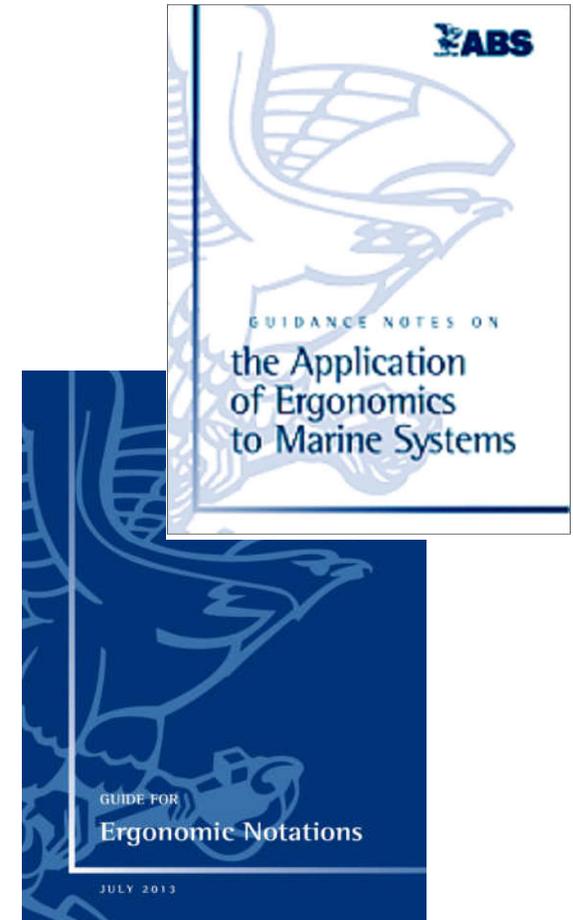


Summary of Core MSRI Activities

- Products developed include, but are not limited to:
 - Create industry injury and near miss 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 and leading indicator studies
 - Tools for continual safety improvement
- Industry research requests:
 - Near misses related to poor procedures
 - Accommodations ladder injuries and fatalities
 - Near misses that resulted in vessel design modifications
 - Injuries on containerships including lashing/unlashing activities
 - Injuries related to hatches/manholes

ABS Benefits

- Assist in the development/revision of additional ABS safety related publications, for example:
 - ABS Guide for Ergonomic Notations
 - ABS Guidance Notes on the Application of Ergonomics to Marine Systems
 - ABS Guidance Notes on Management of Change
 - ABS Guidance Notes on Job Safety Analyses
 - ABS Guidance Notes for Procedures and Technical Manuals



MSRI Public Portal Link

<https://maritime.lamar.edu/>



Thank You

www.eagle.org