



Other Accesses

Providing appropriate means of access designs are not limited to just the stairs, ladders, walk-ways, etc. As an example, vessels often have lighting holes provided in bilge tanks, fuel, oil, and potable water tanks, as well as void spaces. Not only are these holes cut to help lighten the weight of the vessel or structure, but they also serve as crew member access routes during tank inspection and/or maintenance are required. These holes can be cut and located to maximize access for crew members without compromising the vessel or offshore installation structural integrity.

Dimensions and orientation of hatches, man-ways, lightening holes, inspection ports, kick-out panels (or any opening used by a crew member to pass or reach through) should be determined by the user's anthropometry, body postures required to use the opening (i.e., does the person step through, reach through, crawl through, or look through), and the tasks required of the person once the opening is passed. In addition, access openings which are used for emergency ingress or egress of spaces are routinely made larger and easier for passing through than openings in-frequently used (such as entry into bilge tanks for inspection). However, in keeping with a good safety philosophy that design should be directed at the worst case scenario, openings into tanks in which a person could be rendered unconscious should be suitably large to accommodate the removal of that person.

REFERENCES

- Agnew, Jacqueline and Suruda, Anthony. "Age and Fatal Work-Related Falls", *Human Factors*, 35(4), pp 731-726, (1993).
- ABS. "Guidance Notes on the Application of Ergonomics to Marine Systems." Houston, TX. March, 2013.
- ABS. "Guide for Means of Access to Tanks and Holds for Inspection." Houston,, TX. April 2007.
- American Society of Testing and Materials. "Standard Practice for Human Engineering Design for Marine Systems, Equipment, and Facilities". ASTM Standard F1166. West Conshohocken, PA, 2013.
- Templer, John. "Staircase Studies of Hazards, Falls and Safer Designs", MIT Press, 1992.
- Templer, John, Archea, John, and Cohen, Harvey. "Study of Factors Associated With Risk of Work-Related Stairway Falls", *Journal of Safety Research*, Vol 16, pp183-196, 1985.
- Zohar, Dov. "Why do we Bump Into Things While Walking", *Human Factors*, December, 1978