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
- 2nd 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.