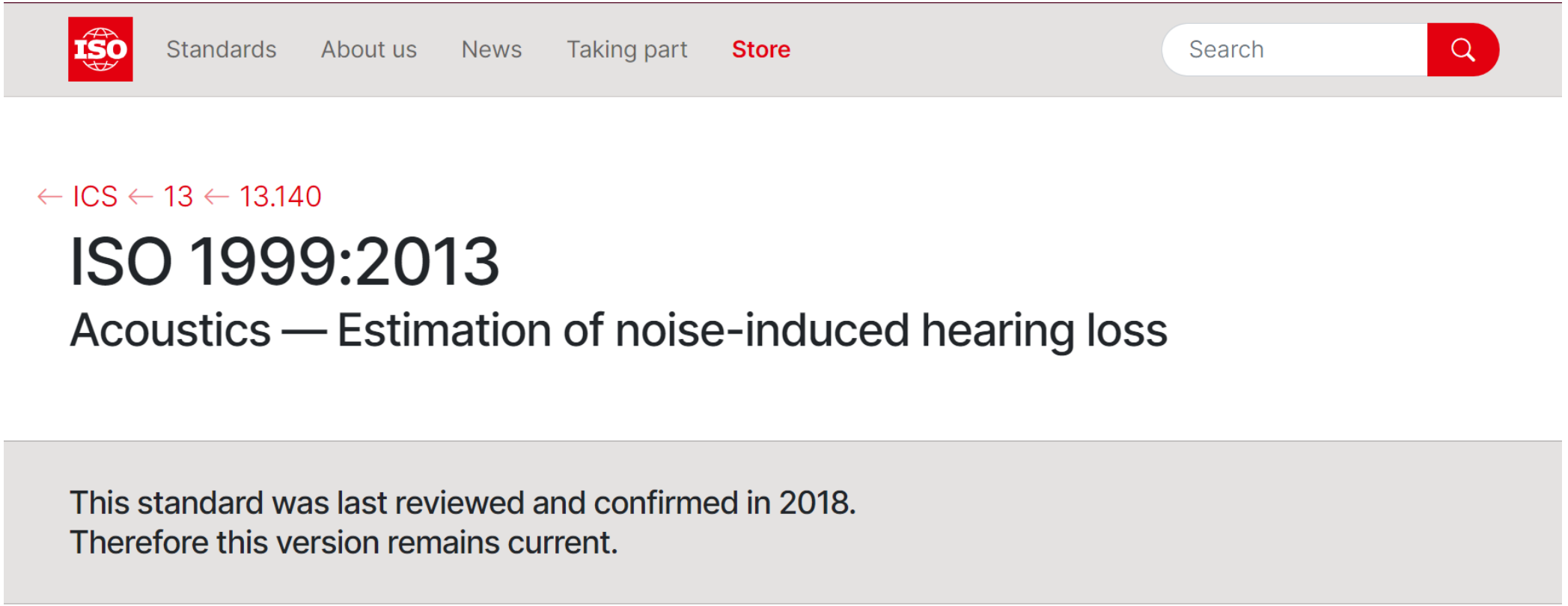
Why move from Maximum Sound Pressure to Exposure?

Mark Laureyns

ISO 1999:2013 (confirmed in 2018)



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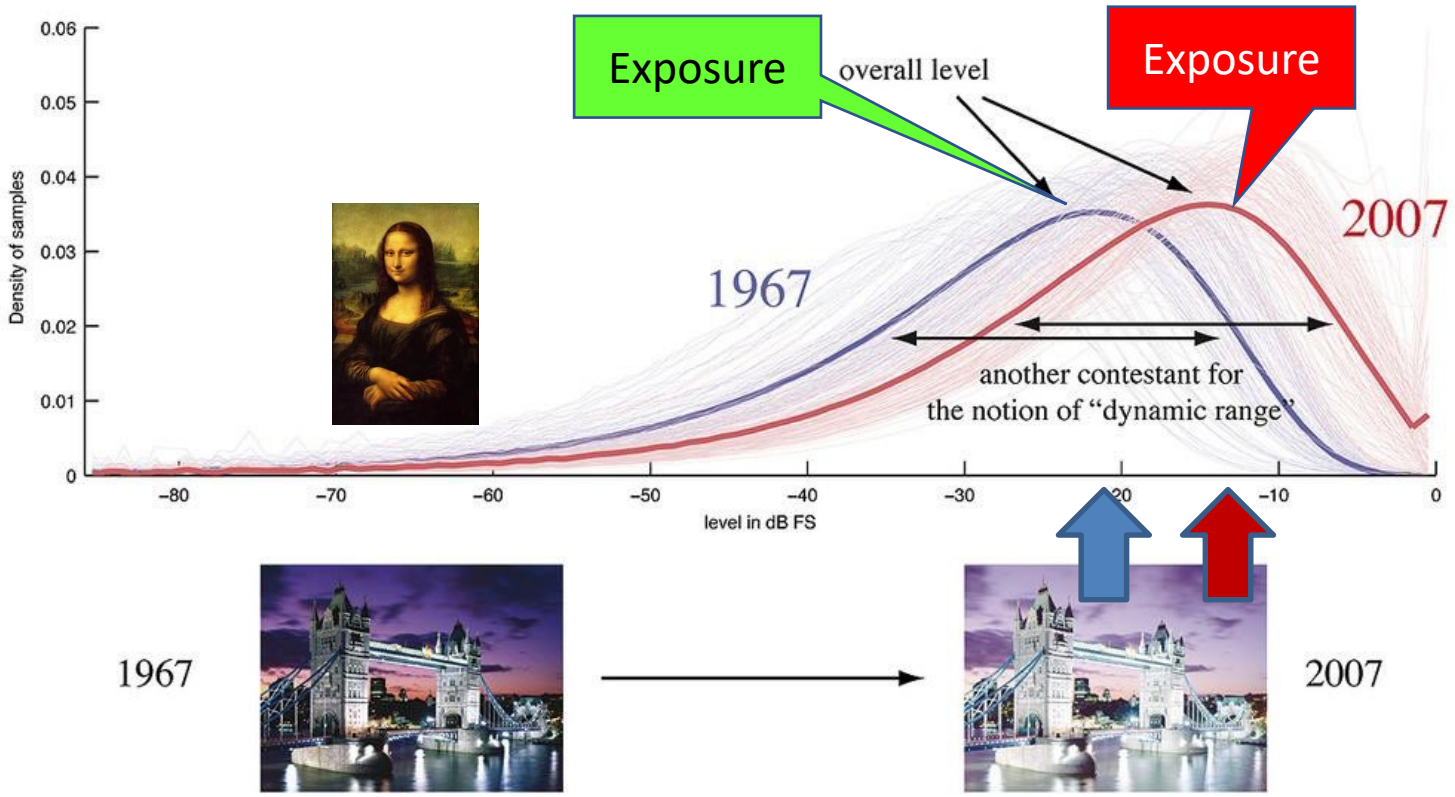
The dynamic range loudness war



Comparisons between signal levels and picture levels as defined in Photoshop result in another interpretation of the loudness war.

If the signal is compressed, you can stay under the unsafe output level … but you increase sound exposure to unsafe dosage

https://www.soundonsound.com/sound-advice/dynamic-range-loudness-war

European Commission

COMMISSION DECISION

of 23 June 2009

on the safety requirements to be met by European standards for personal music players pursuant to Directive 2001/95/EC of the European Parliament and of the Council

(Text with EEA relevance)

(2009/490/EC)

Requirements

1. For the purpose of Article 4(1)(a) of Directive 2001/95/EC, the safety requirement for personal music players shall be the following:

Personal music players shall be designed and manufactured in a manner that ensures that, under reasonably foreseeable conditions of use, they are inherently safe and do not cause hearing damage.

European Commission

COMMISSION DECISION

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(Text with EEA relevance)

(2009/490/EC)

Exposure / Dose

Requirements ….

2. The requirement set out in paragraph 1 shall include in particular the following:

1.Exposure to sound levels shall be time limited to avoid hearing damage. At **80 dB(A)** exposure time shall be **limited to 40 hours/week**, whereas at **89 dB(A)** exposure time shall be limited to **5 hours/week**. For other exposure levels a linear intra- and extrapolation applies. Account shall be taken of the dynamic range of sound and the reasonably foreseeable use of the products.

2.Personal music players shall provide adequate warnings on the risks involved in using the device and to the ways of avoiding them and information to users in cases where exposure poses a risk of hearing damage.