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Reference to: Rules on noise Regulations of 1 January 2005 No. 8 on the working environment, health and safety of persons working on board ship

Noise on vessels of less than 1,600 gross tonnage

The Norwegian Maritime Authority (NMA) would like to emphasise that the requirements regarding noise, risk assessments and preparation of noise survey reports also apply to vessels of less than 1,600 gross tonnage. This Circular provides guidance on the documentation that should be submitted to demonstrate compliance with the noise exposure requirements.

It is stated in the [Regulations of 1 January 2005 No. 8 on the working environment, health and safety of persons working on board ship](#) (HSE Regulations) section 2-2 third paragraph that if a risk to the safety and health of persons working on board is identified, the necessary measures shall be taken to eliminate or reduce the hazards.

Prevention: Section 15-2 of the HSE Regulations requires systematic prevention of noise and continuous reduction of risk arising from exposure to noise based on the general principles set out in chapter 2 of the Regulations.

Systematic prevention could include technical noise-reducing measures, the use of hearing protectors or earplugs, not staying in the same area all the time, regulation of the duration of exposure, etc.

Risk assessment: Section 15-3 of the HSE Regulations requires that before the vessel is put into service, risk assessments of the noise levels to which the persons working on board are exposed shall be carried out. New risk assessments shall be carried out when significant changes affect the noise exposure. The health of persons working on board should be the main focus when carrying out risk assessments

Noise survey report: Section 15-28 of the HSE Regulations requires that a noise survey report shall always be carried on board and be accessible for the persons working on board. The report shall comprise information on the noise levels in the various spaces on board and show the reading at each specified measuring point. The points shall be marked on a general arrangement plan, or on accommodation drawings or in another explanatory way.

Assessment of noise level: Section 15-18 of the HSE Regulations sets limits for which noise levels will be considered too high.

Cf. section 15-18 of the HSE Regulations	Lower exposure action values	Upper exposure action values	Exposure limit value
$L_{ex,8h}$ [dB(A)]	80	85	87
p_{max} [dB(C)]	135	137	140

When the vessel is in normal operation, it must be documented that the persons working on board are not exposed to daily noise exposure levels ($L_{ex,8h}$ dB(A)) exceeding the action values referred to in the above table. The values must be measured within an eight-hour working day. The peak sound pressure (p_{peak} dB(C)) must also be measured.

Space requirements: The HSE Regulations section 15-19 second paragraph establishes requirements for various spaces on board, such as accommodation spaces, cabins, mess rooms, navigational spaces, cargo holds, decks, etc. There are no specific space requirements for vessels of less than 1,600 gross tonnage as there are for vessels of 1,600 GT and upwards. However, we recommend using the space requirements of section 15-19 as guidance.

Noise exposure: Section 15-10 of the HSE Regulations refers to ISO 9612:2009, which specifies an engineering method for measuring worker's exposure to noise in a working environment and calculating the noise exposure level. The mentioned ISO standard provides details on how to perform measurements of noise exposure.

Hearing examination: It is stipulated in the HSE Regulations section 15-24 second paragraph that a preventive hearing examination will be offered to any person working on board whose exposure to noise exceeds the lower exposure action values, or where risk assessments and measurements indicate a risk to health, cf. section 15-3.

Systematic prevention and measures: Systematic prevention of noise and measures to help reduce the noise level in passenger spaces are required. "Passenger spaces" means passenger cabins and other spaces where passengers normally have access. Working spaces for the crew where passengers normally do not have access are covered by other requirements.

Examples of noise reducing measures:

- noise reduction by technical means reducing airborne noise, for instance by shields, enclosures or sound-absorbent coverings, cf. section 15-2 third paragraph subparagraph e (i);
- noise reduction by technical means reducing structure-borne noise/vibrations by balancing, damping or isolating sound sources, cf. section 15-2 third paragraph subparagraph e (ii);
- design and layout of workplaces and work stations so that technical devices can be arranged and used in such a way that unnecessary noise does not arise, cf. section 15-2 third paragraph subparagraph c;
- systematic maintenance of technical devices, cf. section 15-2 second paragraph.

Other measures to help maintain systematic noise prevention:

- choice of work equipment emitting the least possible noise and any alternative equipment designed to reduce the noise emission, cf. section 15-2 third paragraph subparagraph b and section 15-3 second paragraph subparagraph g;
- considering other working methods that require less exposure to noise, cf. section 15-2 third paragraph (a).
- organisation of work with limitation of the duration and intensity of the exposure and adequate noiseless rest periods, cf. section 15-2 third paragraph subparagraph g.

Whenever new working equipment is introduced, including new technology generating noise, it is important to assess these measures considering the day-to-day operation, organisation and planning on board.

Knut Arild Hareide
Director General of Shipping and Navigation

Linda Bruås
Head of Department