

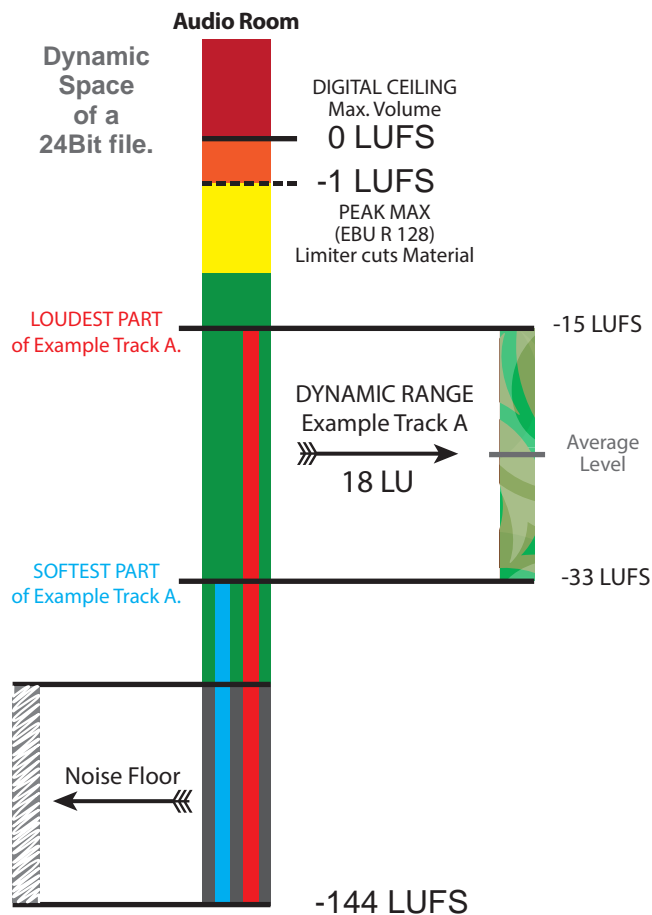
UNDERSTANDING LOUDNESS AND DYNAMIC RANGE

by Music Today Europe

In Accord with the European Audio Norm **EBU R 128**

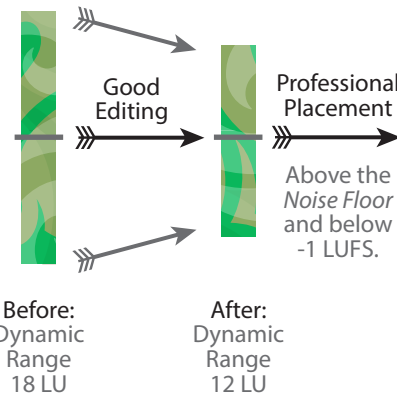
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IN GENERAL



Best Engineers process in Line with Broadcast Standards

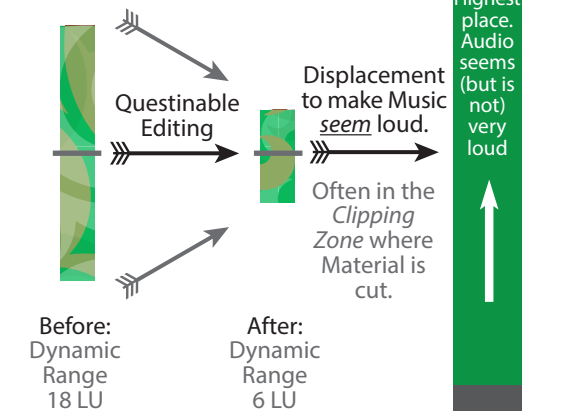
Good engineers aim for **great sound**. They maintain most of the given **dynamic range** and only tame too extreme passages. This approach is a key to an **intrinsically loud**** and lively mix. Good engineers know that the relative position of the material within the audio room will neither affect the sound nor the high **intrinsic loudness**** of the material.



Sound:	Lively, natural, exciting.
Optimal for:	Radio, Film, CD, Internet.
(File) Loudness*:	Soft due to Placement.
Make it louder:	Volume Knob.
Real Loudness**:	Intrinsically loud.
Radio Loudness:	Good Mix up to 100%.
Radio Sound:	Amazing.
Material & Transients:	Mostly intact.

Most engineers IGNORE Broadcast Standards

For no clear reason, most engineers believe that "**Loudness**"* (a high position of the material within the audio room) is the main target. Thus, they destroy the **dynamic range** and *intact sound* of given material in order to brutally push the audio material against the ceiling of the audio room: Ironically, the result will sound dull and be **intrinsically soft****.



Sound:	Static, unnatural, boring.
Usage:	Private, CD, Internet.
(File) Loudness*:	Loud due to Displacement.
Reduce Loudness:	Volume Knob.
Real Loudness**:	Intrinsically soft.
Radio Loudness:	Often less than 100%.
Radio Sound:	Garbage in, Garbage out.
Material & Transients:	Often destroyed.

LU = Loudness Unit = dB, LUFS = Loudness Units (relative to) Full Scale (0).

* "Loudness": Played back songs are perceived as "louder" and "softer" due to different material positions within the audio container and due to mixing approaches.
 ** "Intrinsic Loudness": Level songs at the same average level (Integrated Loudness) to reveal their real loudness: Loud songs can suddenly be soft and soft songs loud.

HOW LOUDNESS AFFECTS RADIO PROCESSING

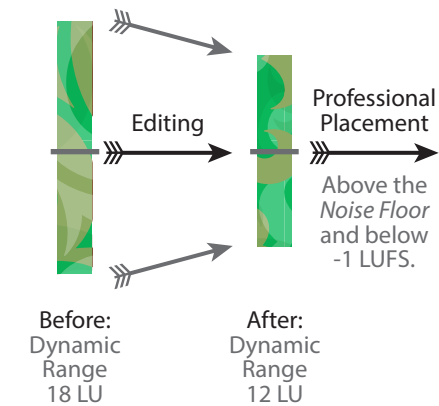
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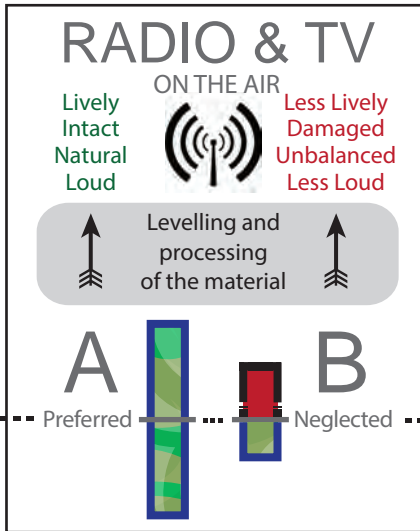
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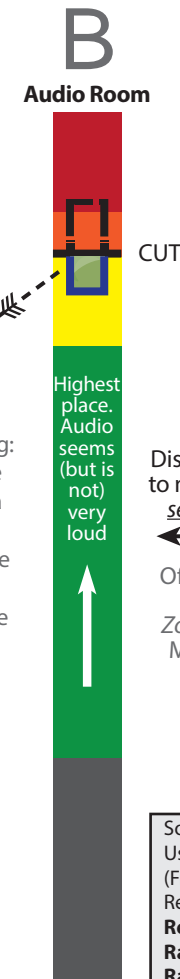
Low average level due to a natural dynamic range that does not allow for a high placement.



Radio and TV stations level material before it is aired. An effect chain reduces the (average) level of loud material and boosts the (average) level of soft material. Thus, the material is aired at the very same average level (**Integrated Loudness**).

Therefore, the original "**Loudness**" (the position of the material within the audio room) does not play a role and can't be used to one's advantage. What matters is the sound quality:

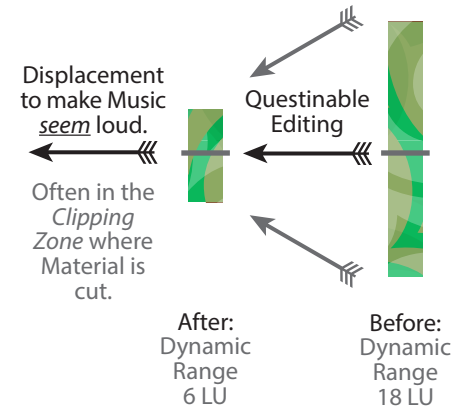
Intact audio material (A) sounds much better *on the air* than **defect material (B)** and is at least as loud.



Before Levelling: High average level due to a diminished dynamic range that allows for an extreme placement.

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"Loudness" comes from your Volume Knob. **Great Sound** comes from a good Engineer.