

The Rebuild from Hell

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The Vintage Triumph Rebuild from Hell

In May of 2013, I bought a numbers matching, titled, 1967 TR6C basket case for \$1425 delivered. It came broken down on a pallet. It was just a frame, two wheels, and most of an engine. The seller said it was a mess – a real understatement!

When I started tearing it the rest of the way down, it became clear how the bike got into the condition it was in. The head was loosely bolted to the cylinders and the cylinders were in place but not bolted down. The head looked like a rusty mess. The rocker boxes seemed OK but muddy. There was only one piston and the other side had a damaged connecting rod and the connecting rods were frozen to the crank. The cylinders were obviously just stuck on it for sale as they were freshly bored or honed, but written on the top was +.60 – they measured +.45 and were tapered so they weren't usable as received.

The crankcase was full of pieces of piston, mud, grass, mouse nests, and mud dauber nests! The primary side had no covers and was rusted solid and the cases were a mix of mud, black corrosion, and white corrosion. This all made what happened clear to me: The engine blew (I later realized that it had been over-rev'ed), was taken partly apart, a hurricane came and filled it with mud and salt water, and then the critters moved in! So started the effort to strip the engine down!

Since it is a matching numbers and titled bike, I needed to save at least the drive-side case. Getting the timing cover off was difficult; getting the outer gearbox cover off took a LONG time. Getting the primary side apart took about ten hours. Getting the gearbox out was such a problem that I gave up after about ten hours of effort and bought a new right side engine case. When that arrived and was no good, I went back to work on getting the gearbox out – took about 20 hours of effort total and only 3 broken bolts. Splitting the cases took a long time too because the crankshaft bearings were rusted together and the camshaft bushings were seized to the camshafts. To make a long story short, there was not a single part inside the engine (or gearbox, or transmission) that was usable! By the time I got the drive side bearing race out of the case, I had spent over 100 hours just getting the engine down to two cases!

So, I finally had the engine cases but they were the ugliest cases I've ever seen. I started trying everything I knew to clean them – nothing worked. I bought a soda blaster but that did no good. I used a bead blaster but that was doing little to nothing. I happened to mention the problem to the people I buy blast media from and they told me what to do – I was dubious but did what they said. I blasted at 90lb with #75 Glass Abrasive until the cases were clean, and looking really weird. I then blasted (peened) with #7 Glass Bead at 45lb to close the metal. It worked perfectly. Mostly the cases look new. There are some dings and scrapes that remain, but the surface looks great and there is no corrosion.

Next came the most rusted frame I've ever worked on. The rear half had been modified and I happened to have a rear frame that I've had for 40 years so that wasn't a problem, but the rust on the front frame was a nightmare. I tried lots of things and it was going to take forever. Finally, I put strong mercuric acid in a spray bottle, put the frame on a tarp in the yard and started spraying. Once soaked, I let it cook for about 10 minutes and then washed it thoroughly – that worked great. The frame is pitted but the rust was gone! I wiped it down with acetone right away and sprayed it with self-etching primer right away.

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Today, the frame looks good. Of course, there is still pitting, but there is no rust and it is painted gloss black and cleared.

Like I said, not a single part inside the engine was usable; I was finally able to save the inner and outer gearbox covers, but none of the components. So, I've spent a great deal of time and money buying an engine, gearbox, and transmission one piece at a time. I said that the engine had been over-rev'ed. I know that because when I started working on the head, I found that the side without a piston had a bent exhaust valve and broken valve guide. That's clearly what blew the engine.

The engine is in the frame, the gearbox and transmission are installed, the cylinders, pistons and rings I bought are installed and I just finished restoring the head, head bolts, intake manifold studs and intake manifold (it's a TR6C, so single carb). In the process of restoring the head, I found a bent valve and broken valve guide so, I had to change them. At least it went well and the head looks beautiful.

Today is 1/25/2014 – eight months after starting. I still have no usable rear shocks, no usable fork tubes (the rest of the fork components are all restored), no fenders, wiring, lights, handlebars, controls, chain, usable wheels, etc.

Along the way, I've saved every possible nut and bolt, plus I've had a lot of originals for a long time that I restore and use wherever possible. I typically blast the parts and the Zinc plate or paint them, whichever is original. I've used very few reproduction parts or incorrect parts in this rebuild. However, I am making it a battery ignition, and I used a 1968/69/70 rear frame. AC Ignition is just not good for street-use lighting and the newer rear frame makes a much nicer mounting for the left-side panel that holds the toolkit. I will have to use reproduction rear shocks since buying real rear shocks that actually work has proved impossible – I've bought many, but none are any good.

Today is 2/1/2014 and Murphy's Law is back with a vengeance and bit hard twice. First, the muddy, but otherwise perfect looking rocker boxes that came with the bike: some idiot tightened the adjuster lock nuts so tight that I had to put each individual rocker in vice and use a long wrench to break them loose! Of course, the threads were damaged so I had to order new adjusters and bolts. I have no idea how the idiot got them so tight without braking/bending/damaging the rockers. Then, when I went to put them together, I noticed the insides were chewed up from the spring washers and flat washers being installed in the wrong order so it was time to find new rocker boxes – I wonder if those metal filings caused the piston to explode or if my original assumption of being over-rev'ed caused it. I suppose it's possible that when the piston exploded that valve got bent rather than the valve floating and hitting the piston.

Once that was resolved, then came the biggest problem so far. The engine was done except for putting the primary cover on, installing the primary drain plug, and filling the primary. I was having trouble getting the primary plug started in the hole, so I lay down next to the bike to get a good look. The threads were somewhat bad, but looked usable with care. Once I started hand screwing the brand new drain plug in, I saw two problems. First, the threaded portion of the plug was longer than it was supposed to be, but more importantly as it went in, a hairline crack in the case opened up!

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After considerable thought, I realized that the case had to be fixed before I could proceed. So, it all came apart. With the left case in hand, I went to a local shop who said they could weld it. When I got there, they decided it was beyond them and gave me the phone number of an “expert” who works out of his garage. I called day and night for weeks and never got an answer.

A friend in England suggested Aluminum Brazing which he saw online. I’ve been brazing for 40 years, but didn’t know it was possible for aluminum. So, I started looking into it. Had to borrow a drill press and buy the correct tap to remake the threads after brazing.

Today is 3/1/2014 and I just sent someone this message in an email: “I got all setup with the drill press. That worked fine. I started brazing, but had trouble getting enough heat but while heating the oxygen surged and melted part of the aluminum! I was able to fill that mess, and the hole, but the actual crack didn’t bond. So, I was able to fix the threads and the mess I made but the original problem still exists! I’ve ordered some different rods to try again, but I’m getting really tired of this bike!” Bad idea to start with something as important as the left side case of a matching numbers vintage Triumph. At least the mess I made can be fixed – by me.

Today is 3/23/2014. I have not finished the case (working on another bike right now), and I won’t for a while because I have to have my hip replaced.

OK, 5/17/2014. I heated the case in the oven at 500 degrees. Then brazed the cracks and brazed the hole closed. Then drilled and cut new threads. It went fairly well, but I got the angle slightly wrong, so the drain plug would never seal. So I machined a steel washer to fit and used metal infused epoxy to make a new steel mating surface – it should be better than new now even though it doesn’t look perfect. I wish I had 220v in my workshop so I could have a MIG welder capable of aluminum – would have made this much easier!

I’m now (5/20/2014) convinced that the bike is possessed and the demon does not want to be ridden again! I was putting the crankcase together and it was going well. That was until the final bolt was to be torqued. That was the top one in front of the cylinders. It never tightened! It did last time, but I guess it was taken apart one time too many. Now I have to strip it all down AGAIN and HeliCoil it, assuming I can find a BSF 5/16-22 HeliCoil kit. I may commit sacrilege and use a 3/8 or 10mm bolt and drill and tap the case to fit – if I could find a 9mm bolt and tap, I would definitely use it because 9mm is just enough bigger than 5/16 that I would lose almost no metal and wouldn’t need a HeliCoil.

Well, 5/21/2014, I ordered a BSF 5/16-22 HeliCoil kit to fix the case. There goes another \$77. I wouldn’t mind, but I’ll probably only use the kit once. At least I’ll be able to use the proper case bolt.

The HeliCoil kit arrived and fixing the stripped hole was easy. The bottom end is back together again and the engine is back in the frame, again! Now onto the top end.

As is usual with this bike, when I was cleaning the piston to get ready to put them back on the rods, one of my brand new oil rings broke! I thought, no problem, the only reason I have new rings is because one of the rings that came with the pistons and cylinders I bought for this engine was broken so I have

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spares. Well I look everywhere and finally convinced myself that I must have thrown them away. So, time to order more – what a waste!

It's 6/6/2014, and the new rings are here. Put them on and installed the cylinders. That went fine, but as I turned around to get the pushrod tubes, what did I see hanging on a nail? The other set of piston rings! I guess it's alright because a T120R with standard cylinders I'm building will need them if the cylinders and pistons I have for it are OK (haven't checked yet.)

Wow! Things are actually going well now – I'm scared! The top end is together, the head stays are installed and the engine is now fully mounted. The carb is ready to go on, as are the oil tank, battery box and so on. I'm in the process of restoring the oil tank – should be done this weekend. It's 6/13/2014 and it's the first time I don't hate this bike! Now if I can just find a stainless steel rear fender and a decent primary cover, I'll be in the home stretch! Maybe things are working out since today is Friday the 13th and a special one at that. We have a full moon tonight. The last time that happened on Friday the 13th was in 2000 and the next time will be Oct 2049, when I'm 99!

It's 6/19/2014 and Murphy stuck again! I went to the Virginia DMV today to get titles for six motorcycles. Guess which one they wouldn't do! Since this bike was purchased from a dealer, Virginia requires a signed title AND bill of sale. Of course, since I bought it through eBay, I got the title by mail but no bill of sale. I showed them the PayPal receipt but they wouldn't accept that as a bill of sale! So, I've written to the seller hoping they will send a bill of sale – we'll see.

It's 7/25/2014, and I've been stuck for a while because I need a rear fender. I did get a bill of sale, so next time I feel like spending a couple of hours at the DMV, I'm sure I'll get the title straightened out. So, after weeks of looking for a rear fender, I found a place in the UK that supposedly had exactly what I wanted, but the shipping was a nightmare. To get around that, I placed a very large order to offset the shipping costs which included six rear fenders. I have three bikes that need the same fender and planned to sell the other three. The order arrived today – guess what! The fenders are very nice and marked with the correct part number, but they are not close to right! So now, I have six fenders to sell and I don't know what they fit so I may have them for quite a while and I'm still stuck on this devil bike! You would think that Wassell, who has been manufacturing replacement parts for Triumphs as long as I can remember, could produce the correct rear fender!

Well, it's a month later (8/26/2014) and I'm still stuck on the rear fender! I've reduced the price again on eBay for the fenders hoping someone can use them for something. At least I finally got the title so if I ever finish this bike I can sell it!

I haven't worked on this bike for a while; it's now 10/23/2014. In early Sep, I ended up in the hospital and almost died from bleeding ulcers. I'm fine now and I've been spending some time on a 1973 T150V (Triumph 3-cylinder 750cc) that I've about decided to not restore and just make into a decent daily rider and sell it. The day I went in the hospital, I finally got a 1974 T150V in excellent condition. I've rebuilt the carbs and done a few other minor things, and it is now my primary bike. I also had a custom fiberglass fender made for the TR6C; but, of course, it doesn't fit. I still haven't sold any of the Wassell

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fenders I bought either. I have rear fenders all over the place and none of them fit! I did finally find a decent primary cover for the TR6C and will polish it up to look new this weekend. I've also been disappointed with some of the paints I've used, so I've started powder coating parts – that's working great.

March 2015, another weird month. This time I was in the hospital for another life-threatening illness – pancreatitis. But the good news is all six crappy Wassell fenders are sold. I also decided my workshop was too small so I contracted to have a much bigger one built. Until its ready, most bike work is on hold.

June 13, 2015, finds me with a new workshop that is within a week of being done. Last week, I received a rear fender from the UK that actually fits and is high-quality. It is raw steel so it must be painted, but I'll live with that. I did restore the ignition coils and mounts as well as the carb and they are installed. I have a very nice original stainless steel front fender on it too, but haven't decided to leave it. Since I have to paint the rear fender and since several other things are not 1967 original, I may save that fender for another bike and use a painted one. There are several 1968/9 parts on the bike already so making it look newer might be sensible.

July 25, 2015, what a pipe dream it was that my workshop would be done in a week! It's still not! I've made a wiring harness for the bike but that's about it. Just today, I finally got a left fork ear that will accept an ignition switch. Since the rear frame is from a later model, the side panel has no provision for the ignition switch so I needed a later fork ear. It's a mess, but I can restore it. So, once I'm able to sand blast again, I'll be able to finish that part.

February 10, 2016, since my last update, I've been admitted to the hospital three times, I had a major heart operation, and I had my fourth sinus surgery two weeks ago. My new workshop is more or less done – well the contractors walked away without finishing and I've pretty much finished it. Right now I'm building a big workbench and hope to get going on my restores again soon.

November 28, 2017, nothing has been done on this bike for a long time. More hospital stays and medical problems plus working on other bikes have kept this on the back burner. The 1971 Bonneville is finished and sold, other bikes are getting done, and I have a new problem. In June 2017, I rebuilt a BSA B25 for a new rider. When he came to pick it up, I was teaching him about it. He didn't understand and his jumping on the kick starter broke it. So, to finish teaching him, I was push starting him and he kept stalling the bike. The last time, I was pushing him slightly downhill. When it fired, he hit the throttle rather than pulling the clutch. I was leaned over pushing so when he pulled out from under me, I went down hard and separated my shoulder. Two orthopedic surgeons told me that it was too minor to fix. Well, my left arm is now worthless and I over used my right arm that already had a torn bicep tendon so it is now worthless. I finally went back to the second surgeon who realized that he was wrong and that it needed to be fixed. That will happen December 4, 2017. After that is healed, he'll work on my right shoulder.

October 17, 2018, since I last updated this, I finished PT for my shoulder, destroyed a tendon in my foot and had surgery on that and then promptly broke the little toe on that foot! The painter I found for my

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personal Triumph 500 has had the tank and fenders for a year now with no promise of when he will finish so I never sent the tank and fenders for this bike.

I did find a new painter in CA and I sent him the tank and fenders for the 70 Bonneville – he did a magnificent job. The tank and fenders for this bike are going to him next. I finished blasting the tank yesterday. I'm waiting for tank badges and screws because I want to send them with the tank – it has some dents in that area.

October 30, 2018, the tank and fenders arrived at the painter and I finally decided on the paint scheme. There is no "correct" paint scheme since this bike is officially a 67 TR6C but is being built as a 68/69/70 model. The closest would be a 69 TR6R but I'm not happy with all red. So, I opted for an early 69 Bonneville scheme. The tank will be Olympic Flame with a Silver center stripe and the fenders will be the opposite.

December 22, 2018, the tank and fenders arrived today – they are beautiful.

January 22, 2019, it's so cold in my shop that I decided to work inside where this bike lives. Went through all the front fender stays I have and found a set that fits properly. The front fender is temporarily mounted. I'll take it back off, blast and powder coat the stays. The rear mount was interfering with the fender but a little time reshaping it fixed that. Now they need to be powder coated. Then it was time to work on the rear fender from hell. The front mount is shaped wrong – have to fix that. More importantly the seat touches the fender – when I checked this fender I didn't try the seat. The seat is probably the problem – I'll have to verify with the original rusty seat pan.