



## **DYNAMIC POSITIONING CONFERENCE**

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**TRAINING/COMPETENCY**

# **Training Competency Assurance - Team Based**

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# History

- NASA study in 1979 “Resource Management on the Flight Deck”
- Human Factors –
  - Interpersonal communications
  - Decision-making
  - Leadership
- Cockpit Resource Management created
- Evolution of Cockpit Resource Management
  - Team building and Group dynamics
  - Situational awareness
  - Stress management
  - Full mission flight simulators
- Crew Resource Management: "The effective use of all resources to include human and other aviation system resources."

# Advanced Crew Resource Management (ACRM)

- FAA guidelines created in 1998
- Standardization of training
  - Instructors and evaluators
  - Airline crews
  - Ground based personnel
- Incorporate CRM into company's normal and emergency standard operating procedures
- Reinforce CRM practices onboard the aircraft

# Maritime Connection

- 1987 study by the Dutch showed 96% of incidents reviewed human error was a contributing factor
  - Incorrect decision
  - Improperly performed action
  - Improper lack of action (inaction)
- Recognition of similarities between aviation industry and maritime industry
- CRM was modified and become BRM – first class held in 1993
- 1995 USCG study of incidents results
  - Fatigue
  - Inadequate communications between pilot and bridge crew
  - Inadequate technical knowledge

# International Maritime Organization

- Seafarers' Hours of Work and Rest in 1996
- Mandatory RADAR training
- International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code) became mandatory in 1998
- 2<sup>nd</sup> International Workshop on Human Factors in Offshore Operations in 2002
  - Inadequate communications
  - Decisions based on inadequate information
  - Poor judgment
  - Poor maintenance
  - Faulty standards, policies, or practices
  - Inadequate technical knowledge
  - Poor design

# International Maritime Organization

- 2010 Manila Amendments to STCW
  - Bridge Resource Management
  - Engine-room Resource Management
  - Leadership and Managerial Skills
  - Application of Leadership and Teamworking Skills
- IMO provided overview of training requirements for each class but there are no requirements for standardization in methodology
  - Use of simulators is optional
- Classes are intended to address human factor problems
- Does not directly address problem with competent people working in a team environment.

# Maritime Training Today

- On the Job Training
- Technical knowledge based classes – Industry mandated
  - STCW ECDIS
  - STCW GMDSS
- Technical equipment based classes
  - STCW type specific ECDIS
- Simulator Classes
  - STCW Advanced Fire Fighting
  - NI DP Simulator Course
- Additional Training
  - Major Emergency Management / Person in Charge
- Company Classes
  - ISM training

# Maritime Training Today

- Completion of training equates to the employee being competent
- Individual competency does not equate to group competence
- The Aviation's Advanced Crew Resource Management package addresses the need for group competency
- No analogous package in the Maritime Industry



# Team Based Competency

- Take competent employees and turn them into a competent team
- Standardization of human factors training for the company
- Tests effectiveness of policies and procedures
  - Utilize company's SMS manual
- Verify employees' knowledge of policies and procedures
- Integrate all the groups responsible for safe operations in order to create a team mentality

# Class Composition

- Key personnel from vessel
  - Bridge
  - Engine Room
  - Additional groups
    - Drilling
    - ROV
    - Construction
    - Crane
    - Health, Safety and Environment personnel
- Key shore side personnel
  - Marine department / Designated Person Ashore
  - Vessel manager
  - Technical support teams

# Class Structure

- Classroom time with simulator time to reinforce classroom materials
- Materials taught are human factors and debriefing/self evaluation skills
  - Ability to recognize when human factors start influencing operations
  - Ability to address this issue and evaluate what is going on and how to proceed
- Exercises designed to create conditions that could lead to loss of situational awareness and human factor influences
  - Distractions
  - Workload
  - Misplaced priorities
  - Too many things to keep track of
  - Shift change
- Not intended to be a technical class

# Integrated Simulators

- Full mission simulators
  - Ideally vessel specific and possibly job specific
  - Lack of standardization amongst vessels
- Inability to be vessel or job specific does not detract from training objectives
- Just needs to be the same type of vessel performing a similar job
- Difficult to fully integrate all groups
- Advances in simulator technology
  - Fully integrated engine room, bridge, and crane simulators are possible
- Simulators for vessel's purpose – not directly integrated
  - Drilling simulators
  - Pipelay Simulators
  - ROV simulators

# Training Retention

- Employee buy in
  - Direct connection between training and their job
    - Company specific SMS
    - Shore Side involvement
- Cross Sensory learning
  - Use of full mission simulators to reinforce the learning from classroom
- Feedback
  - The employees will first provide their own feedback
  - Instructor feedback
    - Stress what went well
    - Discuss areas for improvement and what can be done to address those area.
    - Take away – how this will be utilized on their vessel

# Advantages of Team Based Training

## Team Competency

- Employees will have better understanding of their SMS
  - Utilize procedures in simulator that are not frequently used (Emergency)
- Better interdepartmental communications and operations
- Attitude will not change based on which crew is onboard or on watch
- Improved safety
- Improved operational efficiency
- Standardized training within the company
  - Standardization of operations on all vessels within the company
  - Transferring personnel will not result in disruptions in operations

# Team Based Competency

- Successful results in the aviation industry for decades - ACRM
- NASA team based and full mission simulations
- Utilized in other industries with positive results
- Starting to be utilized in the drilling industry – Team Based Well Control Classes
- Utilized in the offshore drilling industry for the last two years
  - Improved performance, reduced down time, under budget
  
- It is time for the maritime industry to more aggressively utilize CRM and team based training methodology to insure that not just the employee is competent, but the vessel's crew is a competent team.