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RealClassic

ISSUE 185 ■ SEPTEMBER 2019 ■ £3.70

Running, Riding & Rebuilding RealClassic Motorcycles

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TRANSMISSION TRAUMA

Ever find yourself in the garage at 2am, wielding spanners in a semi-somnolent state of desperation? That's what happened to Nick Adams with the supposedly straightforward stage of his Guzzi V-twin engine overhaul...

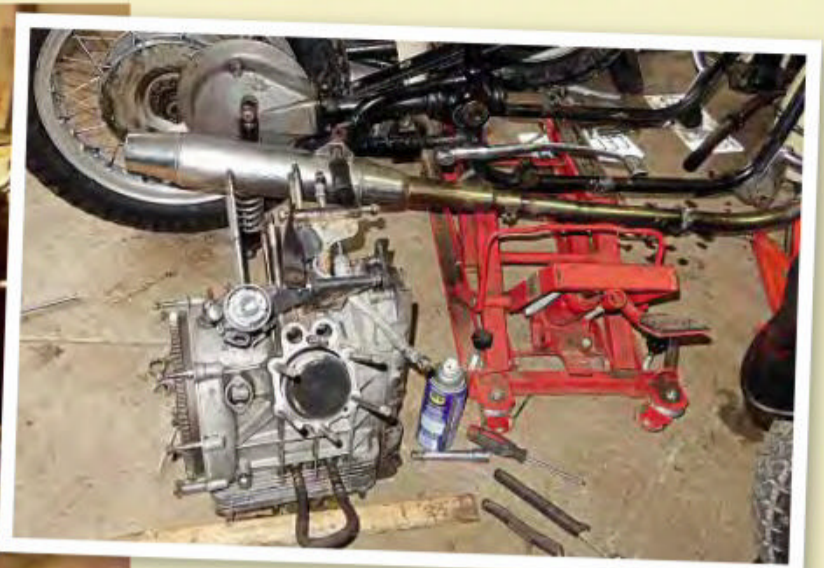
Photos by Nick Adams

Back in RC183 I grudgingly decided that my beloved 1972 Moto Guzzi Eldorado needed an engine rebuild to cure a mysterious knocking that the gremlins had induced while the bike was laid up with a dodgy gearbox. I found a willing guru to

undertake the assignment. Yves Foucher of Montecristo-moto in Quebec, who had just provided me with a replacement gearbox, was quite happy to take on the task of rebuilding the Eldorado's engine as well.

Always looking for shortcuts, I decided to see whether it was possible to extract the ►



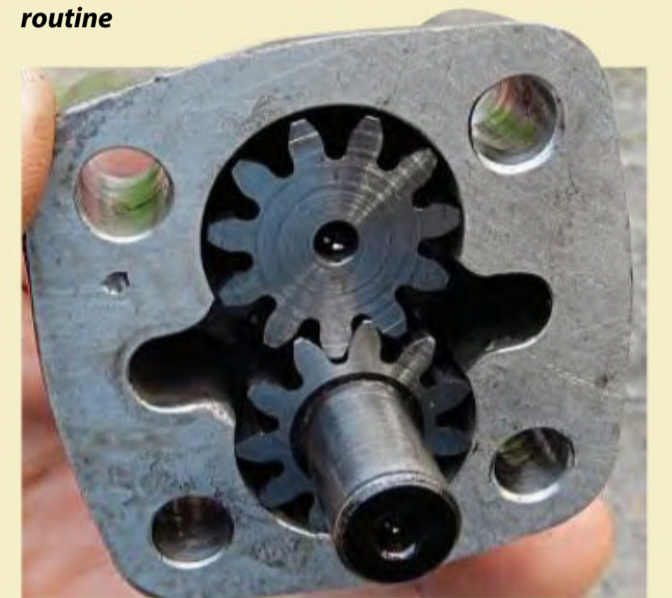


Practice makes perfect. With sufficient practice, ripping the engine from a Guzzi becomes almost routine

There are times in even a Guzzi owner's life when the question of owning a new Honda seems ... complicated



Nick decided that as the engine was being treated to a rebuild, he would take the opportunity to convert it from 949 to the original 844cc. Here's one reason why



One oil pump, the old one, replaced because although it was still pumping, it was worn and sloppy

engine from the frame but leave the gearbox in place. Just then, I couldn't face having to tear the whole rear end of the bike apart as well. I had already taken the heads and cylinders off to find one of the pistons in a sorry state, looking scorched and scratched. By removing the swinging arm bearings I was able to create just enough free space to wiggle the engine off the gearbox studs, then tip it sideways out of the frame. It's a good job

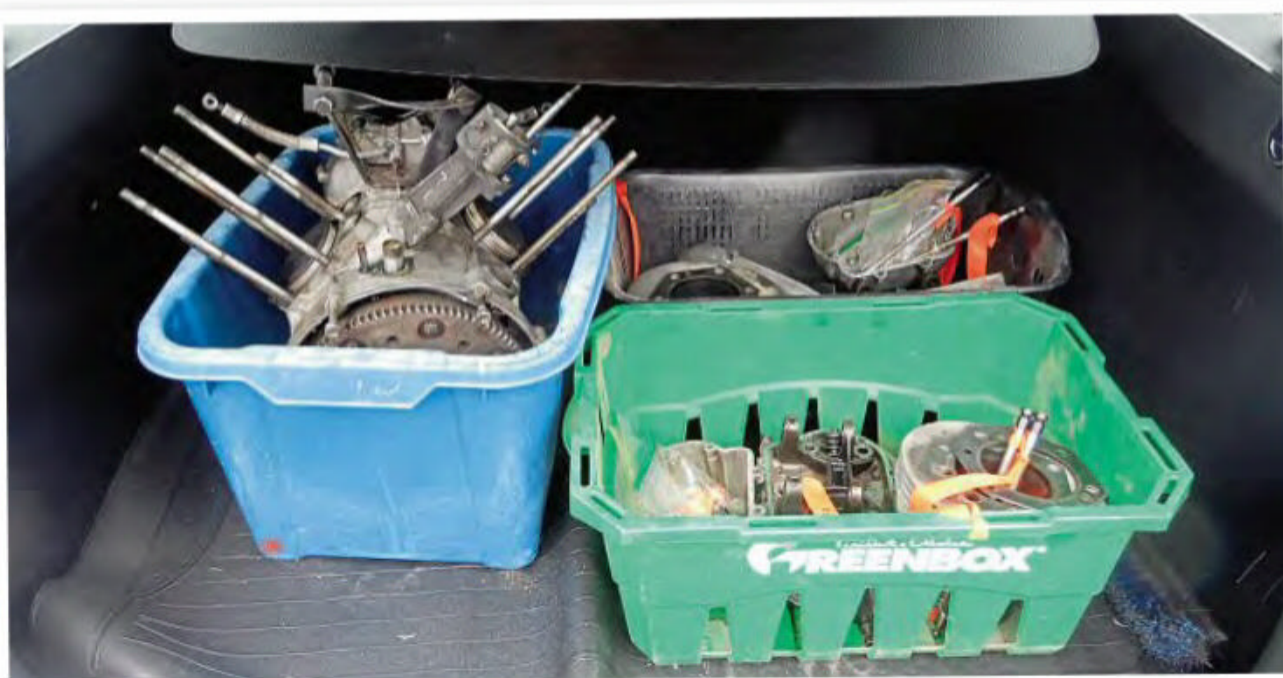
I'm not too fussy about aesthetics as I gouged some nasty grooves in the paintwork – but nothing that can't be fixed with a brush and a bit of black paint. I boxed everything up in three neatly labelled containers and headed east again.

Regardless of what other messes Yves found, I had already decided to replace the cylinders and pistons with new, high-tech Nikasil Gilardonis sourced from

Scramblercycle in Wisconsin. I'd dealt with the owner Kevin before when ordering an alternator kit and found him responsive and reliable. That his prices were also the best was an added bonus. My Eldorado had been running with 949cc cylinders and pistons for the last 65,000 miles but I opted to go back to the standard 844cc with new 83mm bores. From everything I've read and experienced, the larger cylinders provide marginally more torque at the expense of a bit of smoothness. It was going to be interesting to make the comparison.

Yves kept me up to date with progress as he disassembled and investigated my engine. I was particularly happy to get this report:

- Crank journals. Excellent, no scratches or visible wear and they measure perfect
- Big end connecting rods inserts. Excellent, no scratches or visible wear and they measure perfect
- Crankshaft / crankcase end supports front and rear. Excellent condition, no scratches or visible wear and they measure perfect
- Timing gears. Excellent condition, no scratches or visible wear and they measure perfect



One engine, on its way towards resurrection at the hands of an expert

- Camshaft. Good, some shallow scratches that could be polished off
- Cam followers. All have cam surface scores/pitted and should be replaced or refaced
- Oil pump. Not perfect, with wear on the outer part of the gears and pump inner body. Probably still pumps a steady flow but not optimum for a plain bearing crankshaft and should be replaced with a new unit if available
- Connecting rods. Look good but will be checked for straightness and cracks and also weighed
- Flywheel. Very good

I added an oil pump to my Scramblercycle order and got Kevin to send the whole lot directly to Yves. A couple of weeks after he got the parts I got the word from Yves that my engine was finished and ready to collect. Once again I hit the highway. 186 miles each way may seem a long way to go for an engine rebuild but Canada is a big country and skilled Guzzi specialists are thin on the ground.

Before long I was back in my garage, heaving the heavy lump into the frame. It all went surprisingly well. Once it was all bolted together I tried to start the engine. It coughed, spluttered and wouldn't start, seemingly eager to use the carbs as an exhaust system. I checked the timing. Like an idiot, I'd set the distributor 180 degrees off.

That resolved, it was time for a ride. I wheeled the Eldorado into the sunlight and headed down the road. It was bucking and burping – things I knew which could be fixed with a little carb cleaning and tweaking – but took off like a scorched cat. Plenty of power, oodles of torque, and a happy rider, until the clutch lever suddenly came loose in my hand and the bike shuddered to a halt.

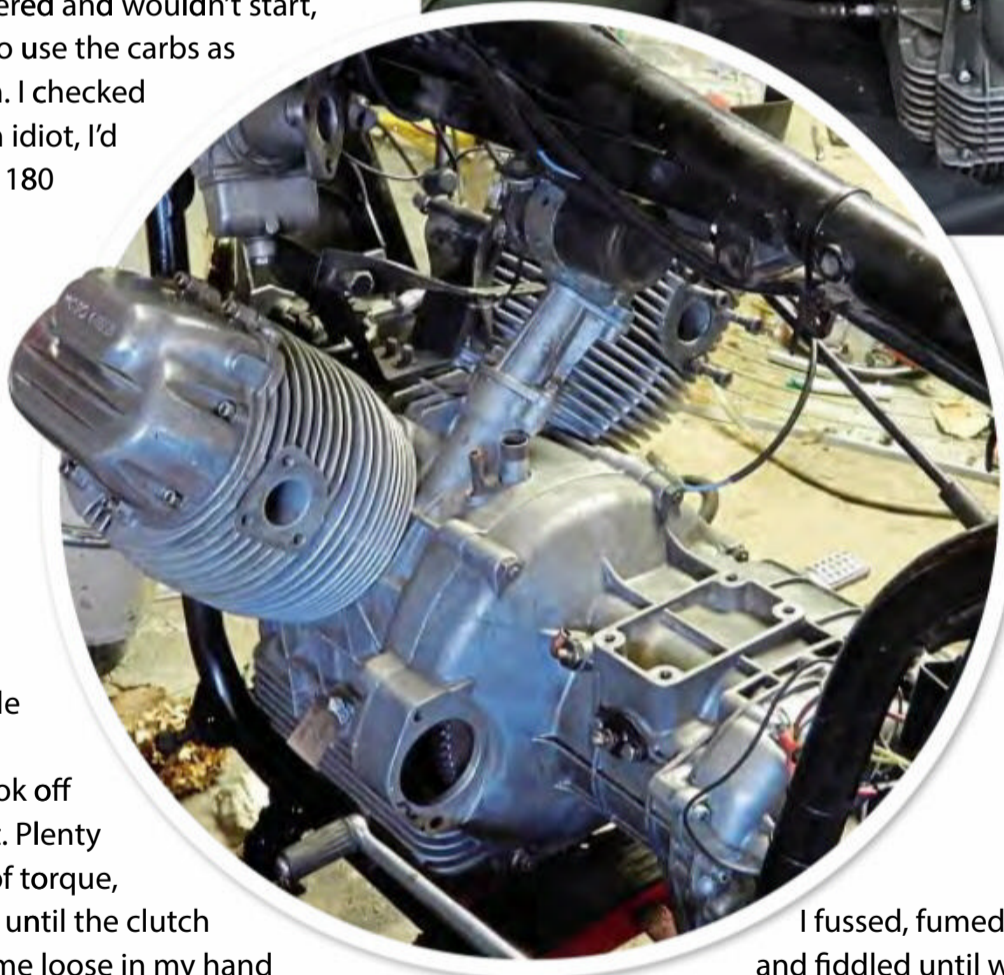
Thinking I'd not adjusted the cable properly first time around, I took up the slack with the adjusters and started off. A few yards later it happened again. My next thought was that the adjuster screw on the clutch lever at the back of the gearbox had stripped its threads – but no, all seemed normal there.



Yves the Expert applies hands-on skill to Nick's engine



Above: Back in the back of the car – one rebuilt engine, hurrah. Left: Replacing the Guzzi engine does indeed become easier with practice. Which is just as well



I fussed, fumed and fiddled until well after dark.

As I lay in bed my monkey-brain was hyperactive, working through my mental diagram of the Eldo's innards, finally concluding that the only answer was to pull the gearbox again. Sleep obviously wasn't going to happen anytime soon so, at 1am, doing my best not to wake my partner, I got

up, pulled on my garage clothes and headed downstairs.

Off came the toolboxes, the battery, the seat, the fuel tank and the rear wheel. Once again wires were disconnected, linkages removed and sundry bits and pieces either taken off or pushed out of the way. By now I was an expert in tearing the bike apart. I no longer needed to label anything or follow instructions. Loose bits were just thrown in a heap. I knew exactly which nuts and bolts went where and which tools were required at each stage. I was flying.

By 2am I had the gearbox out of the frame and on the floor. A few minutes later the clutch was apart, double checked and reassembled. I pulled the clutch pushrod and thrust bearing from its tunnel through the gearbox. Hmm. Something's not right here. Some clown (that would be me) had incorrectly installed the thrust bearing. I carefully laid out all the pieces, examined ➤



them for damage or flaws, double checked the diagram in my Guzzi parts book and reassembled.

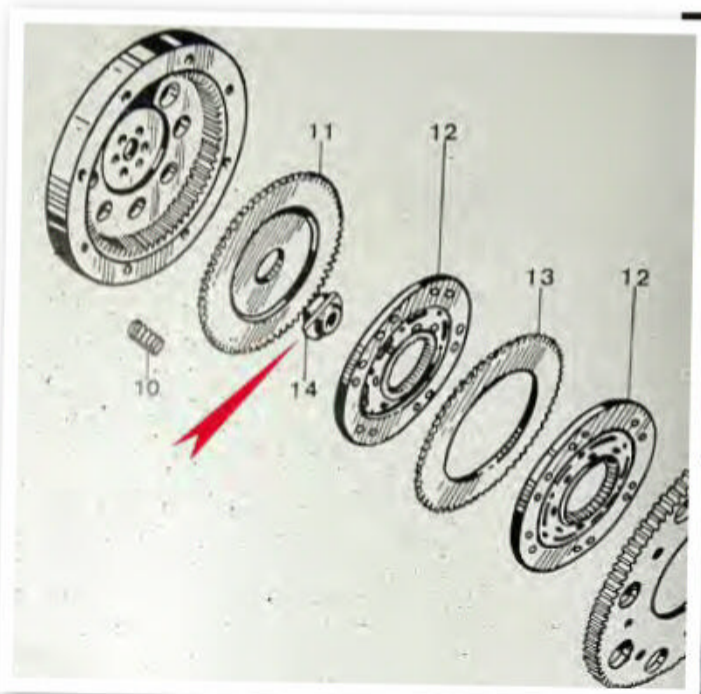
Sticking the gearbox back in the bike was so easy now I could have done it in my sleep. Perhaps I did. By 2.30am I had the gearbox

back in, the swinging arm connected, the rear wheel on and was reaching for one of the toolboxes when I saw something that made my heart sink. There, sitting on the floor was a little part called the clutch pressure plate cup. It may be small but it's mighty. It sits in

the middle of the clutch and the clutch rod pushes against it. Without it the clutch won't work.

I slunk off to bed.

I slept deeply, but not for long. By 6am I was back in the garage ripping into the Guzzi.

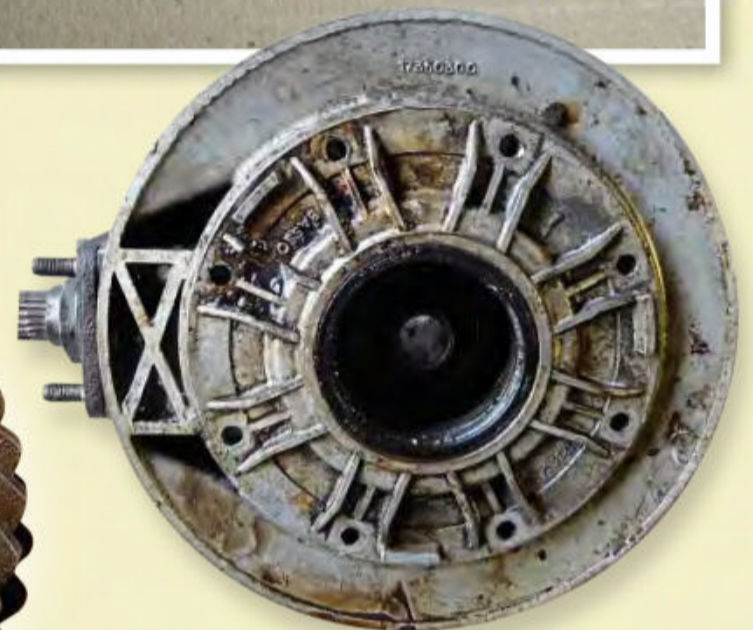


Above: Isn't it remarkable how leaving out a single small part of a clutch can render it inoperative? Nick is expert at working on Guzzi powertrains. Which is just as well

After fixing the clutch, Nick was off again, seeking perfection, until there appeared a nasty rattle from the rear drive box...



Above and right: Bolts retained by tab washers rarely break loose. When they do, the results can be fairly scary



Left: Although it's covered with debris from those escaping bolts, the big drive pinion was unscathed. This is a good thing

Although I still had to remove the same old bits, I found that I didn't have to completely remove the gearbox. I was able to unbolt it, slide it back, sideways and up, giving me just enough room to put the pressure plate cup in its rightful place. By breakfast time the bike was road-ready.

It started. It ran. The clutch disengaged when it was supposed to and engaged nicely when I let the lever out. It no longer created unexpected slack. Success. Although its low speed carburation needed some work at anything above an idle, the Eldorado was smooth and powerful. The gears and clutch worked as they should. I was soon rocketing along, relishing the crisp performance and the meaty sound from the Mistral exhausts. I almost wrote 'silencers' there, but that would be a misnomer as they don't do much silencing.

After a few miles I turned around and headed home. I wanted to smooth out the idle and there were panniers and racks to install. As I accelerated up a long hill I felt a slight judder from somewhere in the rear, accompanied by a disturbing rattle. I slowed,

but all seemed smooth again. A little further on it happened again. This time I could tell there was definitely something happening in the rear drive box. I limped the remaining few miles home.

My first thought was 'Did I forget to put oil in the rear drive?', but no, plenty of gear oil drained out, along with a disturbing quantity of metal flakes and chunks. The magnetic filler bolt was covered in small fragments of steel and the oil was spotted with chips of aluminium. If a few, well-chosen expletives tainted the air, I'm sure you can understand.

It's at times like this I find myself looking over at my fuel injected, electronic ignitioned, low mileage Guzzi Quota, thinking, 'Why don't I just make do with that instead, or better yet, buy a new Honda and to heck with these older bikes?' But much as I like the Quota – and it really is a very fine, reliable motorbike – and as much as I admire Hondas, they just don't thrill me as much as the older bikes. Call me irrational if you like.

I set to work once again.

The problem was easy to identify. Two of the bolts that hold the bevel gears in place

had chosen that moment to work themselves loose. As their heads started to protrude, they ripped through the webbing on the inner case, showering the internals with chips of aluminium, until the bolt heads parted company with the threaded bits and started rattling around on their own. How it could happen is anyone's guess. The bolts are secured with tab washers and should never have been able to work free. Why it happened then, after all those road miles, is a mystery. I was just glad it had happened close to home and not down some isolated road in the middle of nowhere.

Once I'd flushed out all the stray metal, I inspected the bevel gears. Astonishingly they were undamaged. No chips, no missing bits – nothing. They looked as good as new, or at least as good as one could reasonably expect after all those miles. I checked the bearings. They too seemed unfazed by the event. The case was a different story. The interior webbing was an ugly jagged mess. I looked for cracks or serious structural damage but could see none. I could live with ugly.

I drilled out the broken bolts, re-tapped the ►

holes and reassembled the drive box, using good tab washers and copious amounts of thread-locker. With the wheel back on and new gear oil and moly in the drive, I gave it a spin. Smooth as silk. No nasty grinding or crunching noises at all.

With everything stitched back together I started the Eldorado and took it for a quick spin around the block. Other than not wanting to idle on the right cylinder, which I eventually traced to a manifold gasket leak and a partially blocked idler circuit channel, everything seemed to be working well.

I dropped my friend Phil an email suggesting lunch tomorrow around noon.

'Sure,' he replied. 'Eldo?'

'Yep.'

We would meet somewhere equidistant between our homes, roughly 175 miles each way for both of us, although I got the better part of the deal. Phil had to navigate around the urban chaos of Toronto, while I had country roads the whole way. If you're keyed up for another sorry tale of roadside disaster, I'm sorry to disappoint you. The Eldorado behaved flawlessly and was running so well that Phil and I even explored a few back roads together before parting company again for the journey home.

The newly rebuilt engine is very slightly

smoother than its former 949cc self, but I do notice a fraction less torque on long, high gear hills. Obviously, these are early days, but things are looking good. It will take a little while for the new pistons to bed in and fully loosen up, and there is plenty of

time for new gremlins to emerge as the miles pile on. For now, though, I'm delighted to have my Eldorado back in road-worthy trim and ready for some new adventures.

Now, where's my road atlas? **Rc**



Fixed! Moto Guzzi reliability is legendary



Time to meet a friend, to tell tales of obstacles overcome, and to plan great rides...