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The Three Voices of the Electric Guitar

The electric guitar has been an integral part of popular music since its inception in the early part of the twentieth century. The immense palette of colors available to guitarists makes the electric guitar obviously stand out from the other musical instruments. However, a fairly obvious fact about the electric guitar is hiding in plain sight, a fact known to players but not immediately apparent to the general public until it is brought to their attention: the guitar is only half of a complete instrument. Without electronic amplification there would be no jarring, emotional delight to the ear that stirs the collective soul of today's audience. Thus far in the evolution of sound reinforcement, there are three distinct types of amplifiers: the tube amp, the solid-state or transistor amp, and the modern digital processor.

The vacuum tube, or valve, is a component of an antiquated technology. Along with large, heavy output transformers and point-to-point wiring, the tube amp is a remnant of the days when Americans would gather around their bulky mahogany Art Deco radios and listen to FDR's fireside chats. Suspenders, rumble seats, fedoras, and whitewall tires were some of the other common cultural iconography in those halcyon days before the atomic bomb. The tube amp tone has a roundness to it, a warm, creamy sound that even with the volume turned up is never sharp or piercing. The guitar players that swear by tube amps are legion, and the men that designed and manufactured them have become household names; Leo Fender and Jim Marshall are two examples. The positive attributes of the tube amps are many, but there are drawbacks as well:

they are heavy and can get very hot; to get the best performance and tone, they must be matched with the right speakers; and tubes wear out quickly and must be replaced often. Something new was needed.

The solid-state transistor, or transtube, as some call it, is essentially a small electric circuit that serves the same purpose as a vacuum tube. Invented during the waning days of World War II, it was initially put to good use as a proximity fuse in artillery shells. When fired at a moving airplane, the projectiles didn't need to hit the target directly. The little transistor inside the nose of the shell would detect the magnetic field of the aircraft, which would activate the tiny electronic circuitry and detonate the explosives within. They were used with great success against the Japanese kamikaze attacks in the Pacific Theater during World War II; however, Japan would later exact economic revenge by flooding the American market with cheap transistor radios in the 1960s. When transistors were first used in guitar amps, their advantages were obvious: light weight, cool operation, and twice the output of the old tube technology. They had a razor-edged sound that many guitar players welcomed; some, however, did not, and the search for the ultimate tone proceeded unabated.

The arrival of the silicon chip in the 1980s ushered in the digital revolution. For better or worse, the modern world has embraced the computer in the hope that it will fulfill the communicative promise of its creators. For psychologists, sociologists, and anthropologists, the jury is still out, as there seems to be much evidence that cyber-society is isolationist and narcissistic and that the gulf between the haves and the have-nots is growing wider by the day. Guitar players, however, seem to be doing what they can to level the proverbial and literal playing field by embracing digital technology. There are computer programs and processors that can analyze and recreate the tonal quality of the great artists' performances. Neophyte guitarists

may not have the manual dexterity or compositional facility of the masters, but they can now have the tone and timbre of their heroes. Almost any player will readily agree that is half the battle. Of course, the musical geniuses of today are using the new technology too and are pushing the performance envelope as far as it will go. The recording industry especially has benefitted from the new technology.

All three types of amps have contributed to a thriving and evolving art form in ways that are both immemorial and ephemeral. The tube amp will always be associated with the originators of the electric guitar sound, while the solid-state or transistor amp will most likely go down in history as a mass-marketing success story. Countless would-be rock stars started out with a Peavey transtube amp and dreams. The latest incarnation of sound enhancement is taking the art form in directions that will be apparent only when the process is concluded, something which will probably never happen. As long as there are such things as electric guitars, and as long as musicians play them, they will need a device to enhance and multiply their sonic messages.