

ERGOS

Human Factors Engineering



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Cabin innovation by Human Factors design



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Main purpose of crew cabins on a ship is to provide a comfortable and quiet place to sleep. Single-person cabins, both thermal and acoustic insulated, with good quality mattresses are now standard in shipbuilding. Apparently, this basic requirement is covered yet, so what is the next step?

Regarded from a Human Factors / Ergonomics point of view, it is possible to bring the cabin design to a next level of improvement by applying psychological principles about human behavior and wellbeing. A good idea, since a clever designed interior contributes to the crew's comfort. A proud and happy crew is more motivated and more likely to stay at the company.

The picture above shows a mid-sized crew cabin (15 m²), in which we incorporated 24 subtle innovations, based on Human Factors design principles. Together, they create a practical, nice and cozy cabin. Only standard maritime components and wheel mark approved materials were applied. The design is compliant with regulations and can be built without additional costs.

Below are 5 interesting design tips:

Perceived cabin size

Arrange the most commonly used sitting furniture like settee and bed, in a way the user can overview the majority of the room space, specifically at ceiling level, to maximize the 'perceived cabin size'.

Colors and materials

Use a balanced mix of colored surfaces, grey tones and textures to make the room visually more appealing.

Two colors, two grey tones and one or two wood patterns will usually do the trick. Have a look at the effect of the blocked bed cover: the pattern adds a bit of variation to the plain colors of the other furniture elements, making it visually more interesting. Avoid using hard materials only, like vinyl flooring and fake leather upholstery. Carpet and textile fabrics feel more comfortable and have better acoustic characteristics too.

Sensible decoration

The wall picture of the lighthouse landscape brings a 'touch of home' into the cabin – in this case for a Dutch population. Using exterior sceneries for decoration can also contribute to the perceived cabin size. Note that the picture scenery (horizon), continues in the real-world window next to it.

Daylight and artificial light

Lighting should be functional, but also interesting. Avoid a flat and even light level in the entire cabin. A combination of direct, indirect and spot lighting gives the best

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results. In the picture this is accomplished by using a ceiling light, wall mounted light, and two reading lights.

Use multiple windows whenever possible, preferably on different walls. This results in a better and more natural light distribution.

Shower curtain

Shower curtains are commonly used in wet units to prevent everything gets wet when taking a shower. Because of the upward airflow while showering, the plastic curtains tend to fold inwards and annoyingly 'stick' to the user's body. A better solution is to use a glass door panel or a fixed separation wall panel.

Interested in the complete list of ergonomic design improvements, or in more do's and don'ts concerning Human Factors of ship's design?

Please let me know, and I will dedicate another article to your question. Or take a look on www.maritime-ergonomics.com