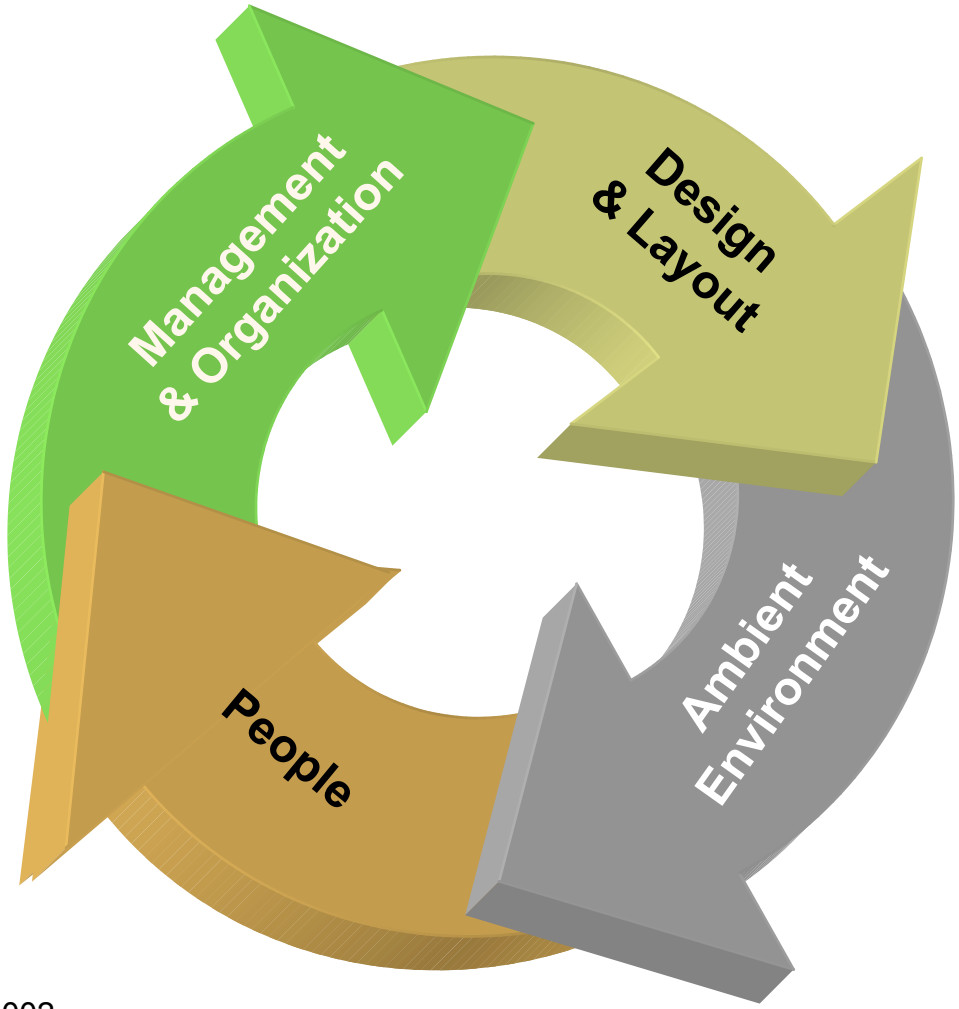
Practical Approaches to Marine Terminal Human Factors

Denise B. McCafferty

ABS Model

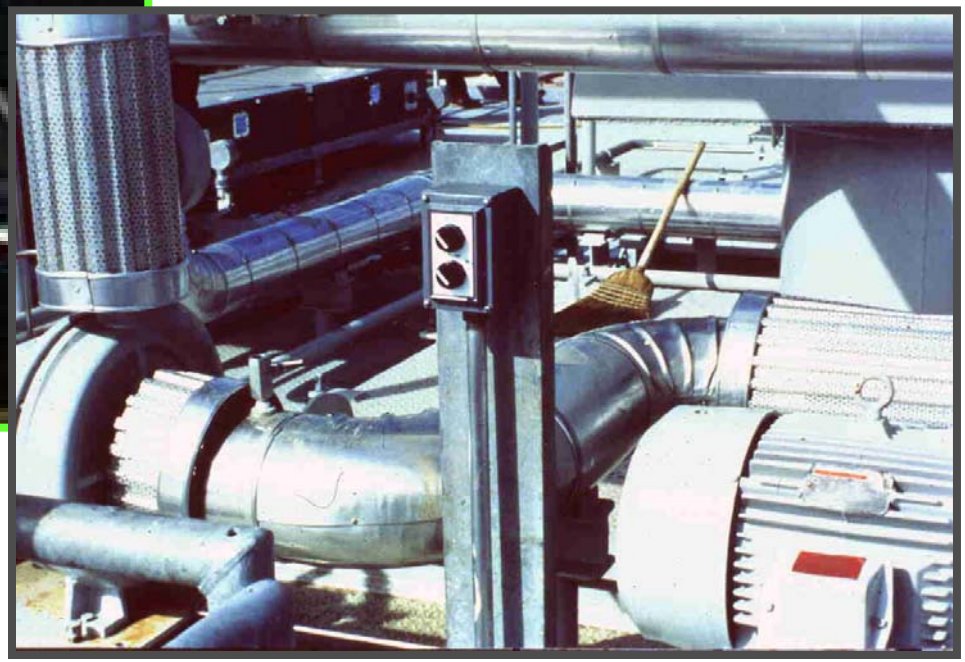

Management & Organization
Design & Layout
Ambient Environment
People

Management Systems

- The most influential factor with regards to the potential for human error
- Auditing techniques, like Safety Assessment of Marine Systems (SAMS), can assess Safety Management System (SMS) effectiveness

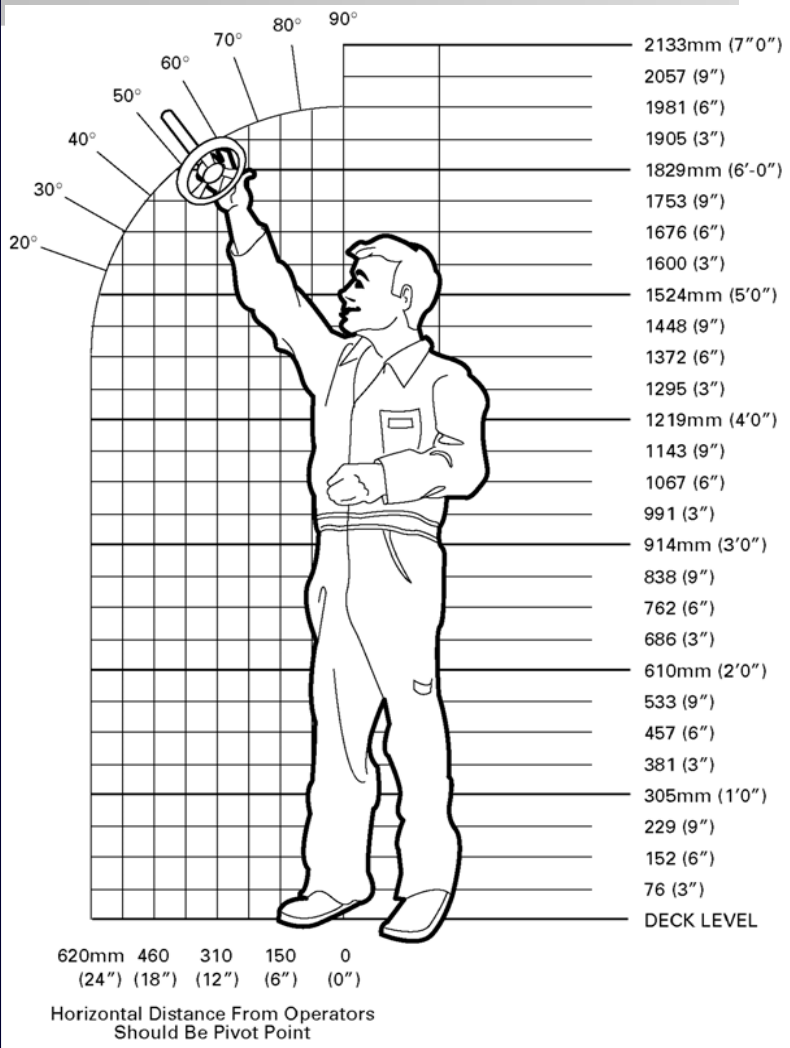
Design and Layout

Cultural Expectations



ABS

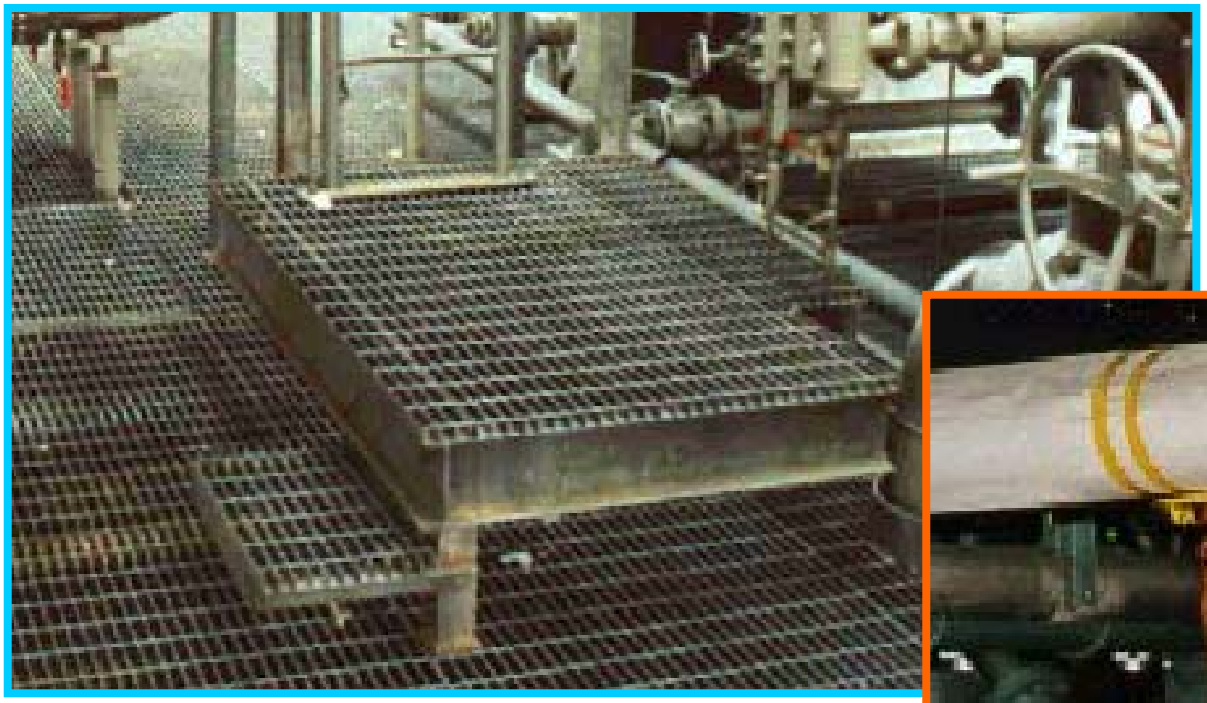
Anthropometry



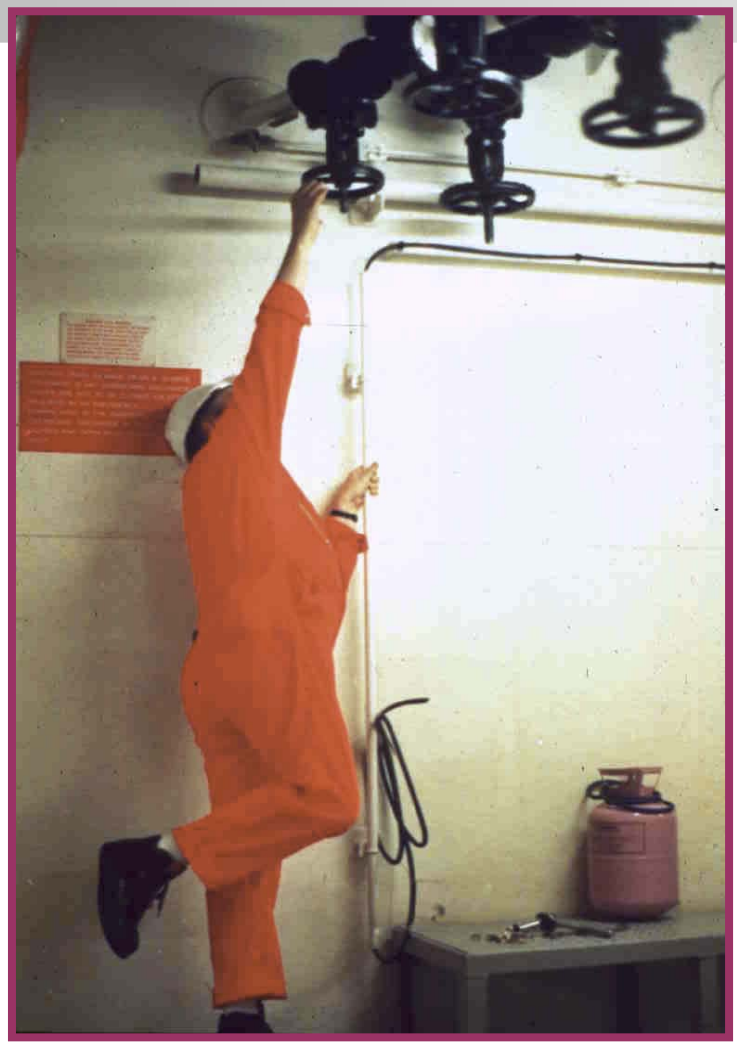
Anthropometry refers to the physical dimensions of the human body based on sex, race, and origin

Stair,Ladder & Ramp Design

Walkway Hazards



Valve Height and Orientation



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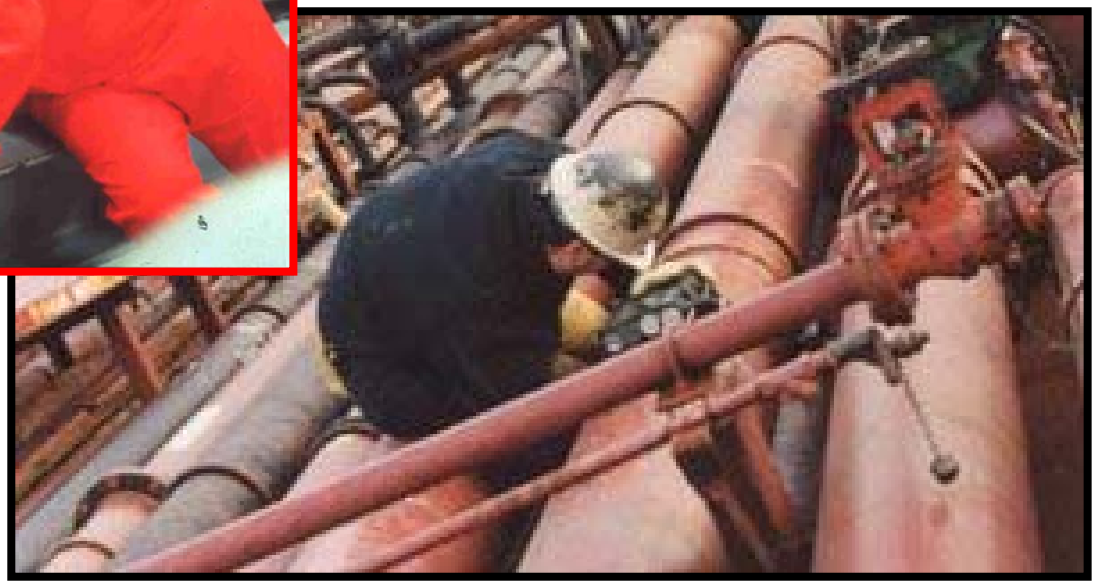
Valve Criticality Analysis

- Provide guidance to:
  - formalizes the decision process for determining the location of valves
  - to facilitate access for operations or maintenance

Equipment Accessibility

Equipment Accessibility



Labeling/Coding

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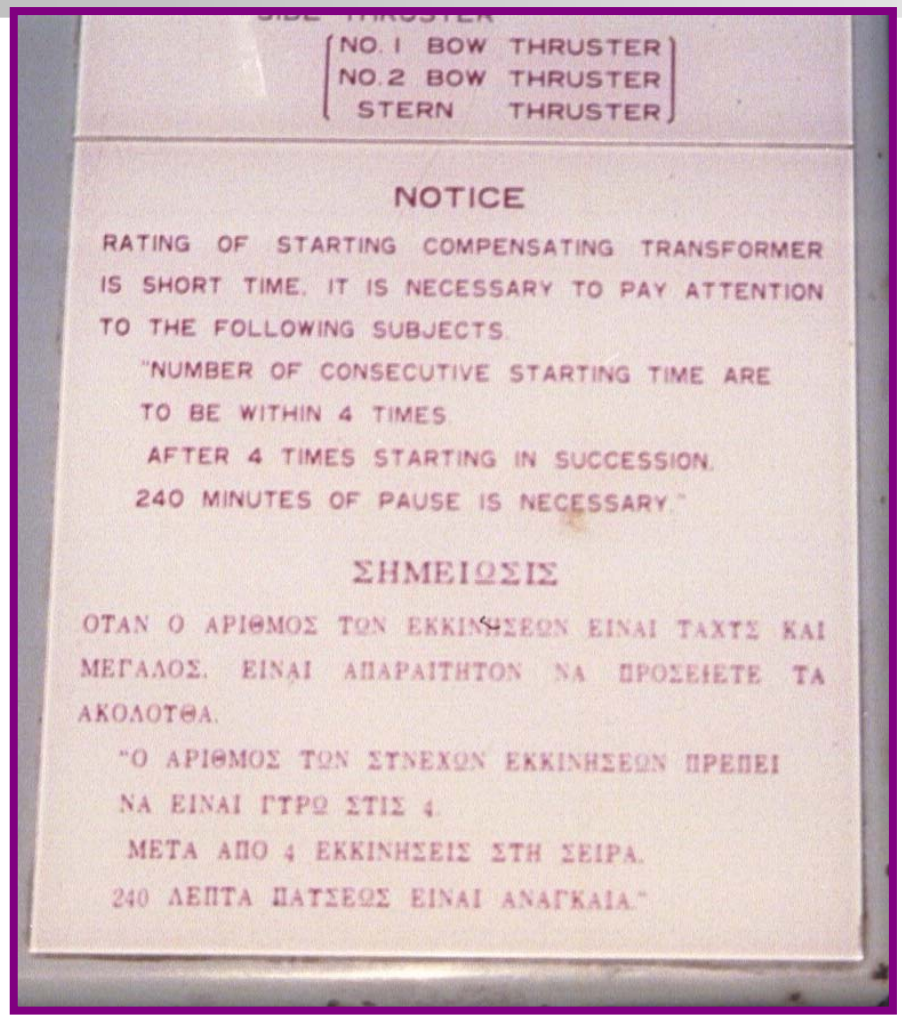
Instructions/Procedures



- Should:
  - use common terms
  - use appropriate language
  - be clear
  - be concise
  - use proper grammar
  - be consistent

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Hazard/Warning Labels

- These labels should:
  - use a signal word (e.g., Danger)
  - state the hazard
  - tell you how to avoid the hazard
  - state potential consequences
  - always be visible

Environmental Issues

Lighting

Noise

Communications

- IMO Speak, Constrained Language
- Communication Protocols for
  - Ship-to-shore
  - Control Rooms
  - Tank Farms
- Emergency (including USCG and other regulators)
- Throughput Quality

Other Personnel Issues

- Emergency Drills
- EER Planning
- PPE Design
- Behavioral Based Safety

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