‘When I was your age’ - Advances in Paintless Repair

Ever wonder what it was like pushing dents in 1992?
Here’s a glimpse of the changes I’ve seen.

These are some things which, at one time either made me scratch my head in wonder, or I just flat didn’t know I didn’t know.

Where to start a dent

With hail, I still think this is intuitive, but start from the center. We did then and we do now.

With sharp dents, too, the rule of thumb is work from the center.
Where we used to get tripped up, were the dents on the body line. At one time, I’d go right for it, thinking its the lowest part of the dent. I now know this can lead to cracking. So, I check first for an eyebrow. If there is one, tap on it to check for tension. If it will relieve some, then work it. If there is so much tension it won’t go down, then start to push in the area where the low starts, furthest from the line. This tends to carry good metal toward the line. When you finally do push on the line, it will come up easier, with less resistance. Usually this requires a little more back and forth with the knockdown, but results in a smoother repair.
Larger dents without sharps and creases, you can follow First in Last Out.

Eyebrows

You know already I like to start here. But lately, you may have noticed its less critical to remove all the tension. Instead, work the panel as if it were a large painting. Focus on a wide view and see what seems to be the next logical move. Should I knock down here, or push here? Sometimes it seems like you are all over the map, but it sure keeps you engaged. What I have discovered, as you know, is even hail can eyebrow. Still, start in the center and push. If an eyebrow is present you can address it later in the repair, when its more visible. You need to get the low up first.

Blending

This ties close to glue pulling, but merits a big gold star because its so powerful. I still remember a student telling me, “These dents are so small you can just blend the rails out.” Huh?
He then kindly explained what it was and I’ve been using it ever since. This is the art of working a panel with high tension on it, like a roof rail, and checking your work in an extreme low light angle. Working away from center, start tapping down, gradually fanning out and leveling. This may seem counter intuitive, but it will work most times. Rails have natural tension because of their size and shape.
Though blending can work on any panel to remove slight waves. The trick is to work with a low enough light angle. Incidentally, I really like the long aluminum handled hammers for this. Puts your head way back and extends your reach.
For some reason, I’ve become enamored with the thought of vibration working and moving grains of metal on a panel. Blending cements this thought and proves it true. You can really see it by the way slight vibrations can alter the appearance of a panel.
If you are having wave problems at the end of your repair, this is where you can do the most good. We have always worked our waves out at the end of the repair, but knowing the why and how of blending, really changed PDR for me.

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Glue Pulling

This system was not even available for us at first. At least, not until 1998, when I first bought it.

Funny, I bought it even though I wasn't sure it would fully work. The representative from Wurth put it on a junk hood and made a high spot with it, so I knew it had some potential. But not until a year later did we really find its value.

This was the year one of my students went to Spain and saw an Italian PDR crew using denatured alcohol.

We tried it but the Wurth glue was so soft it didn't work all that great. A real mess to clean up.

A trip to the hardware store and some off the shelf glue found us using it quite often.

I still remember the thrill of pulling a crease in a quarter panel of a Mercedes. An inaccessible dent now fixed. Delicious.

Since then, GPDR has evolved even more. Early glue pullers had concave tabs. These were difficult to line up over the dent and you felt like you were using a ton of glue. If you didn't, there wasn't enough to make contact with the panel.

When the more common domed or convex tabs came out, these were great for easy targeting and control based on size.

Over time, we have learned to control the pull by moderating the amount of glue. For instance, a little glue on a large tab will give you a stronger pull than the same amount on a dime size tab.

Also, you can place a "line" of glue on a round tab and shape the pull as well.

Today, we've gotten away from Denatured alcohol (it can be poisonous and enters through the skin) and just use isopropyl, either 90% (from corner drugstore, ask if you don't see it) or 99.9% from electronics supply house. GPDR on sharp dents. By creative knock down, you can get many sharp dents to come out or to an acceptable level.

Also, we look at the dent before we pull. You learn to recognize a sharp dent and "open it up" or make it larger so the pull can affect the sharp center without interference from the edges.

When pulling you quickly find that temperature can affect the outcome. Humidity can too, though not as much as temperature.

Its not so much about reading a thermometer, its more of a feel, or intuition. If its cool and the glue tabs are coming off in chunks, the temp is too low.

If the car is outside and the glue stays soft and you don't get a good snap when it comes off its too warm. You can cool it with an upside down can of air duster for computers. Holding the can upright expels the propellant as a gas, but upside down, liquid CO2 comes out and will the panel.

We have learned there is a range you can work in successfully with glue. The trick is to know what to do.

If the tab pulls off too easy, but the glue feels firm, you waited too long. If you don't get a good crisp snap as it pulls off, and the glue is still soft, you may have waited too long.

What makes the strongest pull?

Typically the indicator is when the glue stays on the car. If it doesn't, I know I've got a dirty panel and I need to clean it with polish or compound by hand. This will clean off the dirt and film from the alcohol or my dirty, fried chicken covered fingers.

A real challenge can be pulling a dent either across, or near a body line. This is where the

crease tabs can really shine. You can use them to control the shape of your pull. You can turn the tab 90 degrees for a totally different result. Look for this in an upcoming video.
Just lately, I've discovered you don't always have to relieve a high spot each time you pull. You can 'stack' your pulls and this will often get a sharp low to go high enough where you can blend it back to level without it falling down in the sharp center.

When to pull

Now, I must address when to use the glue pull. I'm going to give you two extremes, both real situations.
First, picture a 3 inch hail dent with a sharp bottom on the rail of a Dodge Magnum. An old friend who has the same years in the business, was here helping me with the storm. "I can fight this for two hours with glue, or I can drill in the door opening and be done with it."
He was of course asking my permission to drill. This is one spot where I am not crazy about drilling. If the car is in a rollover, will it spark a big investigation by a hungry attorney?
The other extreme is the fellow who picks up the glue puller and uses it every where, no matter what. This is often someone new who feels its easier to learn glue than push from behind.
Between these two extremes is where I think you should strive for, and its where I hang my hat.

Having said that, there are advantages to pulling very deep dents first and making them easier to read. I'm not crazy about creating a bunch of knockdown work for myself if I don't have too, though, so I use this just a little. My preference is to get on it with a soft tip from behind and create the same advantage.
Large dents, yes there can be some good from multiple pulls, but again, if they go high, its the same as a "whoops- I just over pushed in a high tension area" high spot. You gotta do some knocking down.
So, I limit this to tighter areas where a soft tip just won't go.

Access

One advantage Dent Doctor had from the get-go was their penchant for accessing dents without a lot of drilling.
They pioneered the window shield and wedge system. They would also go from a drain hole at the bottom of door all the way to the top if needed.
They did drill, though, and of course, so did I. On occasion, I still do. But not near as much as back then. I've been on enough job sites where its just not allowed. I think this carries it too far, but I digress. This article is about changes and this is a big one.

Once again, the glue puller comes to the rescue.
The no drilling rule definitely will have you tearing more things apart, now.
I remember being scared to death when I dropped my first head liner. I'll bet you were too. But R & I or remove and install, need not be scary. Frustrating if you break a clip or worse, but its rare. Just explore as well as you can without hurting it and you'll do fine.

How far would you go to get to a dent? Removing window glass and the regulators or motor mechanisms can sure help. Just be sure to get paid for it.
Another big thing about access is hood stands. Would you believe we used to never, and I mean never, ever took them off? Not sure why

not, but get a hood or trunk with very bad hail damage and you'll really like working it off the car. Its all about working dents from many different angles.

Lights
The history of this you know well from the lighting DVD.
It started with plastic tubes in the parking lot and bare bulb fluorescent off the shelf fixtures with striped bulbs.

Today, we have real, out of the box, ready to go lights. Still bare bulbed, the curved lights like the TS-1 from A1 or the A1-B from Ultra are actually the best of what people liked about the pipe outside.

Line boards are a recently popular addition. Also sprayed fog on a plastic cover works well for many.
Now, some are choosing a hybrid of the two. I have a cover like this I use for mobile work. Sometimes the lines show you what the fog won't and vice versa.
If you are working outside, a fog board or line board will carry you through. Light and easy, in and out. I often marvel at just how few tools are needed to do what we do.

Recently, LED lights are making their way into mainstream and these will, I believe, drive the business. The brightness level and lower power needs are forcing this.
We love our battery powered lights. The new lithium batteries will soon give us a complete portable solution that won't lose its charge.

Tools
Speaking of tools, here's a short list of all the tools we have now which were unheard of when I started:

- glue puller
- soft tips
- polished hammers
- spring tools
- plier style clip tools
- long rods
- interchangeable tips
- adjustable handles
- long hammers

The addition of these tools has made my life a whole bunch better and are worth more than just a mention.
Soft tips: you would laugh if you knew how long and hard I searched for the 3M green tape everyone once used. Having a soft tip and all different sizes has sure helped. Gorilla Tape is a good replacement by the way.

Polished Hammers: no way, no how, didn't use them. I met Jeurgen Holzer in Minnesota in 1998 and was intrigued by his different method for paintless repair using polished hammers. Now, I use this one a lot. By the way, you can now get polished tips to fit in the long hammers available in the 5/16 thread from Dentcraft.com. You can work the metal with vibration on a different level than your nylon knockdown.

Plier clip tools: Hold on to the clip and won't mushroom out or break off the head. No more needs to be said about these beauties from Steck, Model #21720. You can pick these up from paint jobbers in your town, or some auto parts stores.

Long rods: First bought a 6 footer in steel, now have an aluminum 7 footer from A1 at pdrtool.com. And it breaks down in sections! At one inch thick, it has almost no flex. All your effort goes right to the dent. A real time saver for hail on an SUV.

Adjustable handles: these have their place and I like them for comfort and torque. Still a work in progress, I fear. To date, the only ones which work really well are from Ultra.

Spring Tools: You know my spring tool story for hems and edges of hoods and trunks. The 28R45-1 from springtools.com is the best 12 bucks you can spend. Invaluable for working dents right at the edge.

Deep, Stretched Dents
I saved this for last because, well, I think its the funniest change.

"What do I do with this dent that just won't stay up?"
In the nineties, your only choice was to leave them high. Ugly? You bet your Grandma's bloomers!
In theory, a big ugly pop-knot on a panel could be made less ugly by raising the area around it. This is what we used to do.
Now you know how to shrink these back to level and tighten them up. Work harden the center, and let the area around the oil can hold it in place. Yes its a popper, or oil can, but it ain't ugly. And if you do it right, it will return to level every time.

Cars then
How much can change in 10 years? Turns out, a whole bunch.
Very few cars had uniside rails. Hondas were about the only ones, then Toyota followed suit. Take a look at a 1990 or '91 Nissan Maxima next time you're out. See how the Quarter seems to flow into the roof with no molding between? This is how cars were made then.
Every car had a roof and a quarter panel which welded together, but the seam was covered with plastic filler or lead.
Metals were even quite different. You could count on the higher end cars to be good thick metal. Hard to dent, easy to fix.

Cars today.
Now, almost every car is made with uniside technology. Its genius really, in design, I mean. Its fast to build, no filler and much stronger. The quarter panel is a continuous piece all the way up to the front door hinge pillar, or cowl. As you know, most of these rails have no access, thus need glue pulling.
Metals of today are not just thinner, they are of a different alloy. To paraphrase Toyota, 'Our metal is nothing today like it was ten years ago.'
Even the cars which historically had good metal are just as thin and easy to dent as the Asian cars.

What does this mean for you?
Good news first: easy to dent means more work and therefore more business for you.
Bad news: even the smallest dent can have eyebrows.
Then again, this is also good news, because you know how to fix eyebrows.
The only issue I have with today's metal is it stretches very easily.
And it often can't be brought back using the method I mentioned earlier. I've given up on a few now, they just couldn't be worked cold. In fact they had so much stretch, I wonder how they would do if you shrunk this new metal with a torch, body shop style.

Here's what you'll find:
You will have some cars with damage you cannot shrink. You will likely spend time on dents and have to walk away.
It also means you need to know how to get a dent to "hold", or be firm after repair.

Especially on Toyota roofs. Even quarter size dents on a roof may be stretched.
So protect yourself and work it level then push it with your finger firmly to ensure it will stay up. If its affected by your finger push, its not done yet. Go ahead and work the center again and push once more. You may have to do this a few times to be sure. It should tighten up. Better to do this with a sharper tool if you can.
Of course, you should now do this as a practice on any dent.

Here's the irony about this.
Then: body shops, and paint jobbers were amazingly good at spreading the lie that dents repaired paintless would fall down again later.
Today: Insurance companies now force body shops to use PDR, so (mostly) no more lies.
Ironically, dents actually *can* fall back in with today's metal.
About a year ago, we did a push to paint on the roof of a Toyota Avalon. The technician is one of the best I've known. His finish work was flawless. All the painter had to do was scuff and paint. There was one dent which needed putty, but the rest was terrific. Any painter would love to work behind this PDR tech.
All went well, until the car was heated in the bake booth. Small lows showed up again after the cool down. They didn't look like hail, more like bad bodywork.
We had to drop the headliner once again and rework those dents. Up and down a few times and they retightened quite nicely.
Does this scare you?
You don't need to be afraid of larger dents on today's metal, but you should have respect for it.
Have a healthy fear of not leaving yourself exposed by a dent repaired level, but not rigid.
Give every dent the push test and you'll do fine.

The fundamentals haven't changed
While this list of changes is certainly not exhaustive, it looks like a lot has changed. The truth is, I still push the same as I did seventeen years ago. I read a little differently and have more tools available now, but we still got by. In fact we did very well.

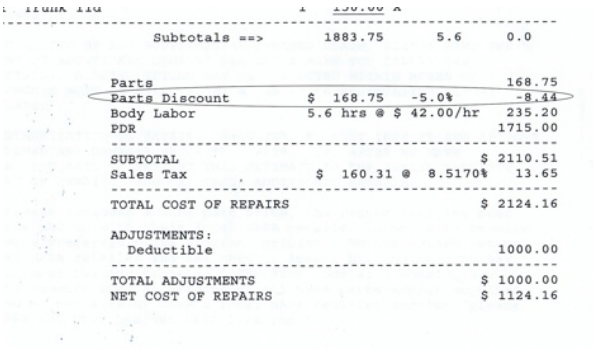
You are fortunate indeed to be in a business which will carry you through for a long time. Like learning to ride a bike, you never lose it. Go away for a year if you like, come back and start right up again. Once you have it down, you own it. Yours for life.

Things will change all around you. Cars, people, businesses. We have seen a great amount of turmoil lately, but cars are still made of metal and as long as people drive you are needed.

Thanks for taking this journey through time with me and I appreciate your support.

How to make $500 per hour with one email and one phone call
Write a supplement.
I wrote a Farmer's supplement recently and you would be shocked at how easy it was. No adjuster coming back out for re-inspection, just a 10 minute phone call with a young lady in an office somewhere.
All the changes I made were based on size of dents and the actual count. I used the same sheet you have in your system and sent it to them by email.
Next day the girl called and we went over the differences right then on the phone. I'm certain it was because she saw the sheet as authority.

There were some damaged moldings on their estimate as well. Along with this came a little trick at the bottom. A parts discount. In their favor.



Subtotals ==>	1883.75	5.6	0.0
Parts			168.75
Parts Discount	$ 168.75	-5.0%	-8.44
Body Labor	5.6 hrs @ $ 42.00/hr		235.20
PDR			1715.00
SUBTOTAL			$ 2110.51
Sales Tax	$ 160.31 @	8.5170%	13.65
TOTAL COST OF REPAIRS			$ 2124.16
ADJUSTMENTS:			
Deductible			1000.00
TOTAL ADJUSTMENTS			$ 1000.00
NET COST OF REPAIRS			$ 1124.16

The crazy thing is, I don't offer a parts discount to insurance companies. Who does? Body shops with DRP or direct repair agreements, that's who.
But I don't have this kind of relationship with Farmers, they just don't offer it to PDR companies. I might want to someday, but since I don't, why give them a discount?

So, when refiguring, the adjuster on the phone came to the end of the additions and says, "looks like we're still about 9 dollars apart?"

"Oh yeah, the parts discount. I took that out," I offered kindly.
"You don't offer a parts discount?"
"No," I replied. "We are not a DRP or direct repair facility."
"Ok, I'll add this back in, then," she replied.

That simple. How many times have you looked at a quote from insurance and cringed? This kind of stuff makes them a lot of money. I don't blame them. But its my 9 bucks. Yours too.
Its their hand in your pocket trying to take the tiny profit you make on parts.
Up to you to slap it away and keep what's yours.

Till next time,

Tim Olson