Subject: Re: Design Mistakes
Posted by Wayne Parham on Wed, 15 Mar 2023 17:33:08 GMT
View Forum Message <> Reply to Message

Well, yeah, I've repaired a bunch of stuff like that too. But then again, guys like you and I are "Nth degree" guys and we regularly redesign things or completely start from scratch.

I think my point was - actually a couple of points - were these:

1. Take everything on the internet with a grain of salt.

2. All products are man-made and come in various degrees of sophistication. Some are elegant and others more like a Rube Goldberg machine. Most could use some refactoring. But I'm not sure that means the designs are flawed as much as they could be improved.

Sure, there are absolute mistakes. And these days, it's worse 'cause a lot of manufacturers assume they can push out updates to make adjustments. But still, I think it's more productive to discuss specific products and the things we do to improve them.

Some examples that come to mind right off:

Audio Note Kit 2: When a 6550 gets old, it starts drawing excessive current. The cathode resistor gets hot enough to melt the solder. Suggested mod: Install an inline 1/8A fuse on both 6550 tubes in series with the cathode resistor. When a fuse blows, swap both fuses and tubes and the amp is good to go for several years before it happens again.

Oldsmobile 455 engine: Journals are large so engine speed must be limited. And the engine tends to pump all oil to the heads. Mains often starve for oil. Suggested mods: Reduce journal size, improve drain-back flow and install oil restriction orifices in the main galleys.

I could think of dozens more, spend all day with it. Lots of cool little upgrades we DIY types do to improve our stuff.

But are these design flaws? A case could be made both ways. The Audio Note amp could have been designed differently. Or the cathode fuse could have been installed from the factory. But no big deal. I liked finding it, fixing it and suggesting it to others.

How 'bout the Olds engine? It definitely never saw NASCAR specifically for the reason I just mentioned. It would have eaten itself up in the first few laps. But it wasn't designed for that. It was designed to live between 500RPM and 2500RPM and to produce good power in that range. It can idle super slowly and still build enough of a hydrostatic wedge to keep the bearings alive. It just can't do 7000RPM, but the mods I suggested will keep it alive a lot longer at higher RPMs.

So back to the thread - Electrolytics in backwards? Really? I'm sure that slips by Q/C occasionally, but that's a definite quick failure mode. Diodes and transistors passing way more current than their maximum rated values? That's not going to live long either. I can't imagine seeing a large long-term production run with those kinds of problems 'cause every single unit

would fail. The manufacturer would definitely find that out pretty quickly and correct it before resuming production.