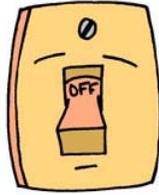


The On/OFF Switch



Remember when the ON/OFF switch actually turned things ON or OFF?

The ON/OFF switch used to physically supply power or remove power from a machine. Today that's not true. When you shut a machine down, it doesn't really shut down, it just goes into a standby mode. Otherwise how could you turn it back on again with a remote?

In fact, most machines can turn themselves back on even when you are not looking! My ink jet printer does this all the time. He wakes up every so often to clean the print head so the ink doesn't dry up and clog the jets. The first time this happened I wondered, "What is that noise?" It was my ink jet printer (who was shut off) doing his thing.

So, here's an interesting bit of history about the way things used to be done.

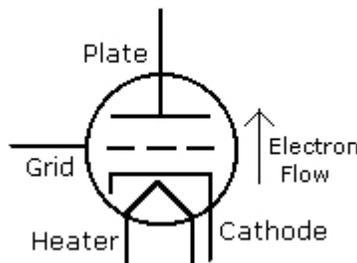
Warm Up vs. Boot Up

Electronic machines of the past had to "warm up" before they could work. So you're asking, "What's up with that?"

Well, machines used to have vacuum tubes. Without going into the whole boring history, vacuum tubes had an emitter called a "cathode" some control grids that could influence the signal (stream of electrons), and a collector called a "plate." The signals on the control grids regulated the stream of electrons heading from the cathode to the plate. The picture below shows only one grid, but there could be many. If there was only one

grid it was called a "triode" because it had a cathode, a grid and a plate (the two pins for the heater don't count). If there were three control grids it was called a "pentode" because it had three control grids, a cathode, and a plate. You get the idea.

Now here's the big deal. Before the emitter could emit anything it had to be pretty hot. So the heating element had to be powered up for a while to heat up the emitter.



Solid State Technology

Today, with solid state technology, we don't have to wait for things to "warm up" but we do have to wait for things to "boot up." Modern PCs have so many programs running at the same time that it takes a while for them all to get up and running before the machine is ready to be used.

So, when you turn on your PC in the morning, you aren't waiting for it to "warm up" you are waiting for it to "boot up." :)