

MG TC 'stop and go' gremlins

This saga of intermittent engine failures in my 1946 MG TC is spread over more than five frustrating years.

I finished restoring TC0999 in 2012, and had the usual teething problems following a major rebuild. However, the engine has stopped unexpectedly on many occasions in the decade since, which is always inconvenient and sometimes dangerous. I was no longer enjoying driving the car, constantly on the lookout for a safe place to pull over, and returned home twice on a breakdown truck. Needless to say, my wife has been less than impressed! This article describes the tortuous process to find and fix the problem.

Symptoms

The engine usually stops after driving for at least 30 minutes, sometimes hours, and when in slow or stationary traffic. The engine often runs unevenly before stopping, but can also stop suddenly. This is more likely to happen on a hot day.

The engine won't restart immediately, causing obstruction to following traffic. I now keep to quiet roads as far as possible, where unplanned stops cause less hassle. A long-distance trip is out of the question.

After waiting 10-15 minutes, the engine will usually restart and run normally until the next stoppage, sometimes within a few miles. After these incidents, the engine is prone to die on idle, such as pulling up at a road junction, with the same restart issues.

The engine bay is clearly warm in these circumstances, but there are no signs of overheating. However, the coil is rather hot to touch, but this doesn't necessarily mean it's too hot.

The engine performs well, sometimes for many miles. However, the problem always recurs, and has become more frequent. Recently, I noticed some drops of electrolyte on top of the modern sealed battery, possibly caused by overcharging. When the car is parked up for more than a few days, I use a reputable trickle charger.



ignition failure after two hours driving

Diagnosis

Ignition (distributor rebuilt during restoration; standard points): I've made all the usual ignition checks, and am satisfied this is working correctly, aside from occasional coil failure. The coil seems to fail when hot, working again when it cools down. However, it's difficult to be sure, as this only occurs when driving, and is short lived. This has happened with several new coils over time, so something else is clearly causing this.

Fuel/vapour lock: the symptoms could also suggest vapour lock, which seems more prevalent with modern fuel. I suspect vapour lock and coil failure have both been contributing to engine failures. I've had the exhaust manifold ceramic coated to reduce engine bay temperature, and fitted a heat shield and insulation spacers, but coils have continued to fail.

Electrical charging (dynamo and voltage regulator rebuilt during restoration; original solenoid set up): strangely, analogue voltmeter and ammeter readings show the charging system to be working correctly, but digital multi-meter readings are very erratic, fluctuating well outside the specified levels, suggesting a faulty regulator. High voltage will obviously damage electrical components including the battery, and could cause a fire!

Solution and Postscript

I've had the original voltage regulator converted to solid state electrics, and the dynamo rebuilt (refitted in May 2022). In theory, this should be a 'fit and forget' solution for reliable charging, and externally, the regulator looks original. I have also fitted a new battery and coil. After all the hassle, I decided reliability and safety most definitely trump originality.



RF91 voltage regulator (original solenoids)



RF91 converted to solid state

I suspect the regulator may have been failing progressively over time, possibly due to a poor initial restoration. This would explain why long trips soon after restoration were trouble-free, including one trip of over 1,000 miles. The dashboard ammeter has always shown 'normal' charging levels, and the modern battery has performed well. Perhaps I should have realised earlier that recurring coil failures may be caused by overcharging. Anyway, it was the battery electrolyte spill and too many coil failures that suggested the charging system was faulty.

As you can imagine, I've consulted widely on these longstanding gremlins, but only one person suggested the charging system might be the cause.

So, here are my suggestions should you experience recurring coil failure:

- attach a spark plug tester to one high tension spark plug lead; this will instantly establish if there is no spark, often only evident for a few minutes; it is safe to leave the tester connected for an immediate check
- if the coil becomes unduly hot in normal use, it may have failed; try a 'known good' replacement
- if the replacement coil suffers the same fate, even after several months, check the charging system with a good quality digital multi-meter
 - adjust the voltage regulator as needed; better still, have it converted to solid state electrics (or fit a new replica) for reliable and maintenance-free operation
 - the dynamo output and condition will determine whether this also needs attention

TC0999 has been reliable for over 1,000 miles since upgrading the charging system. This included several all-day trips, steep gradients and queuing traffic. I'm beginning to hope the gremlins have finally been sorted.

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