

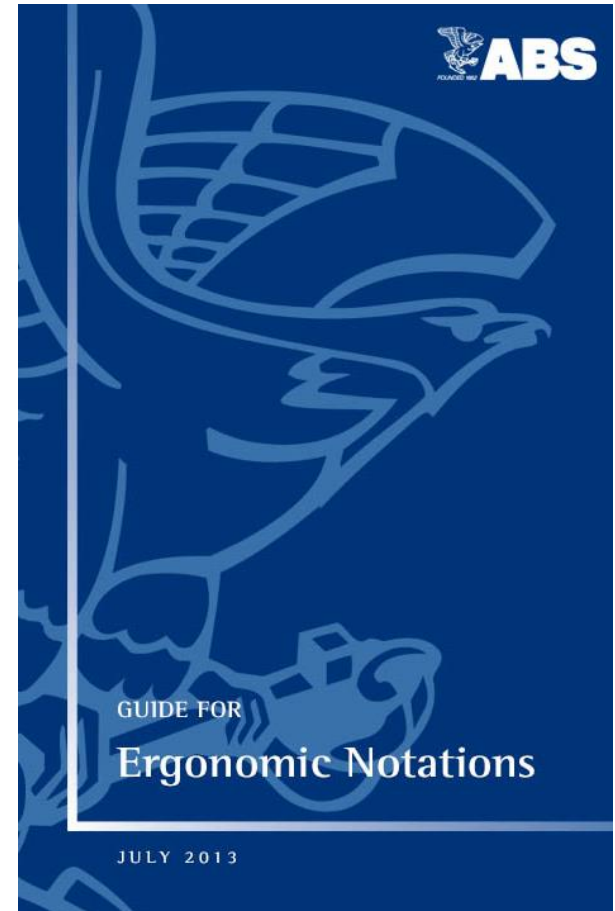
An aerial photograph of a large red offshore supply vessel, likely a supply ship, sailing on the open ocean. The vessel's deck is visible, showing various equipment, ladders, and a crane. The ship's superstructure is white, and the hull is a vibrant red. The sea is a deep blue, and the sky is clear.

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

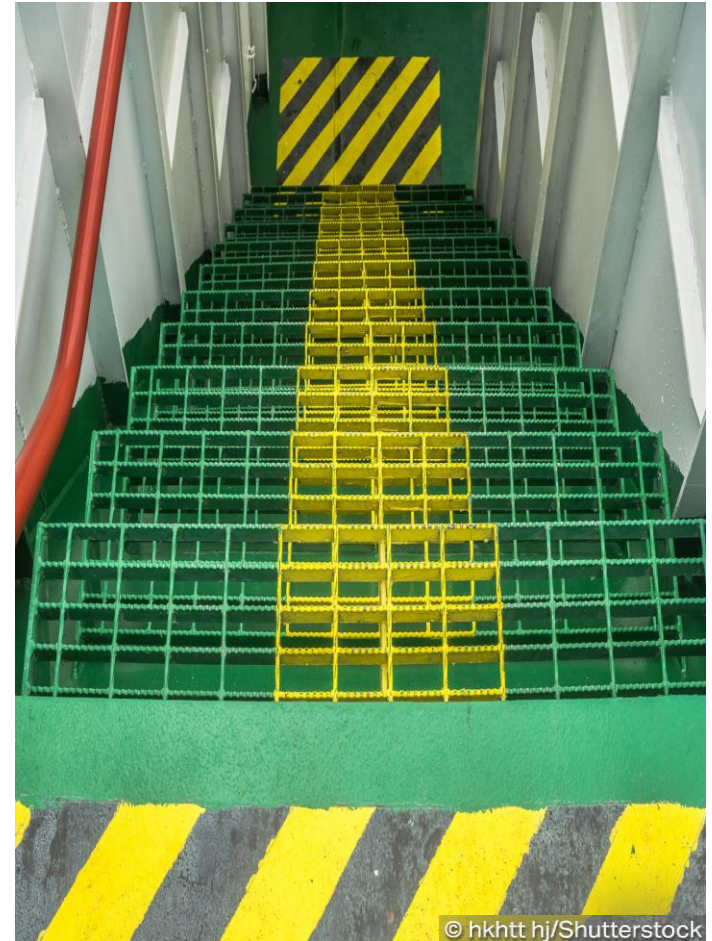


ABS Guide for Ergonomic Notations

- 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

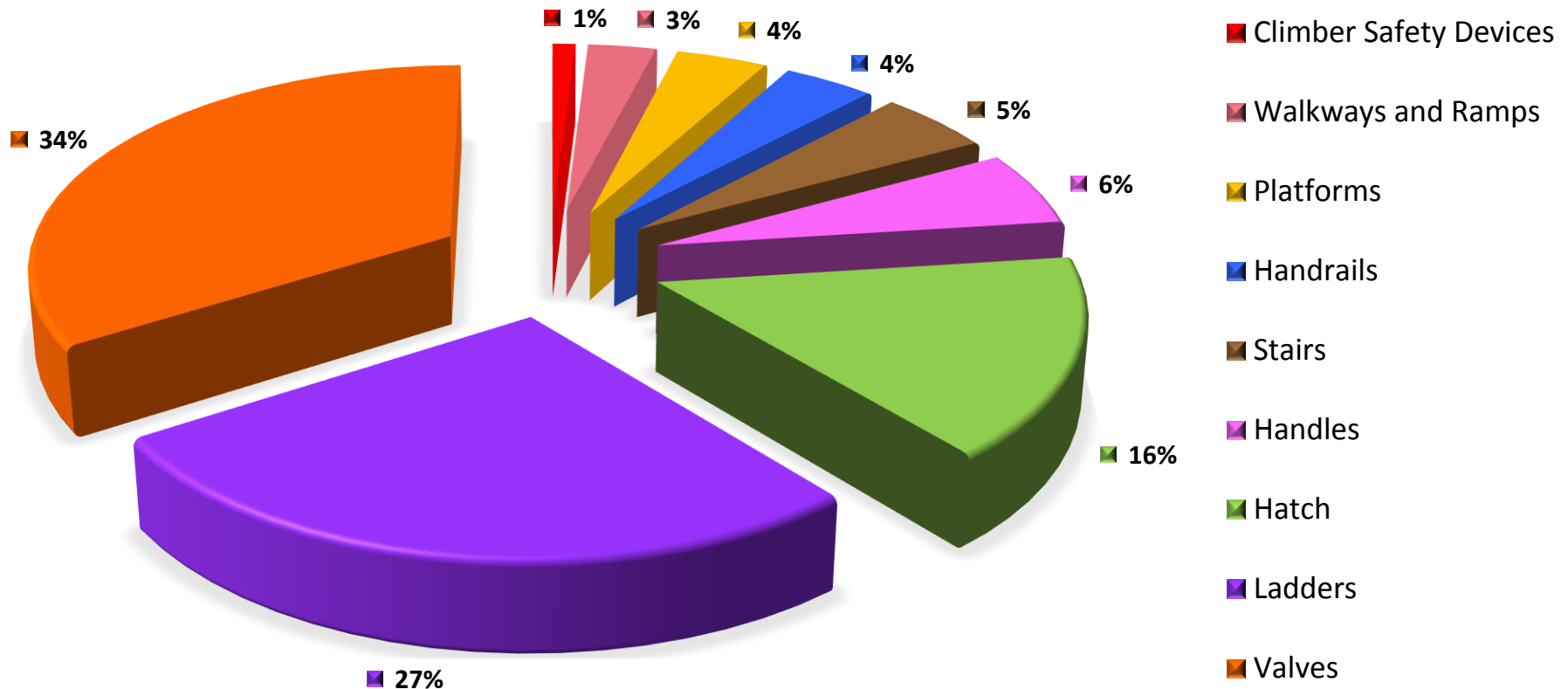


Chart data represents ~22% of all crew near misses

Ergonomic Related Crew Injuries

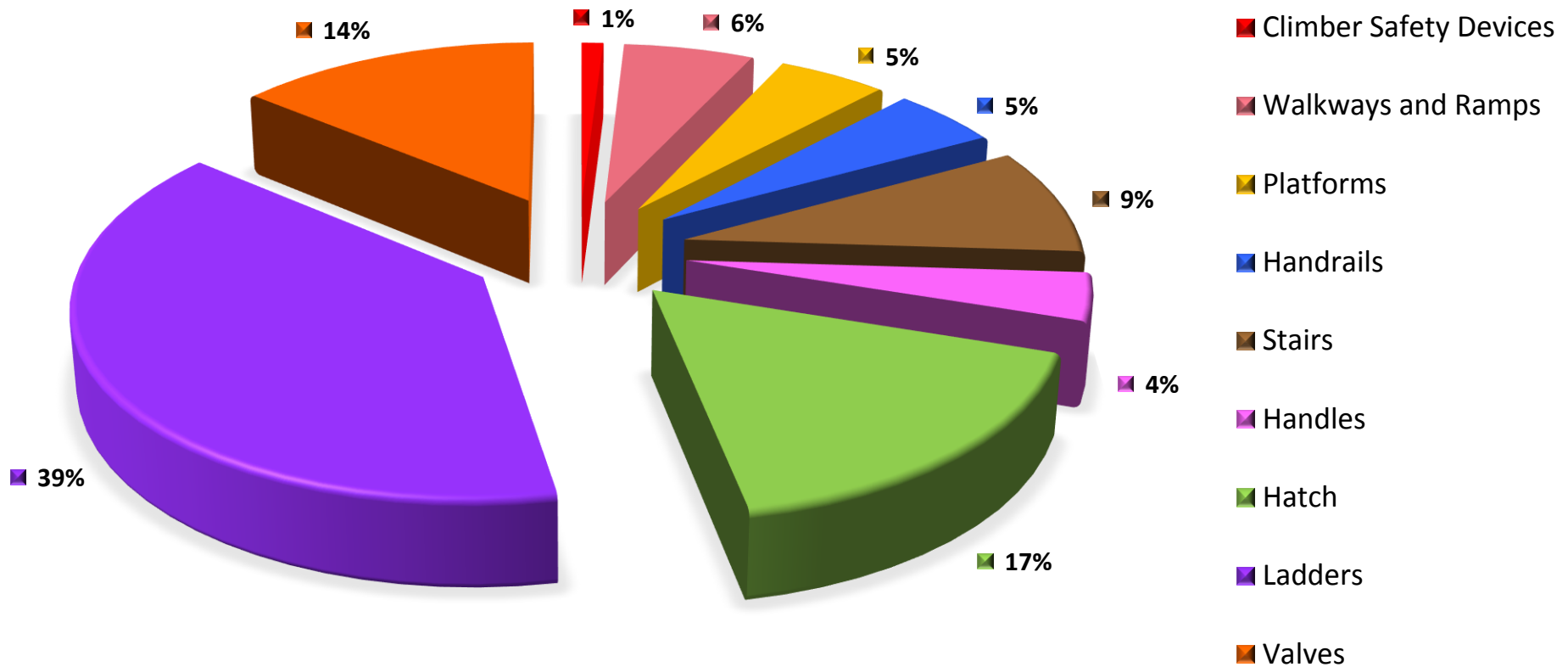


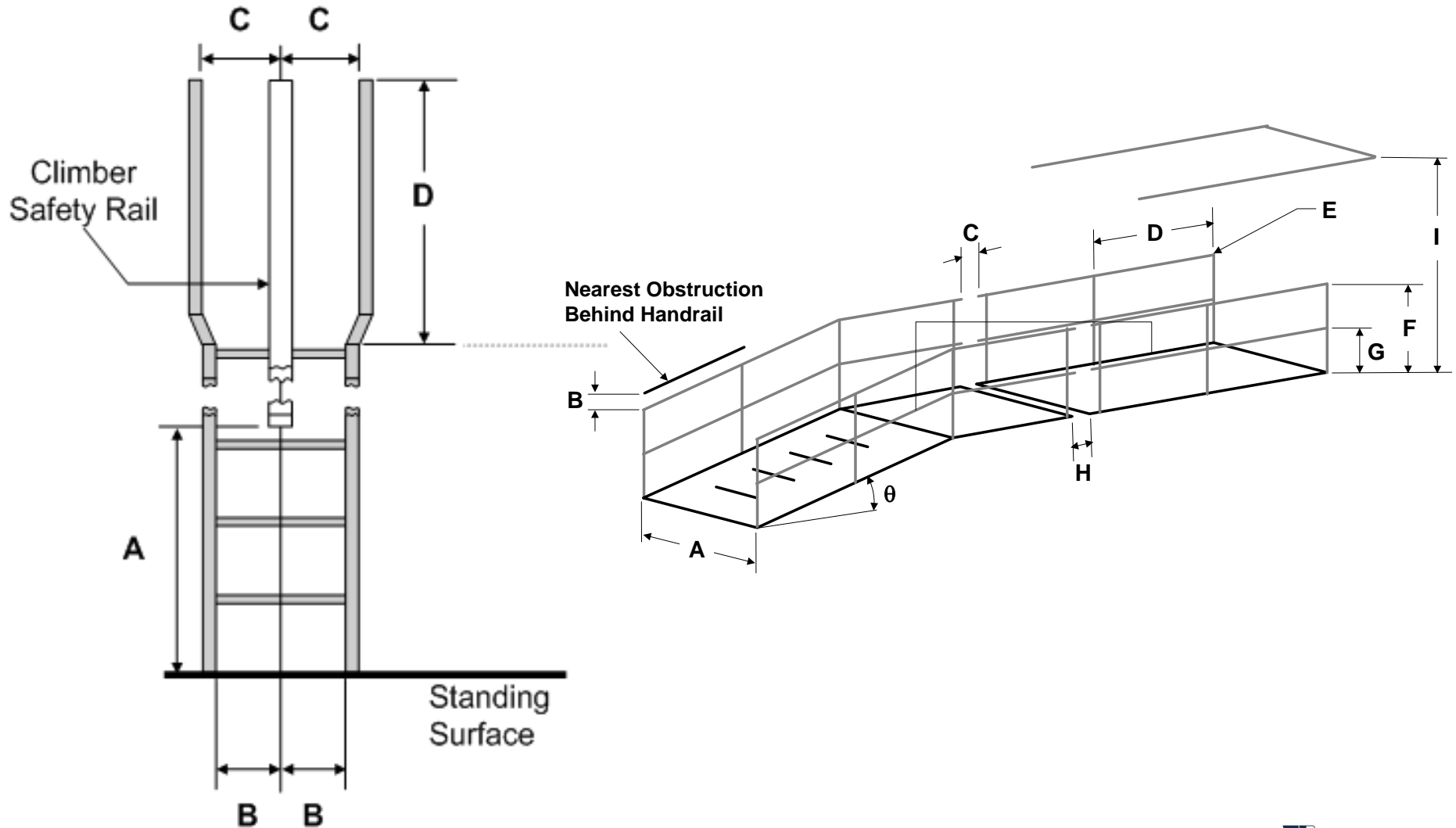
Chart data represents ~24% of all crew injuries

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)

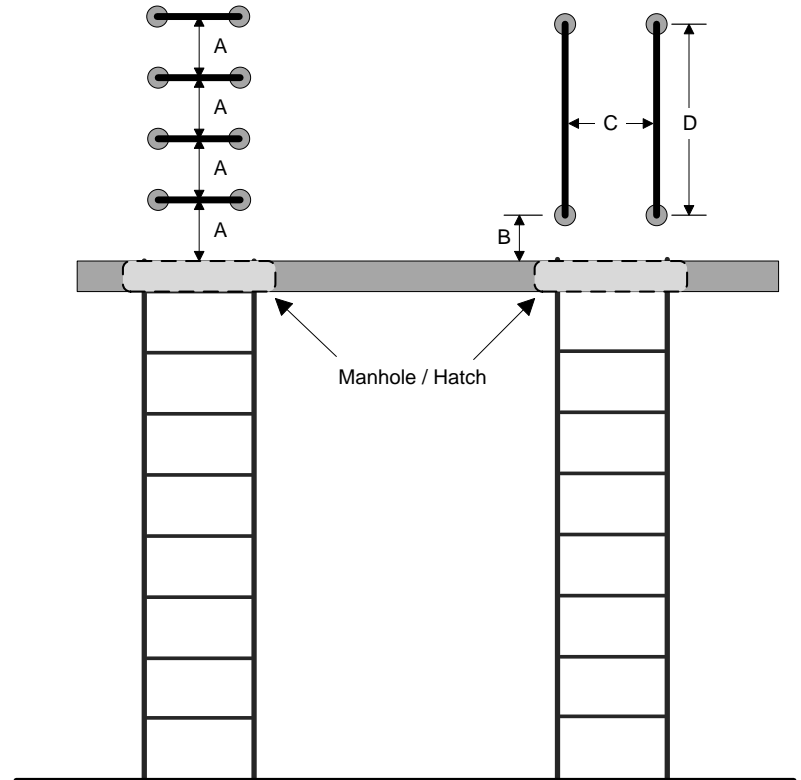
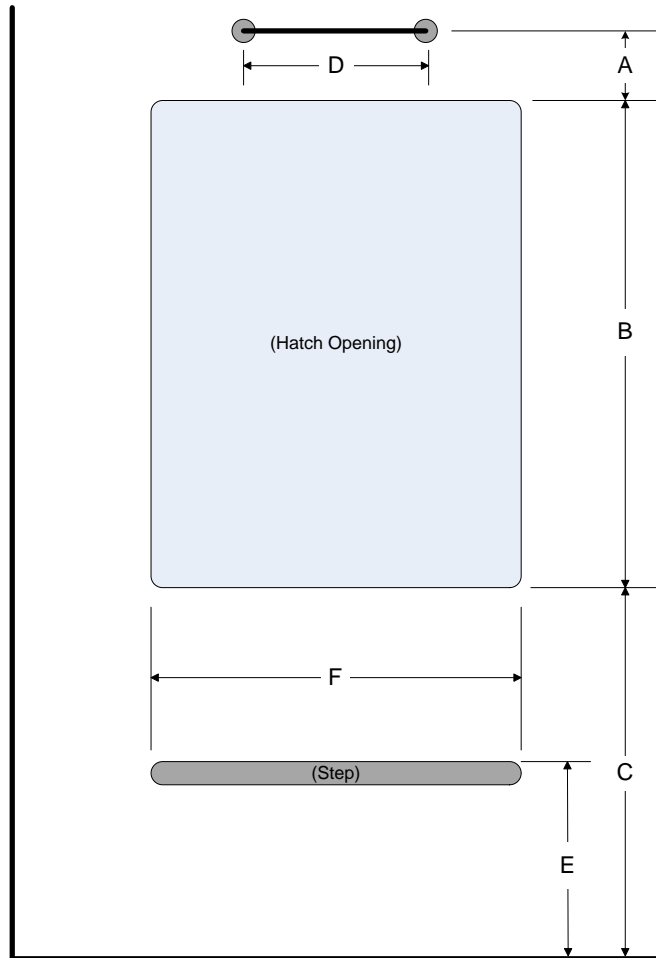


ERGO ES (Enclosed Space)

- 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

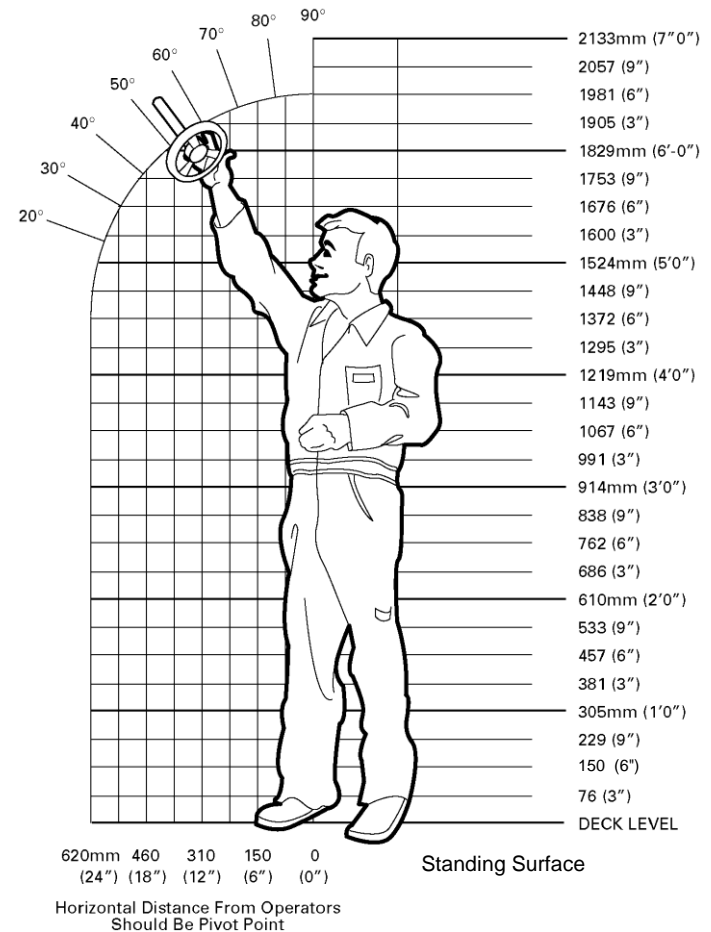


ERGO ES (example)



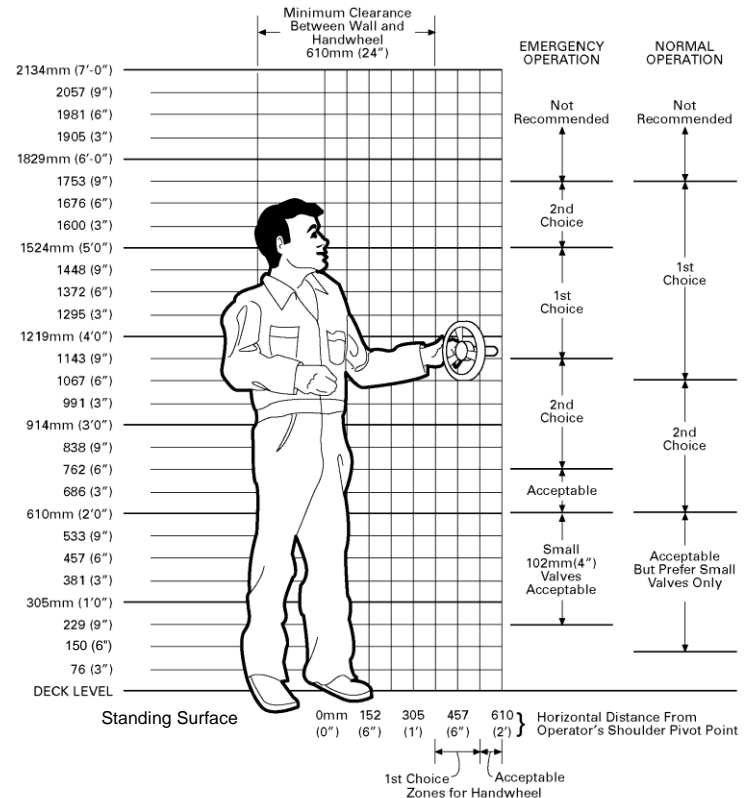
ERGO VALVE

- 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)



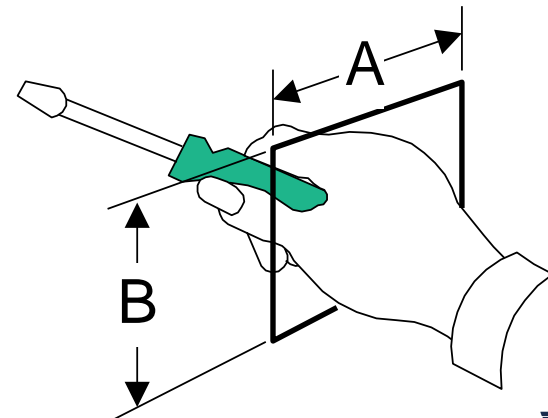
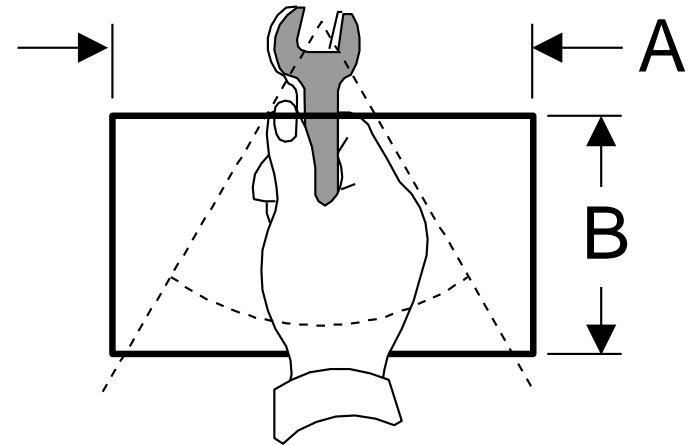
ERGO VALVE (Valve Criticality Analysis)

- 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



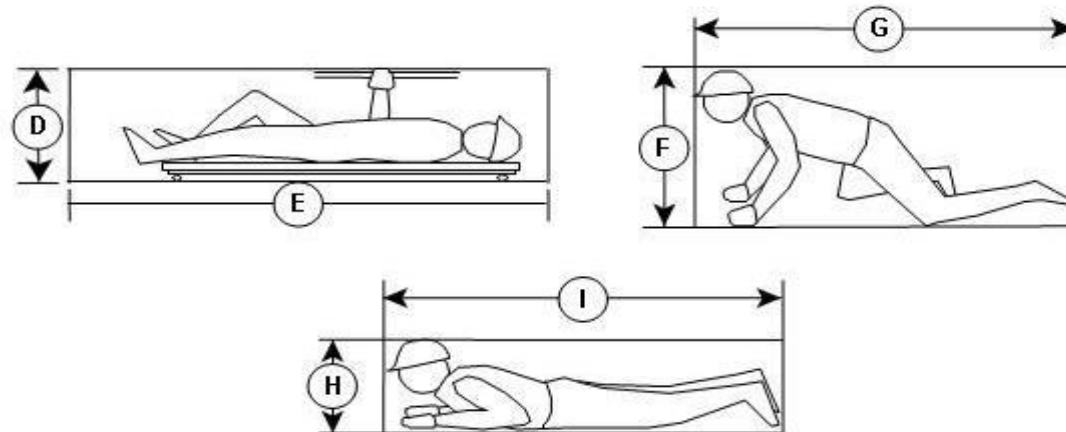
ERGO MAINT (Maintenance)

- 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

www.eagle.org