

# MARINE LEARNING SYSTEMS

## **The Maritime Learning and Assessment Platform**

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## Introduction

Marine Learning Systems is a leading provider of learning and assessment technology to the maritime industry. Our products help ensure that marine personnel are prepared and can work as safely and efficiently as possible. We envision a world where all companies and their workers can continually improve their safety and productivity through targeted, effective and measurable training.

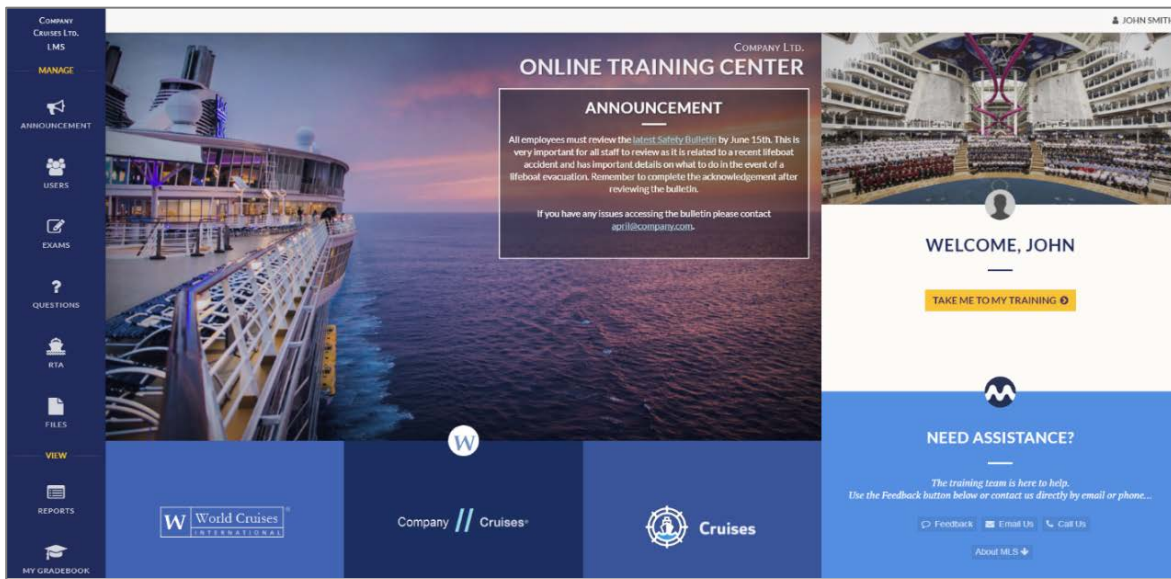
Our team includes eLearning pioneers and industry experts, and our customers include visionary maritime operators such as Carnival Corporation, BC Ferries, the Staten Island Ferry, Disney Cruise Line, and the Canadian Coast Guard.

Our deep experience in eLearning research and maritime technology deployment gives us a unique advantage in both our product and advisory services. We help customers implement eLearning and assessment in a way that increases safety, protects personnel and capital assets, and optimizes on-board performance. Our focus is on providing technology and services that help ensure the best and most consistent training results for maritime operations.

## MarineLMS - The Learning Management System for Maritime

MarineLMS is a Learning Management System (LMS) built specifically for the maritime industry. In addition to standard LMS features, MarineLMS provides functionality for vessel-specific training and the maritime training context. MarineLMS also supports different forms of maritime-specific assessments, ensuring consistency and eliminating ambiguity.

We recognize that each maritime operator has unique needs and priorities that may change over time. MarineLMS has been designed from the ground-up to be “future-proof”: adaptable and able to accommodate future requirements.



## Features and Functionality

### Learning Content

MarineLMS supports many types of learning materials, from any source. Content can be in a variety of formats, such as text, video, audio, PowerPoint, PDF, gamified content, animation (Flash, HTML5, etc.) and SCORM 1.2.

As a content-agnostic system, there are no restrictions on course vendors: MarineLMS can display material from any 3<sup>rd</sup> party course provider or content created by the customer themselves. Operators can continuously tune their content to user needs, and to changes in routine and equipment.

MarineLMS also supports materials beyond eLearning courses. The system is a perfect location to host the company's resource library (such as company policies, equipment manuals, etc.), giving employees a central location to access any materials they need. Learning materials such as Safety Bulletins or Hazard alerts can be distributed instantly to all crew members. MarineLMS can ensure that each employee has read and acknowledged the bulletin and can even administer a small test of their knowledge. All this information is recorded and tracked, providing reports on-demand regarding the dissemination of safety-critical information.

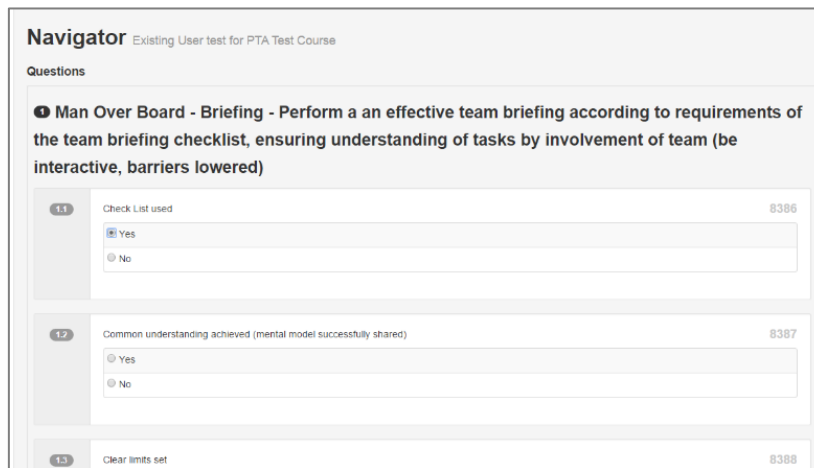
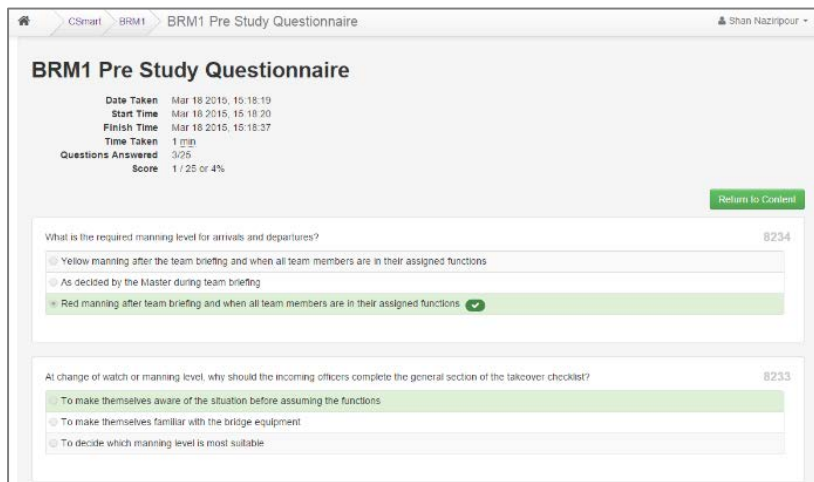
The image displays two screenshots of the MarineLMS web application. The top screenshot shows a 'SAFETY FLASH 2017 01 - DRYDOCK FIRE HPNM' page. The page header includes 'Maritime Corp.' and 'John Smith'. The main content area features a 'SAFETY FLASH' logo with a globe and a red lightning bolt, dated 'Jan 2017' and 'NMF Safety Flash 1/2017'. The title is 'Dry Dock Fire HPNM'. A 'Summary' section describes an incident where steel work was carried out on the stern ramp, and a rubber seal smoldered during hot work. The bottom of the summary is partially cut off. The bottom screenshot shows a 'Drydock Fire HPNM Test' page. It includes instructions: 'Select 1 answer for every question. When you have finished, click on the Green button at the bottom right of this page. Clicking this button will record your answers. Good luck!'. The 'Questions:' section contains one question: 'During drydock and ship repair periods the yard is fully responsible for Hot Work safety.' with a score of 30369. There are four radio button options: 'Yes, the yard is fully responsible.', 'No, the ship is fully responsible.', 'There is joint responsibility, but the Master retains overriding responsibility for the safety of the vessel.', and 'Hot work does not need to be controlled in drydock.'. A green button labeled 'Click here when done' is at the bottom right.

## Assessments and Checklists

MarineLMS supports a range of assessments for assurance of competency. Self-tests can be used by students to test their own knowledge informally, and graded assessments are used to test and record learner comprehension. Exams can be proctored, un-proctored, randomized, password-protected or instructor-led. Questions are categorized and presented randomly following custom rules, to ensure that users receive a different mix of questions, but are tested at a similar level of difficulty.

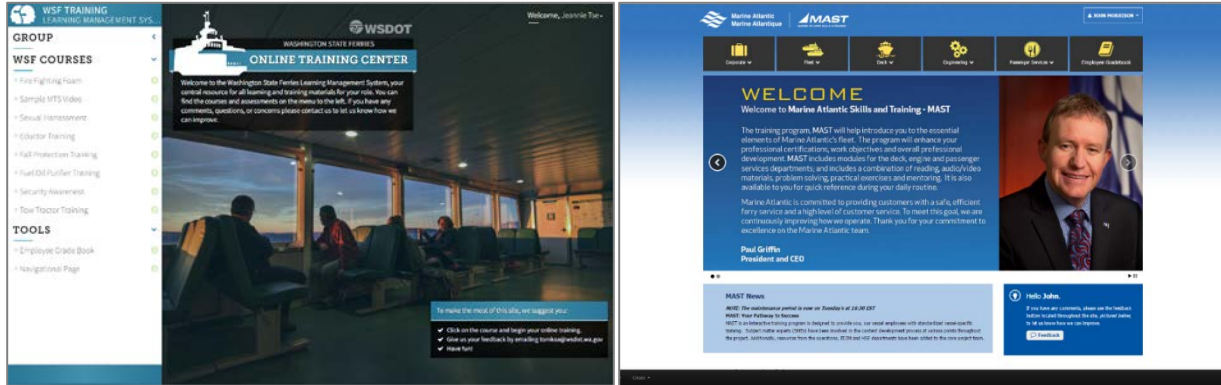
MarineLMS also supports in-person evaluations. Instructors or supervisors can use this feature to complete checklists or live evaluations of their students. The system can be adapted to suit an operator’s specific workflow (for e.g. a completed evaluation can be sent automatically to the Captain for verification and then to Human Resources for acknowledgement).

Alongside assessments, MarineLMS provides certificate management. Certificates can be awarded within the LMS automatically via configurable rules. Certificates can also be set to automatically expire and can be awarded or revoked manually by instructors/administrators. In addition to LMS-awarded certificates, MarineLMS can also track and manage certificate from external sources (i.e. maritime academies), giving operators a holistic view of their employee’s credentials.



## Company specific software

Marine Learning Systems works with the customer to completely customize their system, beyond merely changing a logo, to match company branding and processes. From custom navigational structure and workflows, to integration to crewing software and Single Sign-On, MarineLMS is 100% configurable.



## Analytics and Reporting

MarineLMS provides a range of reports and leading indicators that allow for organization-wide analysis and continuous improvement of training and assessment. Reports are compiled dynamically based on one's courses position within the system.

Our reports provide insights into the effectiveness of the training program. These analytics help you identify and understand where trainees are spending time on or are having difficulty. Exam performance analytics help you spot organizational trends, indicating weak areas to be improved upon before performance is affected. MarineLMS provides the oversight needed to ensure that learning is taking place, both on an individual and organization-wide basis.

**Question Performance Report**

Filter by Overridden: All | Filter by text: | Filter

Short ID	Question	Times Used	Correct	Incorrect	Unanswered	Times Overridden	Graph
13102	A line handler should	11	9 (82%)	2 (18%)	0 (0%)	0	[Bar Chart]
13108	The term "heave" means	11	6 (55%)	5 (45%)	0 (0%)	0	[Bar Chart]
13109	What is the best procedure for letting a line out?	11	9 (82%)	2 (18%)	0 (0%)	0	[Bar Chart]
13116	What type of knot is best used for tying two different lines together?	11	6 (55%)	5 (45%)	0 (0%)	0	[Bar Chart]
13124	What type of knot is best used for tying two different lines together?	7	5 (71%)	2 (29%)	0 (0%)	0	[Bar Chart]
13131	What type of knot is best used for tying two different lines together?	11	11 (100%)	0 (0%)	0 (0%)	0	[Bar Chart]
13151	What type of knot is best used for tying two different lines together?	11	11 (100%)	0 (0%)	0 (0%)	0	[Bar Chart]
13155	A. Bend	6	3 (50%)	3 (50%)	0 (0%)	0	[Bar Chart]
13155	B. Half Hitch	2	1 (50%)	1 (50%)	0 (0%)	0	[Bar Chart]
13164	C. Bowline	9	9 (100%)	0 (0%)	0 (0%)	0	[Bar Chart]
13186	D. Square	3	2 (67%)	1 (33%)	0 (0%)	0	[Bar Chart]
These are the answers currently associated with this question. Deleted answers will not show up here.							
		1 - 10 of 10					

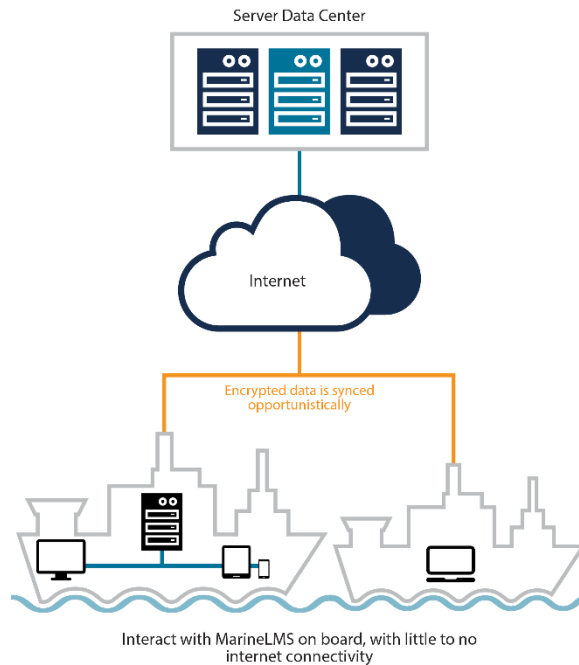
LMS Copyright © 2017 Marine Learning Systems Inc. v3.3.3-product:1-81789-cc264d8 (427919081) @ 10/30/2017 11:32:01 AM -07:00

## Remote Training Servers - On-board Training that Works

Training at sea poses a difficult challenge to the industry. Operators often need to deploy learning content and assessment to ocean-borne vessels, where internet connectivity is intermittent and expensive. Adapting general-purpose software (e.g. a mobile application that can work online) to work on-board is extremely complex and risk prone in a maritime environment.

Marine Learning Systems addresses this challenge with Remote Training Servers (RTS). Our architecture is specifically designed to work in disconnected environments. We ensure that consistent, up-to-date data and learning content can be accessed both on shore and at-sea.

An RTS is a full, vessel-based implementation for all Marine Learning Systems products. It supports training, assessment, and reporting functionality, regardless of whether the trainee is on-shore or on-vessel. Maritime personnel can access courses, perform assessments, check their competencies, and complete drills; data is automatically synchronized whenever possible. Users move seamlessly from vessel to shore, and to other vessels – without having to be aware of the system’s state of connectivity.



### **The advantages of Remote Training Servers (a vessel-based server) for offline learning are numerous:**

- Highly customizable synchronization that can be configured with a customer’s bandwidth requirements
- Synchronization occurs one time as opposed to multiple users downloading data individually through their mobile device
- Control over synchronization schedules across the entire fleet as opposed to mobile-application synchronization where each user updates their training records on their own time
- Differential synchronization minimizes bandwidth usage as only changes in the system (i.e. changes in content or specific reports) will be transferred

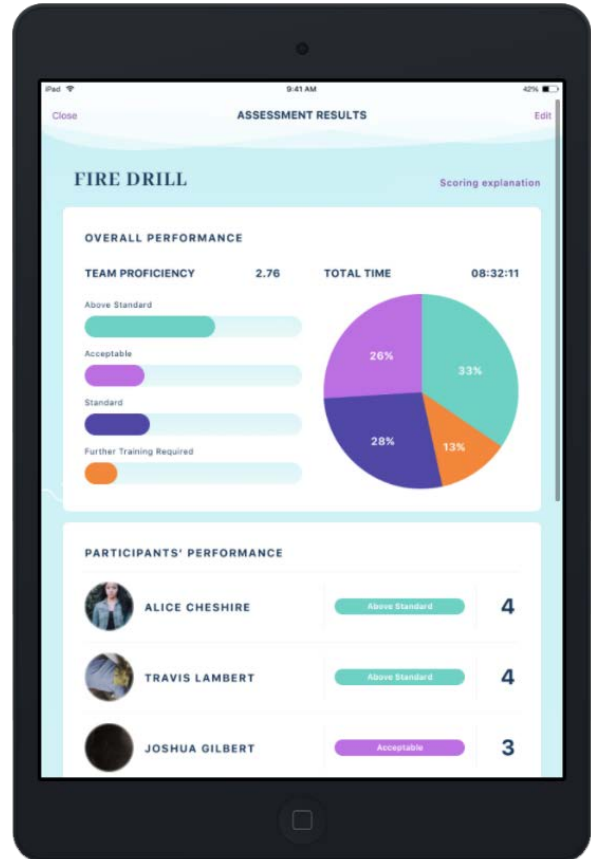
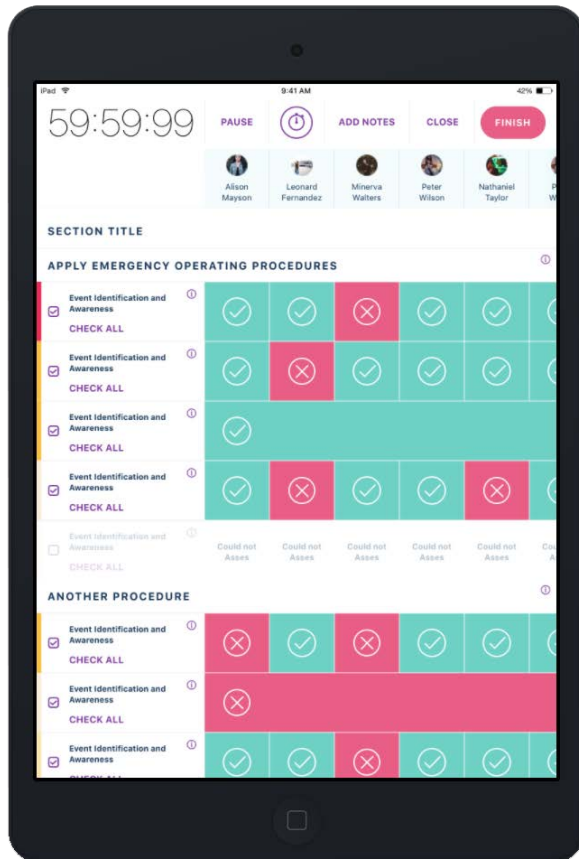
## SkillGrader - Real-time, Objective Assessment of Crew Skills

Maritime operators rely heavily on real-time assessment activities, such as drills, to ensure safety and compliance of employees. The SkillGrader allows operators to digitally record and track real-time skills performance assessment (e.g. fire safety drill, bridge team performance, confined space and entry drill, etc.), on an individual and team basis and according to company-configurable templates.

Any performance can be tracked and assessed on a mobile device and managed as a learning activity. Assessors can select from company-specific templates to create an evaluation form with assessment performance indicators. During the assessment, the assessor easily indicates on the app whether the trainees are performing the correct behaviours. Debrief notes can be added afterwards and a comprehensive report on individual and team results is automatically generated.

The system uses the broad set of data points captured to give a clear and objective overview of crew readiness. It unlocks deep insights regarding individual and group hard-skill performance such as:

- What percentage of the team passed the standards?
- Which skills or routines do individuals need additional training on?
- Are there behaviours or personality trends, such as assertiveness, within certain groups?
- Where are areas of strength, across the organization, where over-training can be reduced?



## Career Navigator - Employee Development and Competency Management

The Career Navigator is an employee- and management-facing system designed to track, nurture and develop employees as they progress through their career at their organization. It helps the organization understand the state of the workforce, build succession plans, and ensure that future needs are met.

Career Navigator core functionality includes the following:

- Competency management
- Learning plan timelines, management and tracking
- Employee assessment
- Employee nurturing, development and guidance from supervisors and mentors
- Transparency in terms of the strengths and improvement opportunities for each employee
- Reporting on organizational preparedness for regulatory compliance and safe operations

The Career Navigator ensures that employees have the required competencies, are encouraged and supported in professional development, and that management has deep insight into employee abilities both at the workforce and individual level.

The screenshot displays the Career Navigator interface for Murray Goldberg, supervising John Smith. The main section is titled 'John Smith' and shows a 'Learning Plan' with two tables: 'Upcoming Competencies' and 'Approved & Completed Competencies'. A vertical timeline on the right indicates the progression of these competencies over time.

Name	Score	Assigned	Required By
17 Fire Safety <span>0/17</span>		2 months ago	in 3 days
12 Introduction to the Boiler Room <span>11/12</span>		3 months ago	in 3 days
A Bow and Stern Thrusters <span>1</span>		a month ago	15 days ago

Name	Score	Assigned	Achieved on
2 Skill Enhancement Checklist <span>7/2</span>		a year ago	10 months ago
ECDIS & Radar		8 months ago	5 months ago
WHMIS		8 months ago	15 days ago
Vessel Tour		a year ago	15 days ago

The timeline on the right shows the following progression:

- Company History
- Vessel Tour
- Bow and Stern Thrusters
- WHMIS
- Introduction to the Boiler Room
- Fire Safety

A red dashed line labeled 'NOW' is positioned between 'WHMIS' and 'Introduction to the Boiler Room'.