

The '66 Corvette Challenge

Part 5

Roger to the Rescue...

By Pat Cavanagh NCRS #57907

In Part 4 of *The '66 Corvette Challenge*, my engine had been rebuilt and dyno'ed, but it would not fit in the frame. Kelly Bolton, Scott Pfuehler and I tried everything, but we could not install the engine and transmission in the frame without making significant modifications to the engine mounts, which was not a safe option.

It became obvious that the engine mounts were misaligned so the transmission would not mate with the cross member. When I originally removed the engine, I noticed that the driver's side engine mount had been modified with elongated holes. Looking back, I should have known there was a problem. I am sure this was done to allow the engine and transmission to fit in the frame. It was obvious at this point that the frame had a problem.

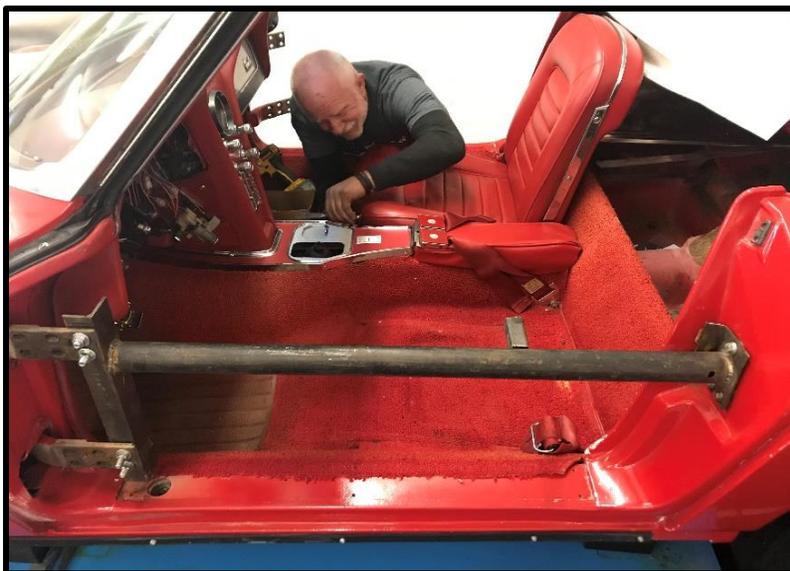
When I purchased the car, fiberglass repair work had been done to the inter front fenders but, I did not realize the frame had also been damaged. The car had C3 spindles and steering components, which were also an indicator of damage to the front end.

Jon McCaskell, a friend of Scott Pfuehler, with significant frame repair experience came over to my workshop and looked at the frame. He was confident the car had been in a front-end accident on the driver's side. He thought the car might have been hit on the driver's side front wheel. That would explain the C3 spindles.

Jon showed us the witness marks on the frame from it being pulled and straightened near the driver's side spring pocket. There was also some minor damage to the number 2 body mount. John said that typically when the corner of the front frame is damaged it also effects the alignment of the engine mounts. It is then very hard to get both the frame and engine mounts to line up again.

Unfortunately, a small amount of misalignment of the engine mounts results in a much larger misalignment of the transmission tail shaft and cross member. My transmission tail shaft mount was several inches out of alignment.

With all my refurbished suspension and performance



components, a stock original frame was my only consideration. This left me with two options, fix the original frame or buy a new/used frame. Both had downsides. I was uncomfortable with the idea of putting a new

(reproduction) or a used frame under the car because of the issues surrounding the VIN number on the frame.

I preferred to fix the existing frame but it was not going to be an easy fix. If I was going to autocross or race this car, it had to be safe, correct and strong.



Regardless of which approach I took, the frame had to be removed from the body. With the help of Scott, Kelly and Charles Buxton we set up Scott's A-frame gantry in my workshop and pulled the body off the frame.

With the engine, transmission, gas tank, steering column and body mounts removed, the body came off in an afternoon.



After we stripped the frame, I made calls to several frame shops in Tulsa, they all confirmed that they did not have laser alignment data for C2 Corvettes and it was a trial and error process

(my words) to bring the frame data points back to the original dimensions. That made me uncomfortable.



I considered reproduction frames from *Vette Products of Michigan* which makes complete GM licensed reproduction frames for C2 Corvettes. I also looked at used frames. I happened to see several beautifully

restored frames from *Roger's Frame Restoration* www.rogersframerestoration.com, which led me to call Roger and discuss possible options.



While Roger had several beautifully restored C2 frames available for sale, I decided to have mine restored, preserving my VIN numbers and saving me future title and ownership headaches. I was particularly impressed with the C2 frame jig in his shop that insured a straight and true frame.

Roger and I had several conversations. I emailed him multiple pictures of my frame from different angles. His analysis after studying the pictures was very similar to Jon's. The car was

hit on the driver's side front suspension and they tried to pull the front corner of the frame back into alignment, with the body still on the frame. Roger said that with the body on the frame, it is very difficult to get the body, suspension and engine mounts all back into alignment. He thought it was also likely that the driver's side frame rail was low and moved towards the center of the car. Fortunately, the rest of my frame was a rust free and in excellent condition.

We decided the best approach to restore my frame was to splice a undamaged C2 front end on my frame. Roger has proprietary C2 jigs and fixtures to insure the frame is dimensionally correct in three axis's. You will see pictures of the repair process in Part 6.

Fortunately, Roger had a '66 Corvette frame from California that had been in a rear end collision, which would provide the donor front end for my frame. This approach left my VIN numbers on the driver's side intact.



Roger had me cut the front end off my frame, 6 inches in front of the firewall body mounts. At that point, Kelly, his son Travis and I mounted the shortened frame on a large pallet we built and trailered it over to the trucking company to be shipped to Roger's shop in Ada, Michigan.



Stay tuned to Part 6 where you will see the process of restoring my frame to like new condition or as Roger keeps saying, "Like it never happened"

Pat Cavanagh NCRS #57907