

Resurrecting An Ancient Fender Champ Amplifier

R. D. of Lara, Victoria, recently resurrected an ancient Fender guitar amplifier with valves. Here's how he tells it . . .

The Fender Champ guitar amplifier (introduced in 1948) used just one valve in the output stage, arranged in a single-ended class-A configuration (about 5W). I had one come in recently, the owner complaining that "it smells", which makes a nice change from "it blows fuses".

This one was a Silver-Faced Champ with the AA764 circuit and I started to get a bit nostalgic. This amplifier was around when Jimi Hendrix was strutting his stuff.

After removing the amplifier from its case and setting it up on the bench, the problem was immediately obvious. The screen grid resistor was a charred mess, completely unrecognisable from its original state, and the smell was really quite bad.

My first thought was that maybe the output valve, a 6V6GT, was dead. But first I replaced the screen grid resistor which, according to the

circuit schematic was a 1k Ω 1W unit. I replaced it with a 5W resistor and then powered the unit up to test it, as I would now have to order in a new valve if this was faulty. It still didn't work, with no output from the amplifier whatsoever.

As a result, I began checking the circuit voltages and found that the screen grid resistor I had just replaced had around 300V across it! In normal operation, this should be just a few volts. This meant that the output valve was definitely dead, the screen grid having developed a short.

I left it alone for a few days until the new valve arrived. This was then installed and I powered the amplifier up again but it still didn't work. The voltage across the screen grid resistor was still quite high, though not as high as before, which meant that there had to be another fault lurking somewhere.

Well, the answer became apparent only after I had disconnected all the leads from the tag strip that held the

screen grid resistor and I checked the resistor itself. It measured close to 1M Ω instead of 1k Ω and I could only put this down to the fact that I had initially tested the amplifier with the dodgy valve still in place. As a result, the output stage drew so much current that the new 1k Ω screen grid resistor had gone high resistance, although it still looked perfectly OK and there was no discolouration.

Replacing this resistor yet again fixed the problem and the amplifier sprang back into life.

With modern day valve amplifiers, this situation would not have arisen because the high-voltage (HT) rail is fuse-protected. So, as a safeguard against further failure, I fitted a fuse between the HT rail and the anode of the 6V6 valve. That way, if the valve fails in the future, the amplifier will just die in a very uneventful way instead of also burning the screen grid resistor to death – although I'm sure the ghost of Jimi Hendrix would prefer the latter.