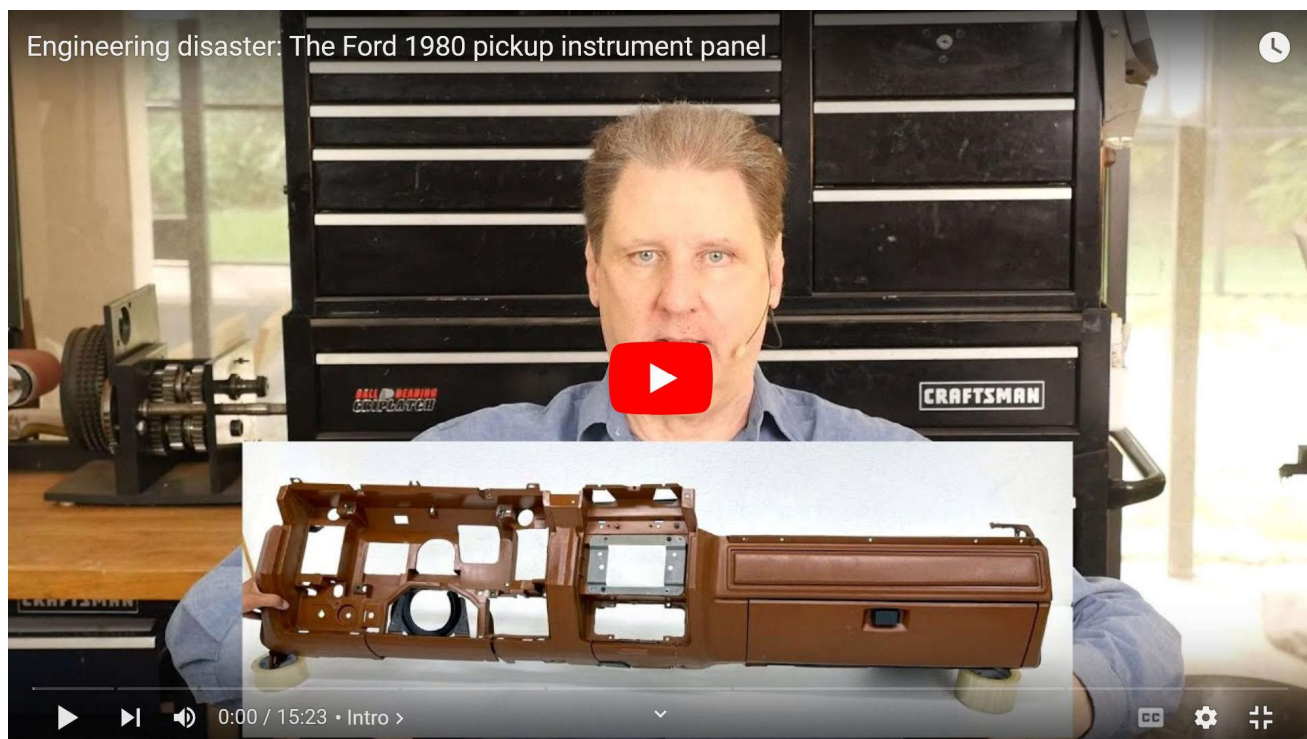




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Engineering disaster: the Ford dashboard

The 1980 Ford pickup truck plastic instrument panel was a nightmare. A cost, reliability, quality, and safety penalty.



In 1980 Ford Motor came out with its redesigned pickup truck. It had an all-new plastic instrument panel.



Ford was run by finance weasels back then, so the stated rationale for the plastic panel was that it was going to be cheaper than the 1979 design, which was made from plastic inserts in a steel structure. The real reason was the stylists could make the panel pretty, something we engineers said was for cars, not trucks.

Like many things on the 1980 truck, this plastic IP panel turned into an engineering disaster. The first problem is when we noticed that the glove box did not fit right.



The stylists blew it, there was a "reveal," two edges that made it easy to see the slightest misalignment, just like in this picture.

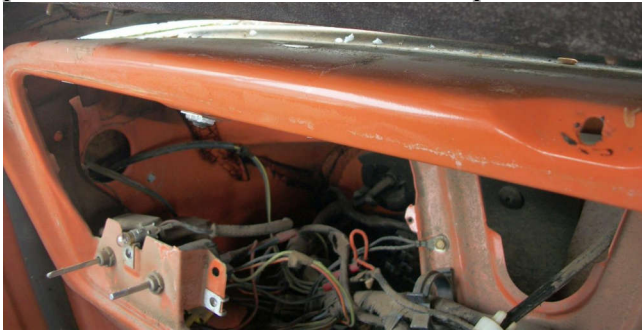


You can see the insane complexity of the injection-molding tool needed to mold the panel. This meant that once the tool was cut, there was no chance they could make any major changes, and remember, this whole fiasco was supposed to be a cost savings.

The next problem came when I noticed that we electrical engineers lost all the "free" grounds we had in the old metal panel.



The 1979 Ford truck instrument panel had a plastic instrument cluster in a steel panel.



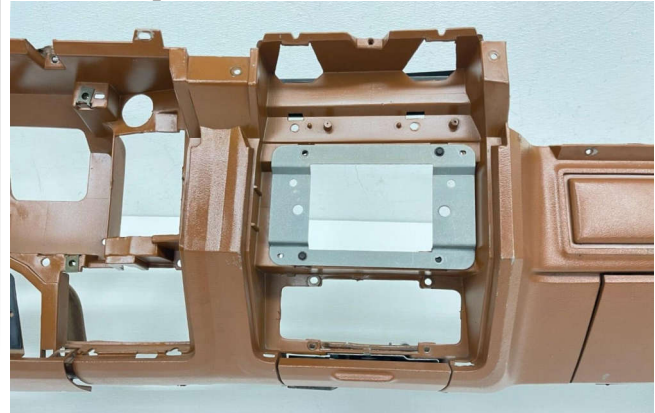
The 1979 truck brought metal up under the plastic to get those free grounds. Once I pointed out we needed to add wires, that pretty much made the cost basis a wash. Wire cost back then was a penny a foot and a penny for each connector pin on the ends. That was design cost, and a penny got management really worried. The cigarette lighter needed even more expensive heavy-gauge wire. I was not popular with management, but it was not my mistake.



This is the steel 1979 instrument panel we replaced with the 1980 plastic panel.



This 1967 panel shows the lower trim level.



One we got the wiring fixed, the test group noted the plastic panel flopped all over the place. We had a test engineer, Phil "Crash" Krushka. He took pride in running the truck over the Belgian Block shake test. He once lost a tooth filling he beat on the truck so hard. So now Body Engineering had to add steel braces and stiffeners everywhere. Now the cost savings had gone from a wash to a cost penalty.

OK, we found the appearance, wiring, and stiffness problems, and fixed them. Then the real disaster struck. Once all the stiffeners went in, we could then crash-test the truck. It was a 35 MPH full frontal test. Being cheap, the MBA product planners dictated the plastic panel be made of cheap acrylic plastic. It cost less, molded well, and took hot-stamp phony chrome just fine.

Acrylic plastic shatters on impact. So the crash-test dummy went through the panel, and as its head bounced back, the sharp plastic shards ripped its face off. So faced with this kind of liability nightmare, the lawyers convinced management to change to I think it was polycarbonate, or maybe ABS plastic, like used in football helmets. It was a huge cost penalty.

Now the crash-test dummy's head bounced off the panel, and broke its neck. This is just gossip, but our feeling was Ford felt it was better to face a jury with a broken neck on a dead guy, then on a lacerated face on a living guy. See, shattering that acrylic plastic absorbed a lot of energy, so that did not break the dummy's neck it just lacerated its face.



Once again, other than the wiring problem I was directly involved in, all this is engineering gossip, but I am pretty sure it is true. What the stylists tried to justify as a cost savings became an appearance, reliability, durability, cost, quality, and safety penalty. The irony is that the safest instrument panel is the 1979 one made from steel with foam over it, which bends and absorbs energy as your head impacts it.