



### INTRODUCTION

Habitability can be defined as “the acceptability of a structure (as determined by its noise, vibration, motion, or other characteristics) according to prevailing standards for human comfort or efficiency” (ABS, 2012; ABS, 2012). "Other characteristics" include the quality of temperature and lighting conditions, and the physical design that affects the livability of a space. Noise and vibration levels, thermal comfort (heating, air conditioning, ventilation, and humidity), and lighting levels are ambient environmental factors that can impinge on working and living spaces. The physical design includes personnel living and working spaces, berthing areas, recreational facilities, mess areas, and workstations.

#### Terms/Definitions

**Accommodations:** Interior vessel and offshore installation areas in which the primary purpose is to work, rest, or recreate. Accommodations spaces include cabins, staterooms, medical facilities or sick bays, offices, bridge and engineering stations, and public and recreation rooms.

**Ambient Environment:** The environmental conditions the crew is exposed to during periods of work, rest, and leisure.

**Anthropometry:** Data relating to physical body dimensions. It includes body characteristics such as size and breadth; distances between anatomical landmarks such as elbow to finger-tip; and height measured from the bottom of the feet to the top of the head.

**Crew Member:** A person on board a ship or offshore installation who is neither passenger nor observer.

**Crew Spaces:** Areas on a vessel intended for personnel only such as crew accommodations spaces and crew work spaces.

**Ergonomics:** The scientific discipline concerned with the understanding of interactions among humans and other elements of a system and the profession that applies theory, principles, data, and methods to design in order to optimize human well-being and overall system performance (International Ergonomics Association, 2009).

**Habitability:** The acceptability of the conditions of a vessel in terms of vibration, noise, indoor climate variables, and lighting as well as physical and spatial characteristics according to prevailing research and standards for human efficiency and comfort.

**Vessel:** Ship, boat, or offshore installation where personnel work, live, and are subjected to the marine environment.

### DISCUSSION

#### Level of Concern

The major objective of designing for habitability is to provide a design that will enhance and help maintain human performance, mental alertness, and comfort with the goal of promoting the general well-being of maritime personnel. Appropriate levels of habitability can improve work performance, productivity, quality of life, morale, safety and comfort. They can also reduce human fatigue.

Inappropriate habitability design can cause danger to physical and psychological health at a potentially high cost to the individual, owner, and industry.

Recent reports by the International Maritime Organization (IMO) indicate crew member fatigue is increasingly recognized as a significant factor in maritime accidents (MCS/Circ.565). Crew member fatigue can jeopardize ship and crew safety if it leads to human error. Evidence of the role human error plays in maritime accidents has been provided by recent submissions to the IMO (MSC 71/INF.8; MSC 69/INF.16; MSC 68/INF.15; MSC 69/INF.15).