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# Recommendation on the proper use of a loadbox with a tube amplifier

## What is a loadbox?

In the normal use of a tube amplifier, it is highly recommended that you always connect its power output to a speaker cabinet prior to powering it up. The speaker cabinet (4, 8 or 16 Ohms) must always be connected to the corresponding speaker output of your amplifier. Not doing so can lead to partial or complete destruction of the output stage of the tube amplifier.

Most tube amplifier makers protect their products with fuses or other protection systems, but some amplifiers still remain not or insufficiently protected. It is impossible to predict the behaviour of all the amplifiers on the market in case of use without a load (a speaker cabinet or a loadbox).

The electronic term that describes the speaker cabinet with respect to the amplifier is the “load”: we say the cabinet “loads” the amplifier. The term “loadbox” fits any product that embeds a load. The main parameter of the loadbox is its impedance, expressed in Ohms. An 8-Ohm loadbox must be plugged to the 8-Ohm speaker output of the amplifier.

The power sent to the load is turned into heat, so please follow the cooling recommendation of the loadbox—otherwise overheating may cause damage, both to the loadbox and to the amplifier.

The Torpedo Captor, Reload, Live and Studio all embed a loadbox. This term indicates that these products can electrically replace the speaker cabinet while dissipating (transforming into heat) the power coming out of the amplifier.

The embedded load in the Torpedo Captor, Reload, Live and Studio is a reactive one: it embeds a specific circuit to simulate the complex impedance of a real speaker. This kind of system is widely used in the industry to silently test amplifiers.



**Always connect the speaker out of your tube amplifier to an appropriate load (speaker cabinet or loadbox). The Torpedo Captor, Reload, Live and Studio are such a load.**

Please note that you must always power up the Torpedo Reload, Live and Studio before your amplifier, because the loadbox embedded in these products is only active when they are powered up. The Torpedo Captor does not need to be powered up to act as a loadbox.

## Which output volume for my amplifier?

The correct use of your amplifier with a loadbox requires some precautions. Because of the silence while playing, it is much easier to accidentally run your amplifier beyond the reasonable limits set by the manufacturer than when using a real speaker cabinet with it. This can lead to faster tube wear and, in some cases, to more serious inconveniences.



**When first testing the amplifier at high volume, monitor the color of the tubes and the general state of the amplifier. Red-glowing tubes or any appearance of smoke are signs of a problem that may result in partial or complete destruction of the amplifier.**

Keep in mind that the “sweet spot” - the perfect running point of the amplifier, the one that will give you the tone you’re looking for - is rarely obtained at maximum volume. In addition, the volume control of the amplifier is usually logarithmic, which means the volume goes up quickly on the first half of the potentiometer rotation, reaches its maximum at 12 o’clock, and doesn’t change much beyond this point. Therefore, you can reach the maximum volume of your amplifier even if the volume potentiometer is not set at maximum.

By reaching the maximum output power of your amplifier, you will hear a lot of distortion, which may not sound as well as you may hope. In fact, most amplifiers sound rather poorly at maximum volume. Always keep in mind that your amplifier may not have been conceived to be used at maximum volume for a long period of time. Running an amplifier at high volume will cause premature wear of the tubes and possible malfunctions or damages at the output stage.



**The fact that the volume control of your amplifier is not set at maximum doesn’t mean your amplifier is not running at maximum volume. A good habit is to keep the usual volume setup you would use in rehearsal or on stage, rather than just following what the volume potentiometer indicates.**

## Is the use of a loadbox totally silent?



Super truc et astuce trop bien sa maman

We usually talk about “silent recording” when a loadbox is involved. If we compare the loadbox solution to a traditional cabinet miking solution, it is obviously several orders of magnitude quieter, but you will still experience some minor sounds, noises, that have to be taken into account:

- Your guitar or bass strings can be heard. This is obvious, but it can be disturbing, depending on

your environment.

- You may hear some noise coming out of your Torpedo when playing, like there is a tiny speaker inside the box. This is perfectly normal and there is no reason to worry. The sound is produced when power goes through the coil of the reactive load embedded on the Torpedo Captor, Reload, Live or Studio. The vibration is related to what power comes out of the amplifier connected to the Torpedo and to the signal's frequency content (notes played are heard). Your amplifier may also produce similar noise, at the output transformer's level. Such noise is usually not heard, simply because it is normally overcome by the sound coming from the loudspeaker.
- The Torpedo Captor, Reload, Live and Studio all embed a fan, as there is quite a lot of power dissipated into heat inside the box. We selected a so called "silent fan", but as it is running fast, it is never entirely silent. This said, you can consider that, in normal use (hearing your guitar through monitors, or headphones), you can barely hear that fan.

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