

Guidance of Noise, Vibration ,Alarm Volume Measurement during Vessel's Sea- Trial

by X.GF

Refer to Code on Noise Levels on Board Ship (IMO.Res.A.468<7>)

1. Noise Level Table

Noise Level Limits

Spaces		Maximum Acceptable Levels dB(A)	Remark
Work Spaces	Mach. Space (continuously manned)	90	*
	Mach. Space (not continuously manned)	110	*
	Mach. Control Rooms	75	
	Workshops	85	
	Non-specified Work Spaces	90	*
Navigation Spaces	Navigation Bridge and Chartrooms	65	
	Listening Post	70	including bridge wings and windows
	Radio Rooms	60	without audio signals
	Radar Rooms	65	
Accommodation Spaces	Cabins and Hospitals	60	
	Mess Rooms	65	
	Recreation Rooms	65	
	Open Recreation Areas	75	
	Offices	65	
Service Spaces	Galley	75	
	Serveries and Pantries	75	*
Other normally unoccupied Spaces		90	**

* : Ear protectors should be worn when the noise level is above 85 dB(A).

** : The noise level limits are designed to ensure that, if they are complied with, seafarers will not be exposed to an $L_{eq}(24)$ exceeding 80 dB(A), i.e. within each day or 24 hour period the equivalent continuous noise exposure would not exceed 80 dB(A). In spaces with sound pressure levels exceeding 85 dB(A), it will be necessary to use suitable ear protection, or to apply time limits for exposure, as set out in this section, to ensure that an equivalent level of protection is maintained.

Volume

Refer to SOLAS/LSA Code/ 7.2

1. General Alarm (通用报警)

1.1 Equipment

The general emergency alarm system shall be capable of sounding the general emergency alarm signal consisting of seven or more short blasts followed by one long blast on the ship's **whistle** or **siren** and additionally on an electrically operated **bell** or **klaxon** or other equivalent warning system.

1.2 Sound Pressure Level

Volume (Sound Pressure Level)

Spaces	Minimum Levels dB(A)	dB(A) above ambient noise
Interior and exterior spaces	80	10
Sleeping position(bed) in cabins and cabin bathrooms	75	10

2. Public Address System (广播系统 PAS)

2.1 Equipment

The public address system shall be a **loudspeaker** installation

2.2 Sound Pressure Level

PAS Volume

Spaces	Minimum Levels dB(A)	dB(A) above the speech interference level
Interior spaces	75	10
Exterior spaces	80	10

Vibration

Refer to ISO 6954:2000 Edition — Mechanical Vibration on Merchant Ships

1. Instruments
Different types of measuring and recording equipment, e.g. instruments of analog, digital, spectral or time-based type which meet the requirements of ISO 8041 could be used.
2. Measurement Location and Direction
 - 2.1 Transducer Locations
Transducer locations shall be selected on the decks of occupied spaces in sufficient quantity in order to characterize satisfactory the vibration of the ship.
 - 2.2 Transducer Orientation
Transducer orientation shall correspond to three translational axes of the ship: longitudinal, transversal and vertical.
3. Measurement Procedure Notes
 - 3.1 The frequency range to be evaluated is 1HZ to 80 HZ.
 - 3.2 Measuring duration shall be at least 1 min, while 2 min below 2 HZ.
4. Evaluation of habitability
It is recommended that the CLASS to be applied to the various areas of a ship be agreed between the interested parties (e.g. shipbuilder and shipowner). This table as followed could be applied for measuring the actual vibration is probable or not.

Overall Frequency-weighted r.m.s. values from 1Hz to 80Hz in different areas on a ship

	Area Classification					
	A		B		C	
	mm/s ²	mm/s	mm/s ²	mm/s	mm/s ²	mm/s
Values above which adverse comments are probable	143	4	214	6	286	8
Values below which adverse comments are not probable	71.5	2	107	3	143	4
Note: The zone between upper and lower values reflects the shipboard vibration environment commonly experienced and accepted.						

5. Classification of Area
 - Class A: Passenger cabins
 - Class B: Crew accommodation areas
 - Class C: Working areas.