Reliability:

For me a car must be reliable! I realised over 50 years ago that to sell a car easily and for maximum price you have to cure all its niggly faults before sale; so why not rectify faults immediately they occur and reap the benefits for yourself?

For me driving is one of the pleasures in life and I have never really tired of it. In all that time I have only had one occasion when I couldn't complete my journey.** That was in 1966 when I was driving my father-in-laws Hillman Minx 1600 Super when it threw a con-rod through the side of the engine crankcase.

Note.
*** I have broken down occasionally but carrying a decent tool kit and some common sense items has always allowed me to continue on my way, apart from when the Super Minx threw a con-rod.*

We all know that the secret to a lack of breakdowns is reliability! So what effects reliability? Maintenance is crucial for a car to be reliable; but don't just service it, if you spot anything that looks out of place then fix it.

I know for a fact that when my modern day car goes in for a service they don't even take the wheels off or adjust the tyre pressures!** On our cars it's best to remove them. Check the front wheel bearings before removal and adjust any free play to within the recommended limits. Removing the wheels allows us to easily remove the brake drums to check wheel brake cylinders and shoe lining thickness etc. on the back and a proper check of the calipers at the front, including if necessary removal and cleaning etc. of the brake pads. While the wheels are off it's easier to grease the front suspension, also to check the flexible brake hoses. Do a visual check first and then hold each hose in various places while someone presses the brake pedal; if you can feel the hose bulging then change it. While the wheels are off it's easy to inspect the tyres, remove any small stones etc. from the treads, and check for any adverse wear which can indicate other problems. Finally adjust the tyre pressures and set the spare so it is at the highest setting be it front or rear.

Note.
*** If storing the car over winter put an extra 5psi or so in the tyres, or preferably store it on blocks.*

If you get any observations on an MOT Report then fix them, you'll probably have to rectify the fault(s) before the next MOT so you might as well do them now.

Does driving style effect reliability? My every instinct tells me it must but my best friend's son is an awful driver! He goes everywhere (even in built up areas) at high engine rpm in a low gear, normally only changing up when the needle hits the red. Yet he gets very high mileages from his car engines. He does a lot of mileage as a delivery driver for his dad's company. His current car (a Saab convertible bought new) is approaching 300k miles with the same engine, mind you he only gets around 20k miles to a clutch and has had a new gearbox.

The electrical system probably causes more breakdowns than any other part of the car, mainly on the ignition side. On our cars the original ignition system is very simple. For me an early task with an old car is to renew, spark plugs, ignition leads, distributer cap, rotor arm, CB points and condenser (some of the removed parts can be carried as emergency spares). It sounds like a lot of money but to renew that lot on an MGB based NG is only around £40.

Batteries and leads should get a bit of attention. The green crud that tends to accumulate round battery terminals is quite simply removed from the leads and terminals by pouring boiling water all over it, best to remove the battery first though and hold the leads over a bucket! While it's off give it

a good charge. If the battery terminals are corroded then it is a fairly simple matter to change them. Our cars are not so bad but some later modern alternators don't seem capable of kick starting a battery once it drops below a certain voltage. Buy one of the special battery terminal wire brushes and give the battery terminals and leads a good going over. Assemble it with a smear of Vaseline to help prevent further corrosion. If your batteries in the boot it's a good idea to cover the top, you don't need to get too involved and even a piece of carpet will prevent metal objects causing a short circuit. If your battery requires replacement then a little extra expenditure on a good quality zilch maintenance one will pay dividends. Winter temperatures can destroy a semi-discharged battery, many cars will have some electrical components that work when the car is switched off (clocks and burglar alarms etc.) so give the battery a trickle charge occasionally.

Whenever you remove the sparking plugs check their condition, which will give a good indication of any carburetion problems. Running either weak or rich is not good for an engine. An engine that idles smoothly and accelerates without any hesitation is the yardstick.

Chafing of electric leads, fuel pipes and brake pipes etc should be avoided. If building a car from scratch I take suitable precautions. On a built up car you can use suitable internal diameter fuel or coolant pipe. A short piece slit length wise and cable tied in position will do the trick.

On our cars the dummy radiator filler cap is quite an attractive item. Improve its protection against theft by using thread lock where the stud goes into the cap and using a Nyloc nut, or locknuts, to secure it in position; or drill it and use a castle nut and split pin.

If you have good tyres the chances of a puncture are considerably reduced, also try not to drive in the gutter where all the debris ends up. During the whole of my motoring life I have only ever had around six punctures and those were in the early days. Good tyres also bring other benefits including improved road holding and braking. Tyres on our cars are not particularly expensive and a complete set of five is less than the price of one tyre for the top of the range Lexus that my wife used to own.

You have to be able to keep the oil and water in it. This could mean renewing top and bottom radiator hoses and heater hoses (l currently use EPDM SAE J20R3 specification hose). While you're at it change the crappy old hose clips for new stainless steel. On later engines it's worth fitting a brass coolant drain tap in the engine block (early engines have them). Don't pay over the top for a MGB tap; buy a 1/4" BSP brass drain tap for a Ford Tractor at £5.20 including postage.

Bluecol antifreeze is recommended for older engines and £19.99 will get you five litres (actually ten litres as you mix it 50:50 with water).

In this day and age modern day fuel with its ethanol content plays havoc with old car fuel systems.** Regular renewal of flexible fuel hoses is a must! There are a lot of crappy fuel hoses on the market and it is essential to read the specification and buy ethanol compatible hose. Expect to pay around £4 for a metre, which should be enough to renew the hose by the tank and at the carburettor end. Don't forget the small bore pipe between the two carburettors. If you can afford it buy the top grade petrol.

Note.
*** Ethanol can affect diaphragms in fuel pumps, most fuel pumps can pump or suck through another pump so during a new build or rebuild it's worth fitting an additional, separately switched, in-line electric pump.*

Nuts and bolts should be tight, work your way around the car and make sure the suspension mountings etc. are all secure.** With the exception of some suspension, steering and propshaft etc. bolts that need to be High Tensile I use A2 stainless steel almost exclusively, it has a tensile strength better than most common bolts and is approximately 85% of the strength of 8.8 High Tensile so it's good for most applications. Don't forget that nuts and washers need to be high tensile as well as

bolts. Some marine grades (A4) of stainless are as strong, or stronger, than high tensile but don't be tempted to use them as they can get brittle (weak) with age when used in high tensile situations.

Note.
*** Wherever possible fit Nyloc or another form of self locking nut. I served apprenticeships in both automotive and aviation engineering. In aviation we never re-used a self locking nut, the criteria was to have between 1.5 and 3 threads showing past the nut, no more and no less, so buy bolts or screws of the correct length. If building a car from scratch I use cheap plain nuts during initial assembly and when happy I exchange them for self locking nuts.*

It's surprising how many old cars have switches that rotate in the dashboard, which could strain the wiring. Emma (my TD) was no exception and the body of the ignition switch turned with the key. To tighten up such a switch generally makes matters worse, or at least fails to improve things and scratches the dashboard to death. I have found that sliding a rubber 'O' ring over the switch threads (so it is trapped between the back of the dashboard and switch body), tends to keep everything secure. It always annoys me when I buy a switch without a washer behind the hexagon securing nut** as tightening it up scratches a circle in the surface of the dashboard. Recently I purchased an expensive switch and took it back because it had no washer; when I explained why I had returned it the 'Dork' behind the counter said that a scratched dashboard gives it a 'patina' (pillock!). For switches with large securing nuts a piece of thin locking wire wound round a suitable diameter bar and cut to size makes a split ring that keeps the inner face of the nut slightly clear of the dashboard to prevent scratching; also if you have room to turn the switch body then turn that instead of the nut.

Note.
*** If I'm building a car I tend to use Lucas toggle switches (or aftermarket replacements) with the round nuts as they don't mark the dashboard and, despite being Lucas made, are really nice switches; since the introduction of IVA you have to be careful where you put them on a new build as they don't meet current (no pun intended) IVA requirement's,*

Don't forget the exhaust system, rubber hangars don't last forever and correctly fitted they help prevent stress on the exhaust system. While you're at it get the exhaust silencer up and away from those sleeping policeman, if necessary use a piece of aluminium sheet to deflect the heat if the pipe run is too close to the fibreglass bodywork; don't just bolt it directly to the fibreglass, space it away slightly with small rubber bobbins or aluminium or stainless etc. spacers to allow some air flow. If you don't have the luxury of a lathe then use a few stainless washers as spacers.

A good general service is essential and I always do a complete oil and filter change on an unknown car. Oils/lubricants don't improve with age, but the specification can improve over time. Our older engines don't necessarily need the latest high technology lubricants; in fact they may do more harm than good. After an internet search I decided to use Castrol XL 20/W-50 in the MGB 'B' Series engine. The same oil is recommended for both manual and overdrive gearboxes. In the rear axle I used Castrol EP90.

Sundries include; a new oil filter, fan belt, thermostat and gasket, throttle cable, air cleaner filter elements and wiper blades. If there are any leaks from the rocker cover then don't just tighten it, fit a new gasket (might as well adjust the tappets and polish the rocker cover while it's off!),

Liberal use of an anti seize compound during maintenance works wonders the next time you need to take something apart. If you have long bolts poking through nuts; i.e. seat fastenings through the floor, protect them with Copaslip then slide a small length of a suitable sized rubber fuel pipe etc over them. As well as Copaslip I make extensive use of WaxOil and Lanoguard grease (a product made from Lanolin which is used extensively in the marine industry).

Rattles and squeaks are not only annoying they also cause wear. With some old cars it seems to be a design feature built in by the manufacturer but most can be cured. If you have aluminium etc. parts in contact; e.g. a locker lid and bonnet halves then the use of 'anti-fret-tape' works wonders. When I first used Emma she was ok going forwards but the bonnet vibrated in reverse; suitably applied tape cured the problem. A similar problem existed at two of the Dzus fastener location points for the bonnet a thin piece of suitably applied self adhesive rubber tape took up the slack and made the fastenings more secure.

Drive with mechanical sympathy! Sometimes adapting your driving style can make a huge difference and prevent a minor problem from getting worse until you have time to deal with it; for example a stiff clutch will benefit from double de-clutching and transmission wear will benefit greatly from a more gentle clutch release. If you watch a car race you would think that direction and speed changes are sudden and jerky but in most instances that is far from the case. In 1993 I paid for the privilege of spending an hour as a passenger with a top notch racing driver at a well known race track; the main impression I came away with was how incredibly smooth the whole process was. After leaving I was determined to smooth out my own driving! Following that driving experience I used to travel with a bottle of water standing in the passenger footwell and tried to drive at my normal speed without tipping the bottle over. After a lot of practice the bottle only tipped on rare occasions.

Summary:
For a reasonable outlay and a bit of labour your car will be much more reliable! Of course it's knocking on a bit and is no longer a spring chicken; it might rattle and bang a bit and produce other mechanical noises but that in itself doesn't necessarily stop it being reliable.

To keep it reliable in the future it needs two main things; first ongoing regular maintenance and second regular use, so don't forget to drive it!

Note.
I know from my time as a young army mechanic that a lack of use is a magnet for deterioration. I try to drive my in-use vehicles and motor bikes for at least 10 miles every fifteen days (twice a month). Fuel is expensive and I try and combine such use with a shopping trip. If I have a vehicle that is not in use for a long time I remove the plugs and squirt in plenty of WD40, whilst many people will tell you it's no good as a lubricant I personally think it is. For army vehicles in short to medium term storage we used to over-inflate the tyres and roll them forward a quarter of a wheel revolution every month; after 4 months we rolled them back again a quarter of a turn; this keeps a thin film of oil over the differential gears and grease over the wheel bearings. Mere mortals like us can put the car on blocks or axle stands and rotate the wheels by hand. Keeping the weight off the tyres is also a good move. I have known people who keep an old set of wheels and tyres which they fit just for winter storage. For the same reason I always store motorbikes on the centre stand to keep the majority of the weight off the tyres.

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