

Early 20th Century technology, mostly unchanged from the 1930s

Used today for two purposes:

- High-end audiophile sound systems
- Guitar Amplifiers

I build guitar amps



Violating Design Specs

In modern guitar amps, tubes are used in ways that completely violate designers' intentions.



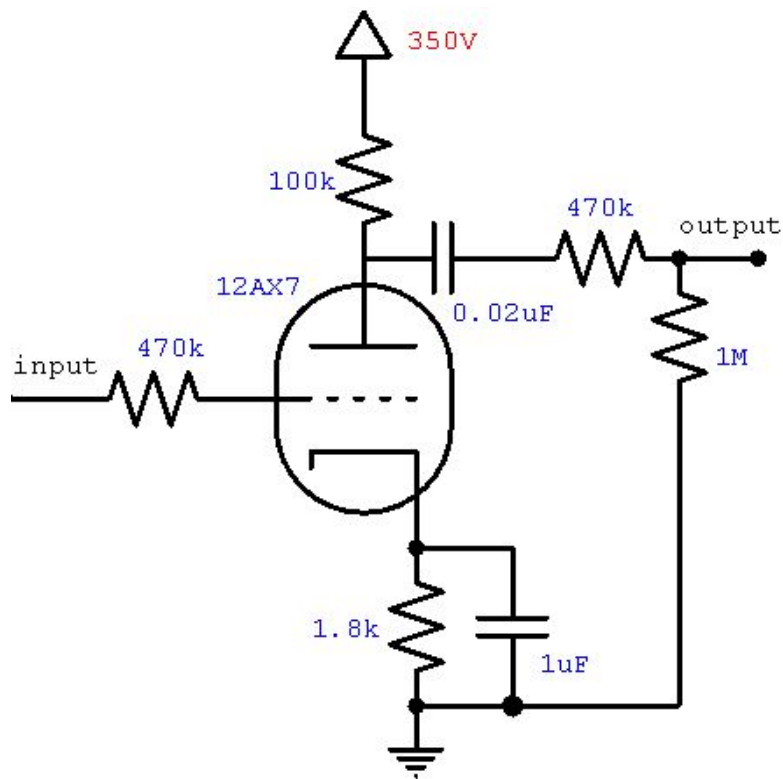
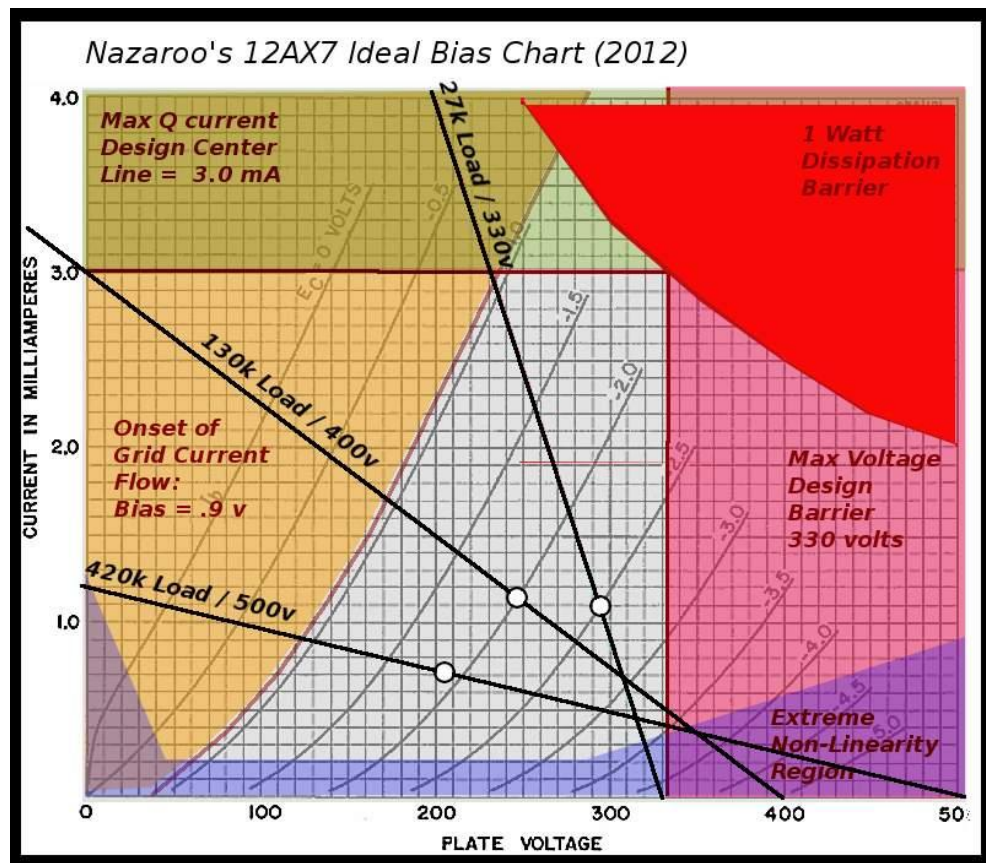
“Should” sound like this:

Are **actually used** to sound like this:

Along with amplification, vacuum tubes are being used to compress, clip, and add harmonic distortion.

This is done by turning the volume up to deafening levels.

What's going on here?



Results



Tube Amp Challenges:

- Expensive
- Hot
- High Voltage
- Fragile
- Finicky
- Heavy
- Too Loud



Digital Modeling Amplifiers

- Latency
- Sampling Rates
- Real-time Computational Power
- Serious ones are seriously expensive

Current best alternative?

