ABS Guide for Ergonomic Notations
Why the ABS ERGO Notations?

- Owner and Operator
  - Interested in improving crew safety
  - Increase crew performance / productivity
  - Decrease costs
- ABS Activities
  - Revisions of existing ABS HAB Guides
  - ABS research into mariner personal safety
  - Revision of Ergonomics Guidance Notes
- IMO and Industry Initiatives
  - Goal Based Standards (GBS) initiatives
  - ILO Maritime Labour Convention
ABS Guide for Ergonomic Notations

- Addresses structural aspects of four vessel areas
- Can be applied to ships or offshore structures
- Ergonomic notations for:
  - Topside interface design (ERGO TOP)
  - Enclosed space and hull interface design (ERGO ES)
  - Maintenance access and design (ERGO MAINT)
  - Valve locations, access and operation (ERGO VALVE)
- Requirements limited to human and vessel structure compatibility
  - Anthropometry
  - Biomechanics
  - Reach and working envelopes
- Cognitive factors not addressed (e.g., information display)
- Environmental factors not addressed (e.g., noise, vibration)
Human Interface Structures

- Stairs, walkways and ramps
- Vertical and inclined ladders
- Guard rails and climber safety devices
- Fall protection from secondary fall points
- Work platforms
- Handles
- Hatches
- Doors and scuttles
- Manual valve operation, access, location, and orientation
- Maintenance access
Ergonomic Related Crew Near Misses

Chart data represents ~22% of all crew near misses
Ergonomic Related Crew Injuries

Chart data represents ~24% of all crew injuries
ERGO TOP (Topsides)

- Generally addresses vessel areas from the main deck (weather deck) upward
- Involves structures and accesses
  - Ladders and landings
  - Climber safety devices
  - Platforms
  - Stairs
  - Walkways
ERGO TOP (example)
ERGO ES (Enclosed Space)

- Areas within the hull, below the main deck
- Similar coverage as topsides, tailored for cargo and machinery access including:
  - Ladders and walkways
  - Hatches and passages
  - Lifting devices
  - Doors and scuttles
ERGO ES (example)
ERGO VALVE

- Addresses design and accessibility of valves
- Manual and motor operated (for maintenance)
- Topics include:
  - Valve criticality and location, access, reach envelopes
  - Mounting heights and orientations
  - Mode(s) of operation, biomechanics of operation
  - Force requirements, support devices (extenders, bars)
ERGO VALVE (Valve Criticality Analysis)

- Category 1 – valves critical for safety or operations or are also used frequently for routine maintenance
  - Example
    - Emergency shutdown valves
- Category 2 – valves not critical for operations but required for routine maintenance
  - Example
    - Condensate drain valves
- Category 3 – valves not critical for operations and are infrequently used
  - Example
    - Valves used in drydock only
ERGO MAINT (Maintenance)

- Addresses maintenance accesses and workspace, generally on or below the main deck
- Topics include:
  - Access openings, maintenance platforms
  - Reach and access envelopes
  - Space for tools and parts storage
  - Provisions for storage
  - Lifting and moving devices
  - Safety devices
ERGO MAINT (Maintenance)

- **Category 1 Maintenance or Operational Access**
  - Maintenance/operational actions that are system and safety critical

- **Category 2 Maintenance or Operational Access**
  - Maintenance or operational actions that are performed frequently

- **Category 3 Maintenance or Operational Access**
  - Maintenance or operational actions which are considered to be non-critical
Thank You

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