



# news

A Chapter of POCA

[www.PanteraClubNorCal.com](http://www.PanteraClubNorCal.com)

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## *No Meeting Minutes...*

Due to the fact that there was no monthly PCNC meeting in July, there are no minutes to report, and thus (hopefully!) no corrections that will have to be made in next month's newsletter!

Because of the ever-shifting policies of the various governmental agencies attempting to cope with the Covid19 virus, we have given up trying to guess when we will be able to host our next club meeting. All we can promise is that we will keep you informed as and when we are able to forecast a viable meeting date.

In the meantime, keep on looking for ways to enjoy driving and working on your Pantera, and stay healthy!

# Membership News

## New Members for August:

We have no new members this month.

## August Membership Anniversaries:

We congratulate the following people for the indicated years of continuous membership in the Pantera Club of Northern California:

**Jack DeRyke:** 40 years

**Jim and Anita Kuehne:** 31 years

**Kenn and Anna Roberts:** 20 years

**Denny and Bonita Morse:** 9 years

**Dennis and Liz Valdez:** 6 years

**Don and Amanda Lee:** 4 years

**Ken Bredlau:** 3 years

**Shawn Conway:** 1 year

**Scott Herbert:** 1 year

**Forest and Judy Goodhart:** 32 years

**Tom Galli:** 20 years

**John Cho:** 10 years

**Walter Miranda:** 6 years

**David and Pam Lindsay:** 5 years

**William Wheeler:** 4 years

**David Kleiman:** 2 years

**Paul Fahndrick:** 1 year

# News, Clues and Rumors

**Rally Ends In A Flatbed Ride:** Despite the pandemic, there is still automotive fun to be had, if you know where to look. Erik Kolstoe and Jennifer took part in a classic car rally on August 1st in their Pantera, and had a terrific time right up until they didn't. They experienced what the English so colorfully express as 'a failure to proceed', which ended up in a flatbed ride home.

They felt it was likely a fuel delivery problem, and upon investigation they determined there was some debris clogging up the fuel pickup tube. They blew it out with compressed air, which temporarily cured the problem, but whatever was in there, is still in there.

It sounds like they need to borrow Mike Drew's fuel tank suck-o-matic 2000, as seen in a recent PCNC newsletter....



# The Mach 1 Lives!

*Story and Photos by Mark Bailey*

Although not strictly Pantera-related, since I have been sharing updates about my Mustang Mach 1 project for the past year, I thought I would compile everything into a story for the newsletter. This Mach 1 had been parked, unmoved, in a carport in Fort Lauderdale for 37 years when I found it and dragged it across the country. Best I can tell, it was the only 1970 Mach 1 built with a 2V Cleveland, factory air and finished in Calypso Coral with a white interior. Unfortunately, there was so much rust that a factory restoration would have been cost-prohibitive, so I took the direction to turn it into a street-legal race car.

The teardown began on February 28<sup>th</sup> 2019, and to date I have worked on it 251 times and have just over 900 hours in it.

After the initial teardown and sand blasting (by the way I learned the hard way you should never sand blast—use media blasting because sand blasting warped every panel in the car) I uncovered many surprises...none of them good. There were 46 places I had to cut out rust and do metal repair and that did not include the hood, doors and rear deck lid which were replaced with new sheet-metal. It took me eight hours of welding to replace just the back panel. You cannot run a bead on this sheet metal...or at least I can't. It is tack on top of



*For a barn-find car, the Mach 1 looked pretty good...at first*



*Piles of rusty metal had to be cut out and discarded*



*After finding rust all over the car, hundreds of hours were spent cutting away bad metal and welding new metal in*



*A 10-point roll cage helps ensure safety*

tack until you get a full seam. I added a ten-point roll cage with a swing-out left side diagonal bar to keep me alive in case of a track screw-up.

After a lot of research I purchased a Roadster Shop spec chassis with a five-bar rear link, Spicer 373 rear end, coil overs and Baer brakes, and to propel the car, I bought most of the running hardware from a 2017 Mustang donor from the Parts Farm in Georgia. I decided to use the factory 2017 Mustang wiring harness and all the related computers including traction control and ABS.

From the 2017 Mustang I used the Coyote engine, MT 82 6 speed gearbox,



*The 2017 Mustang dash and console were a perfect fit*



*The wiring harness has over 2500 individual connections!*



*I was able to hang the car by the roll cage, in order to assemble and install the suspension*

cooling system, full wiring harness, master cylinder/pedal assembly, ABS module, fly-by-wire throttle, center console, gage cluster, steering column and the HVAC system.

It took me months to figure out the wiring and on June 15<sup>th</sup>, my birthday, I cranked it over for the first time (without starting it), proving that all the electronics and computers were taking to each other.

With the help of Jon Lund Sr. at Lund racing I added a performance tune and CAI corrections. It

should deliver about 520 HP at the crank.

All of this has been literally shoe-horned into the 70 Mach 1 with the intent to make it look like the blending of the two cars was meant to be. It was finished off with the addition of a lot of sheetmetal fabrication, power steering pump and rack (2017 Mustangs have electric power steering), remote oil filter, Quantum Fuel Systems fuel pump and filter/regulator and Fuel Flow 20 gallon fuel cell in the trunk, Ultimate stainless headers, 1000 HP aluminum drive shaft, and a lot of steel braided line and fittings. Every fastener is engineered.

On July 27<sup>th</sup> the Coyote fired up for the first time. All that is left for the first check-out test drive is to bleed the brakes and finish the steering linkage. It should be a hell of a ride. After that it will be completely disassembled, and every part painted. Then I will put it all back together and hope I don't scratch the crap out of it as I shoe-horn it all back together. I'm looking forward to it!



*The 5.0L (302 cubic inch) 'Coyote' V8 is based on the architecture of the 4.6L and 5.4L modular engines. It features a reinforced block, lowered intake plenum, and new 4-valve DOHC heads that shift the cams outboard and used roller fingers, which allows improved (raised) intake port geometry. It features twin independent variable cams, where the intake and exhaust cam timing can be advanced and retarded independently by the engine control module*



*Finally set on its custom wheels, after more than a year of work the car is ready for its first test drive!*

# *Black Lights Matter!* Fixing A Ten-Year Oil Leak

*Story and Photos by Mike Drew*

Ever since Lori Drew has been driving her Pantera, she has had to put up with a persistent oil leak. The car would leave an embarrassing puddle on the ground everywhere it went, and when underway airflow would whip the oil into a fine mist, which would mix with dust and dirt and completely coat the entire engine bay and the underside of the trunk with a nasty, oily grime.

Periodically, she and I would endeavor to find and fix the leak. We found the source multiple times. Each time, we would say, "A-HA!" with triumphant expectation. The first time, we discovered that all the intake manifold bolts were only finger tight (the engine builder had installed and removed the intake repeatedly, and forgot to tighten them, and of course we never thought to check).

That was the obvious source of the leak, as there was oil splashing around everywhere. However, tightening them had next to no effect.

A few months later, we decided to



*Lori was quite pleased after she finished changing the oil pan gasket and reinstalling the oil pan. The joy wouldn't last long, as the motor still leaked oil!*



*Lori wrestling to remove the oil pan*

readdress the situation, and this time we found that all the valve cover bolts were loose. We tightened them, congratulated ourselves and went for a celebratory drive. After cleaning the garage floor, we parked the car and the next day there was an oil puddle underneath.

Next up was the oil galley plug above the fuel pump. We learned from Mikael Hass in Denmark (who also had his engine built by Dave McLain) that his engine had a similar leak that was caused by using a straight instead of tapered plug for the oil galley. So we duly tore the interior apart and removed the front cover, and reached around and installed a new plug.

Hooray! Except...not. It was still leaking.

We chose to ignore the problem for several years, in the hopes that it would magically fix itself, but of course it didn't. Finally, the car was due for an oil change, and while under the car we found the oil filter was a bit loose and a few of the pan bolts were loose too, so we tightened the bolts. We then

installed a new filter and poured in a fresh batch of Brad Penn Racing Oil (which has a much higher level of the critical ZDDP than conventional oil), and stood back to admire our handiwork, feeling happy that finally the problem had been eliminated.

Of course, there was a puddle under the car the next day!

So we decided to bite the bullet and change the oil pan gasket, because of course it *must* be leaking from there, right? After all, the oil pan was covered in oil, and where else could it be coming from?

So we duly drained the brand new oil into a clean drain pan, then I got out the sawzall and cut off the parking brake crossmember (which had been cut off and welded back on by Roger Sharp in 2009 when the Aviaid oil pan was installed at a tech session at his house). This time we were armed with a bolt-in replacement from Pantera Performance Center (although the parking brake hasn't actually been hooked up since 2009). The rear crossmember had been



*A search on Amazon turned up this incredible and very inexpensive oil leak detection kit.*

cut out and replaced with a bolt-in unit the first time around.

With the two crossmembers out of the way, Lori then got to work, removing all the bolts and wrestling the oil pan out of the car. After much cleaning and scraping of gaskets, a new gasket was fitted and the pan was reinstalled. The oil was poured back in, and we high-fived each other.

It should go without saying that the next day there was a puddle of oil under the car again!

Lori is arguably personally respon-

sible for much of Jeff Bezos' Amazon-derived wealth, so she knows where to go to find a product to deal with any problem life might throw at her. She took herself inside and started searching. Lo and behold, she found an oil leak detection kit, consisting of a special dye that is added to the oil, along with a black light flashlight and yellow glasses, all for only about \$15. She ordered it and we had it in hand two days later. We cleaned the engine thoroughly, as well as the ground under the car, poured it in, ran the car for a few minutes, then

let it sit overnight.

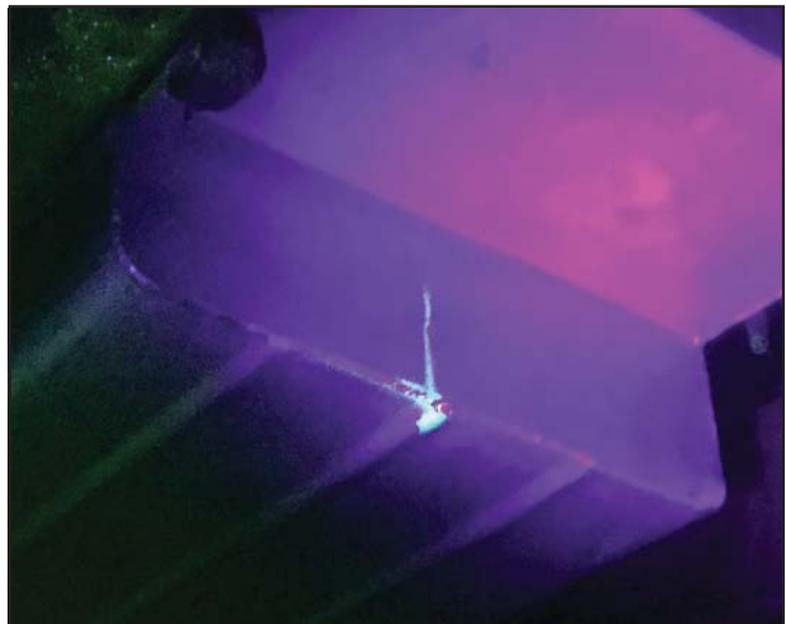
The next morning the black light showed an almost radioactive glow from the oil pooled under the car. A look at the underside of the engine revealed the most amazing thing.

The oil was leaking *through* the oil pan!

When Aviaid makes their racing oil pans, they start with a conventional-style Ford pan, then cut it apart and weld a large box to the top and back to increase capacity. The inside of the pan is filled with a variety of gates and baffles to



*There was a slight amount of oil weeping from around three pan bolts—easily fixed*



*The real shock was seeing oil streaming straight out of the back of the oil pan! It never would have occurred to us to look for a leak here?*



*Here is the inside of a spare Aviaid oil pan, clearly showing the extensive gating and baffling installed to control oil flow and keep a constant supply of oil around the pickup, which resides in the box in the center. This oil control system is welded to the front and back of the pan, as well as at the bottom in several locations. These pans are absolutely fantastic, and a must for any Pantera that is driven with any sort of gusto, as the stock pan is inadequate to prevent oil starvation under heavy cornering or braking*

control oil flow and prevent oil starvation under heavy cornering or braking. They work exceptionally well.

Except in this particular case, when the worker who assembled it was affixing the baffles to the inside of the pan, he blew through the back wall of the pan with his welding torch, creating an incredibly tiny pinhole, impossible to detect with the naked eye. But the dye told the tale, and there was no longer any question where the oil was coming from.

Arguably, the proper way to rectify the situation would be to drain the oil yet again, remove the pan, have the hole welded up, then fit a new gasket and reinstall everything. Lori was none too thrilled at the prospect of yet more work (not to mention expense), and then I had an idea.

This was a job for JB Weld!

For those who are unaware, JB



*After a good wipe-down, it was possible to see two spots where the internal weld had penetrated to the exterior of the pan. The top one had a pinhole, which is impossible to see with the naked eye*

Weld is a miracle product that actually works as advertised. It is a two-part epoxy adhesive (or filler) meant to withstand temperatures of up to 500°F. It will bond to virtually anything, and when it dries it is harder than steel, and can be drilled, formed, ground, tapped, and machined.

I have had a package in my toolbox for 30 years but have never actually had a use for it. Given that it was 30 years old, an executive decision was made to spend the five bucks for a new package. The next day, we drained the oil, then thoroughly cleaned and degreased the affected area of the oil pan. We had found a few minute leaks from around three of the pan bolts, so they were removed, cleaned, given a dab of RTV at the base, then reinstalled. Lori used a metal surfacing tool to rough up the back of the pan, then she squeezed a bit of each half of the JB Weld onto a piece of cardboard and mixed it up thoroughly. She then smeared it liberally over the affected area (I told her to think of it as frosting a cake!), and we let it dry overnight. Later we gave it a second coat, extending the coverage area a bit further.

The next day we once again filled



*After a thorough degreasing, Lori used an angle grinder fitted with a surfacing pad to scuff up the back of the pan to give the JB Weld a better surface to adhere to*

the motor with oil, let it run for a few minutes, then went inside and crossed our fingers.

We tiptoed into the garage the next day, donned the yellow glasses and shined the black light under the car, and saw...nothing! Not a single drop

of oil had escaped from the engine. It was *finally* fixed!

There are numerous lessons to be learned from our ten-year odyssey to achieve an oil-tight Pantera. The first is to never assume that the obvious source of your oil leak is the *only* source of your oil leak. If the engine builder left the intake manifold bolts loose, why would you assume the valve cover and oil pan bolts would all be tight? And although you may have tightened the oil filter as much as you felt was appropriate when you installed it, it certainly doesn't hurt to give it another little snugging up later on.

The most important revelation is the effectiveness of the oil leak detection dye kit. This stuff is harmless (it can be left in the oil indefinitely), but it will *instantly* make obvious the source of your oil leak. Had we simply started here instead of ending here, we could have found and addressed the numerous leaks all at the same time, and saved ourselves about nine and a half years of aggravation!



*The first coat of JB Weld certainly covered the known leak, but the spot just below it was slightly exposed, so after this photo was taken we elected to add a second, larger patch, just to be sure*



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## NEXT CLUB MEETING

**Your Guess Is As Good As Mine, 2020**  
**7:30 P.M.**

**HOLDER'S COUNTRY INN**  
**998 S. De Anza Blvd, San Jose**

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## UPCOMING CLUB EVENTS

All Upcoming Events Postponed Indefinitely....

**REMINDER — NEWSLETTER ARTICLES DUE BY 15th OF EACH MONTH**