Some Strange Technical Problems Seen This Year

Over the course of this driving season I was asked to help several folks figure out what was going on with their car not running well or failing to run at all. I want to share some of my findings so that if any of the readers encounter a similar symptom, they may have a few things to check and perhaps solve the problem. I have written in the past that two of the key things to look at when a car is not running right is fuel and ignition. I always start with these two and then explore further if needed. The first story I will tell is regarding a 1970 MGB with a Lucas 45D4 distributor. Paul was complaining of intermittent stalls as the car was being driven and finally it stalled out on the interstate. Eventually he got it started again and was able to make it to an exit ramp (not far away) and to a filling station where he could leave it. I came the next day to check it out and there was plenty of fuel being pumped, so, I looked for a spark at the points. This entails removing the distributor cap and turning on the ignition and then opening and closing the points with a small insulated screw driver being careful not to ground anything. There turned out to be two problems. One, the vacuum advance had become disconnected from the moveable plate that holds the points allowing the timing to vary. The vacuum advance on these distributors is different from the 25D4 distributor which has a flexible actuator connected to a pin. The 45D4 has a flat metal actuator connected to the pin on the floating plate and this flat strip can become deformed and disconnect (particularly on the reproduction distributors). I was able to bend the actuator up a little and now it stays connected. Two, I then examined the wire that is part of the condenser circuit. It has a metal contact which is held in place by the spring on the points set. The positioning and insulating piece that insulates the spring from the upright support had melted and was allowing the low voltage from the coil to short and not reach the points as well as the wire from the coil was only loosely held into the metal contact plate. I replaced the condenser and wire assembly as well as the insulator and that solved the problem with the intermittent spark.

I had another issue, this time with an MGTD that started and ran great, but intermittently started faltering and then started running well again. It seemed like a fuel system issue, but after inspecting the carbs and ensuring they were in adjustment and working correctly I isolated the fuel system by installing a spare solid state fuel pump and fuel can to supply fuel to the carbs, bypassing everything else in the system. The engine exhibited the same issue. I had already checked that the spark was consistent on all plugs, but short of driving the car while holding the timing light in one hand and watching the flashes it looked like it was not an ignition issue. But, wait! I asked some friends of mine what they thought and they said that a faulty condenser could mimic fuel starvation symptoms. Joe called me up again and he said it was running poorly even at idle now, so, I put the timing light on it again and got an intermittent flash on each spark plug wire. This happened to be another aftermarket Lucas 45D4 replacement distributor that was installed about 3 month before. I had already tried replacing the coil with not change in symptoms, so, I changed out the condenser and attached wire and then the car ran beautifully.

Don had just finished rebuilding his engine and getting everything installed again and decided to take the car for a test drive. Still in his driveway the car died and would not restart. He had no problem cranking the engine and there was fuel getting to the carbs and the ignition spark was good on all spark plugs. So, what could the problem be? He called me up and I was stumped as well, so, I asked my friends at the “Car Guy Lunch” group that I attend. One suggested looking for a massive vacuum leak. So, I told Don this and he checked and sure enough on of the end caps of the intake manifold had fallen off! These are like freeze plugs which must be tapped in at the middle to increase the size of the plug and make a compression fit. He had not tapped them in, so, there was not vacuum to draw the fuel/air mixture into the cylinders from the carbs, thus, the engine would not start and run.

So, there are actually three things that are needed for the engine to run, Fuel, Spark (Ignition), and Vacuum. This leads me to the next two stories. Skip called me up from North Carolina and asked for some help. He said he was driving his MGB and it was running great, then all of a sudden it started running poorly and making a lot of noise. He was able to limp it back home, but he did not know where to start looking. He though he may have thrown a rod or something. I told him to do a compression check and this will determine if there is a top end issue or bottom end issue. If a single cylinder is low on compression to the others (more that about 10%) then you squirt some oil in the cylinder and run the test again. If the compression comes up, then it is usually a problem with the rings or scored cylinder walls. If it does not come up, then it is usually a top end issue like a burned valve or bent push rod or valve adjustment too tight, etc. It could still be an issue with a hole in a piston, but at this point you have to pull the head anyway (usually). The other condition, and this is the one Skip found was that two adjacent cylinders (1 and 2) both had low compression. This is almost aways a blown head gasket between cylinders. He pulled the head and, sure enough, it was a blown head gasket. He has it all put back together again now with a few other fixes/upgrades along the way and the engine is running smoothly again.

Stan asked me to come over and help him get his MGTF started as he thought he had a bad fuel pump. He had just had the car inspected after we got the brakes unstuck from sitting for four years and he had just replaced the battery since it was weak. Now, the car cranked over just fine, but would not start. I rapped on the fuel pump and it did not really want to work, so, I bypassed the fuel system with my spare fuel pump and gas can and fed the carbs directly. I checked for spark and it looked good. I checked for compression on number 1 cylinder and that was good. I though perhaps a mouse had built a nest in the muffler (as this will cause loss of vacuum as there is nowhere for the output to go), but that was not the case. I had not removed the air filters, so, finally I removed them and noticed that the throttle dampers (pistons) did not really rise much. I then held my hand over the mouth of the car while cranking the engine (using the starter switch) and noticed that I had vacuum on the front carb (my hand wanting to get sucked into the opening), but not on the rear carb. So, I checked the compression on all the cylinders and found no compression in number 3 and 4 cylinders telling me that he must have blown the head gasket between these two cylinders while he was driving the car

back from the inspection station! The car is now waiting for me to change the head gasket.

The last story has to do with a Austin Healey 3000 and the “helpful brother in law”. Jack called me up to come take a look at his car because he was trying to solve an intermittent stumble in the engine at speed and his brother in law decided to help and change the points and condenser. Well, the car would not start after that, so, I went over to take a look. This car is a later model AH 3000 with the Lucas 25D6 distributor. It is very much like the 25D4 but for 6 cylinder cars. I found the one problem right away, the brother in law had installed the condenser wire and coil low voltage lead on top of the insulator on the points spring rather than underneath it thus causing a short directly to ground. I placed the wires inside the insulator and put the nut back on and then the car started up just fine. While I was doing all this I examined the distributor cap and noticed that there were wear marks on some of the spark plug wire contacts inside the cap. This indicates that the distributor shaft is wobbling and the rotor is actually making contact with some of the cap electrodes. This can also cause the gap to widen to some of the contacts causing a misfire. I checked the shaft by grabbing ahold of the end and wiggling it and it showed quite a bit of movement, so, the distributor needs to be re-bushed/rebuilt or replaced. I am sure this is what was causing the misfire.

So, this is an example of several issues that can be easily diagnosed and some are easily resolved, others, not so easily, but do-able. I hope this has been informative and perhaps entertaining. We have a long winter ahead of us and our driving season is about over for this year in the NorthEast, but we certainly can entertain ourselves by tinkering on the cars and/or reading tech articles to keep our minds limber! Happy Holidays to all our club members and everyone else who reads this article.

Safety Fast ,

Jack Horner
President, Bay State MGA Club

A well sorted MGA engine compartment (Don Tremblay’s)