Subject: Re: Loud "BANG" From Speakers
Posted by Wayne Parham on Fri, 23 Dec 2011 15:46:28 GMT
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I've had amps that did that too. The relay is there to prevent this, but perhaps the designer didn't take power outages into consideration. It could be that the circuit relies on power to be applied for a controlled startup/shutdown. I think the timed relay idea is reasonable, but if the designer depends on the power switch to be set "off" to de-energize the relay, then it won't work when AC power is removed.

Many amps go through an unstable transition when power is applied or removed. I've seen some amps that output a rolling DC, others that have the loud sonic boom or chirp and others that sound scratchy. Usually it's capacitors charging/discharging and sometimes that's directly presented to the ouputs, other times it's a side-effect of active elements passing through a transition phase of their operating ranges. But in any of these cases, timed relays are a great solution, in my opinion. It's just that the "switch off" case might act differently than the "lost power" case.

My guess is the relay's timer mechanism on your amp uses the power switch as a signal to shut off the relay instead of sensing power. It may be a digital device, or an analog timer like a 555. It may even be something as simple as an RC time constant. But the power switch probably has to be shut off to disharge the cap or send the signal to the logic that tells it to shut off the relay rapidly. Without this power switch signal, the relay probably doesn't shut off rapidly, and instead, just "relaxes" as the internal power supply discharges and fades. That's what I would change. I would modify it to use a mechanism that sensed power rather than depending on the power switch for the signal that says "shut down".