



## On The Road Again - More Economical Motoring

It goes without saying that motoring costs, but all too often we end up paying far more than necessary. At the end of the article, I'll give you a simple weekly routine to follow which will help reduce on-road expenses, but first I'd like to deal with the initial purchase of the vehicle. I'm not going into buying new because it is usually low-risk, at least while the vehicle is under warranty. This article is mainly for those who can't afford the new-car option and have to go with second-hand. Although I will be concentrating on vehicles with petrol engines, many of the tips and checks will still apply, whatever the fuel-type.

Whether purchasing from a dealer or a private source, buyer beware! Nine times out of ten you will be taking over someone else's problems. Your focus should be on discovering those problems and deciding if you are being offered a bargain or a lemon. Make, model and type will vary with the individual and their lifestyle. Also, colour and trimmings probably feature on the wish-to-have list. Whatever your fancy and affordability, buying a vehicle which is in good order and is safe to drive should be the primary concern. Here are a few suggestions to steer you in the right direction and away from making a very expensive mistake at the outset.

### An Expert Opinion

The best bet is to have the intended purchase checked out by your motoring organisation or a trustworthy mechanic before any money changes hands. Just bear in mind that even they can't predict all mechanical failures waiting in the wings to hit your pocket, but they should be able to give you a fair idea if you are getting what you are paying for. Initially, though, you will have to pick the best of the bunch yourself, and you don't need to be an expert to spot the ones to reject. If you know absolutely nothing about cars, take someone with you who does. Failing that, have a read through this, then ask your mechanic to familiarise you with anything you are unclear on.

### How Does it Look?

Appearance matters, perhaps more than you realise. A vehicle which has been well cared-for on the outside is more likely to have been looked after mechanically and any necessary repairs made sooner rather than later. Careful owners will have their car's history to hand and most will be able to show you the service log book and maybe invoices relating to any repairs and replacements. Even if no paperwork is available, the vehicle can tell some of its own story. Take a good look at the paint, the bodywork in general and the condition of the interior which will often testify to the way the car has been driven and the care it has received. If the seats have covers, lift them up and check out the state of what's beneath. If you do decide to replace the covers at a later date, or fit new ones to hide tatty upholstery, remember that airbags won't work if restricted by material of any kind.

### Who's been driving it?

The classic is the little old lady who only ever used it to go to church on Sundays. Her mileage might be exceptionally low, but imagine the wear on an engine which has never reached normal operating temperature during its entire life. You've got to consider these factors. The seller won't always tell you the whole truth, so you have to employ other means to discover it. Even a casual inspection can reveal the kind of driver who has been behind the wheel. Wear on the driver's-side window sill is an indication that it has been used as an arm-rest by a pretty laid-back owner. Cigarette burns around the dash area and on seats and carpets don't speak well either. A well-worn brake pedal rubber - or a brand new one - could mean a speed merchant has been heavy on both accelerator and brakes. Use your imagination and you'll probably find a few more signs that can be attributed to careless driving habits. Does it matter? The only way to find out for sure is to buy it - then you'll know!

### **Is it Weatherproof?**

Water leaks can lead to other problems. Check for traces under mats, around doors and especially in the trunk. Evidence is pretty obvious during the wet season, so when it's dry you'll need to look for rust and staining. Feel rubber seals lining doors and windows - they should be firm yet pliable, certainly not brittle and starting to crack. The same applies to the rubber seats of non-opening windows such as quarter-lights and rear screens. Pay particular attention to the windscreen seals, especially inside. Even minor leaks will show up somehow, often as small mud deposits where water has entered and puddled. While you were looking under the mats you may have come across the odd bead of glass, quite likely from a shattered windscreen which has been replaced. If the job was done properly, the screen will be watertight.

### **Visibility**

Good visibility is a must. Windscreens need to be clear and unmarked. Small stone chips can lead to cracks. Score marks from damaged wipers impair vision, as does pitting from dust and sand. Even if this isn't to the point of being illegal, it can prove dangerous in certain circumstances such as when bright sunlight hits the screen directly. Needless to say, the wipers should work properly and the blades need to be in good condition. The operation of screen washers should also be checked. Any window-tinting film should be unmarked and not showing signs of bubbles.

### **Under the Hood**

Although the gadgetry under the hood remains a mystery to many, there are still a number of visual checks that anyone can perform. Note if the engine seems to have been recently cleaned - it could have been done to remove oil leaks. Depending on the severity of the leaks, you may still be able to locate the source of these by getting your hands dirty - bring a rag or two with you. If you can feel heat from the engine, it was running not so long ago. Maybe the seller warmed it up so that it started okay when you arrived - how about when it's cold? A warning before you stick your hands in - some parts may be hot; and be absolutely certain no-one else is going to start the car without your knowledge! Definitely, don't let one of the kids sit in the car for a play drive - it could cost you some fingers! If you are wearing a wrist watch with a metal strap, take it off - you'll get more than a mild shock if it shorts out the electrics. Test all rubber hoses you can get at for soft spots, visible cracking and any traces of leakage, especially where they are clamped. The fan will be next to the radiator which it helps to cool. Using the blades, try rocking it gently side to side - unless the bearings are worn, there should be little or no movement. Belts behind the fan should be checked for fraying and correct tension - there should be about 3/4 inch (20mm) play on the longest sides: too much and they could be slipping; too tight and they will be putting a strain on the bearings behind the pulleys. Next, have a general feel around, between and under to see if your fingers pick up oil traces.

### **The Cooling System**

The cooling system is frequently a forgotten essential - check it out. To start with, you need just look. Modern cars are fitted with expansion tanks. These are usually plastic containers connected to the radiator overflow by a rubber pipe. Liquid in them ought to be no lower than the minimum mark on the side of the container, and it should be clean. Colouring - often pink or green - is coolant rather than plain water and is a good sign. If the plastic of the tank is impossible to see through because of heavy staining, especially the brown kind, there have been problems at some time in the past. Maybe they've been fixed, maybe not. You really need to have a look in the actual radiator. This is pressurised, so only remove the cap when it is cold otherwise you'll scald yourself. The cap may be a bit stiff to unscrew. That's okay as long as it's in good condition. Too loose means it has not been doing its job and will need replacing. There should be no signs of rust in the coolant and the level should be up to the neck, not close to or below the first layer of the internal parts. Evidence of rust and foam on the rubber seal of the cap is a bit of a worry.

### **Mechanical**

The working parts of the engine and transmission are all out of sight, but there are few checks you can still make from the outside. The oil filler cap will be somewhere on top of the engine, usually near the front. Unscrew this and take a look at the underside. A milky foam deposit often indicates that water is getting into the oil and will need serious money to fix. Withdraw the engine

dipstick. The oil should be up to the maximum mark and be clean - black is bad. Automatic transmissions also have a dipstick. Oil on this is usually red and very fine. Wipe a finger across the end of the stick and look at it - dark discolouration means the transmission hasn't been serviced in a while and traces of metal filings is a sign of wear. If the car has power steering, there will be a filler cap on top of the box. Unscrew this and you will find a short plastic dipstick attached. The oil is usually the same as the auto transmission lubricant. It should be clean and up to the appropriate mark, depending whether the engine is hot or cold.

### **See How it Starts and Idles**

When you've done this, switch on all of the lights and start the car. It should turn over and start without hesitation, neither should the lights dim appreciably - either or both of these could mean more expense very soon. Now, switch off the lights and let the engine run for a bit - you can go through some other checks as it is idling. Listen to it ticking over - the sound should be relatively smooth. Any coughing or hiccups are an indication that something needs attention. Don't be fooled into believing that it just needs a new set of plugs! Whistling from the engine area could be an air leak, or a belt in need of replacement, maybe the water-pump is on its way out. High-speed metallic grating, even if only faint, may point to trouble of a more serious nature. Before you switch off, get down low to have a look at the exhaust. It runs underneath from front to back and shouldn't be so loose that it rattles. After a few seconds, if you can smell fumes, there's a leak somewhere which is not only obnoxious, but also deadly, especially if it makes its way inside the car. Exhaust gases are expelled via the tail-pipe, either at the rear of the vehicle, or to the side. Once the engine is warm, there should be little or no visible steam or smoke. If there is, there's trouble brewing - black is usually burnt fuel, whereas blue means it's burning oil. Not good, either of them! Now switch off and see whether any leaks have appeared. If not, so far so good.

### **The Braking System**

The operation of the brakes will show up when you road-test the vehicle. Before you do, however, it is a good idea to see if there are any likely problems. Sit in the driver's seat and press your foot down on the brake pedal. There should be some play before you feel resistance, but not so much that the pedal almost touches the floor. Keep up the pressure for a few seconds. Your foot should remain in the same position - if it sinks gradually, there could be air in the system and it needs fixing. Try the handbrake - like the foot-brake, there will be some resistance and you should be able to engage and disengage it easily. Now it's time to grub around on the floor again. Run your fingers up the metal arm attached to the brake pedal (you can do the same with the clutch pedal if the car's a manual) to see if there is any trace of fluid where it disappears into the bodywork. If there is, this will most likely be from the master cylinder which is leaking. You'll find the reservoir under the hood attached to the firewall closest to the driver. It is usually translucent so that levels can be checked visually. If the fluid is down, again look for traces of leaking where the cylinder is attached to the body. Brake and clutch fluids aren't subject to evaporation, so if levels are below the marks, there are more than likely leaks somewhere in the system. Brake fluid is an excellent paint-stripper so there will be evidence of leakage, even if the engine has been cleaned. It's also a good idea to take off the cap and view the state of the fluid which, needless to say, should be clean. Get down on hands and knees and look at the back of each wheel. Fluid leaks from the wheel cylinders should be obvious, usually as dark staining in the accumulated dust. Like the engine, if the wheels look as if they've just been cleaned, you should be wondering why.

### **The Electrics**

This is the computer age and cars have their fair share of electronic devices which you can do nothing but trust and hope for the best. The basic electrics, however, haven't changed much. Driving lights, brake lights, indicators, horn, etc can easily be checked with the help of a friend. If you don't have one with you, get the seller to operate the lights while you make sure they are all working properly. Inspect the battery which you will usually find under the hood - it should be properly secured. Some have covers which are relatively easy to remove. If it isn't the sealed type, protect your hand with a rag (acid burns!) and remove the filler caps. You should only be able to see liquid, not the plates it covers. Have a look at the terminals to see that the clamps are on tight and are not corroded.

## **Wheels and Tyres**

Tyres are your only contact with the road and need to be in good condition. Any wear on the tread indicates problems which may not have been remedied. Inspect all of the rims for damage. Scoring and dents around rims and on hub-caps are signs that they have contacted something hard, maybe a kerb. This can buckle the wheel and throw the alignment out. When you go round the tyres - don't forget the spare. Tread depth is important. If too worn, you will be up for new tyres before you know it and you can add the cost to the price you are paying for the car. Signs to look for on the tyres are as follows:

- Wear around the centre of the tread means the pressure has been too high.
- Wear on both outside and inside is the reverse - air pressure too low.
- Wear in regular patches like coin spots around the circumference of the tread points to faulty shock-absorbers. If you notice something like this, pay special attention during the test-drive to the way the vehicle recovers after running over bumps - if the hood seems to float as it rises and falls, the shockers will most likely need replacing.
- Scrubbing on only one side indicates that the wheel alignment needs adjustment. This is a problem which only affects the front tyres, but remember that it's easy enough for the seller to swap front to back. The highest cause of tyre wear is down to camber mis-alignment – that's when the wheels are no longer sitting at right-angles to the road surface, causing greater pressure and friction on one side of the tread. To check this properly, you will have to get down and dirty. Lay on the ground and look carefully at the treads, in particular outside and inside. If there is any wear at all – it may only be a few centimetres – there could be an alignment problem that hasn't been fixed. Get this attended to straight away, either as a condition of sale, or at your own expense after you've bought the car. If the job is done properly, steering components and wheel bearings will also be checked, which means better, safer driving for you.
- Beware of recaps (retreads). These are recycled cases that have had new treads moulded on. They are easily recognisable from the line where the cap joins the original case on the wall of the tyre. Second-rate substitutes, they should only ever be fitted with a tube, and must not under any circumstances be driven at high speed. Whenever you replace your tyres, always go for new - it's safer and cheaper in the long run. You only get what you pay for and quality will win out every time.
- If you have a particular make and model of car in mind to buy, it's a good idea to check the manufacturer's recommended type and size before you go car-hunting. The originals on the car you are considering may have been replaced, and if they are not to the correct specifications, you could face problems. If the profile is wrong – that's the distance from road surface to the lowest edge of the rim – the speedometer won't give an accurate reading, which could cost you a speeding fine. And although wide, mag wheels, raised suspension and flared guards might look cool, there's a possibility the custom make-over might be illegal.

## **The Test Drive**

The test drive will help you make your final decision. You will be focussing on road-handling and overall performance. Even before you leave the driveway, you can check a few more things. Adjust your seat to your personal driving position; also the same with the steering wheel if the facility is available. Try turning the steering wheel gently a few inches left and right - there should be no excessive play. Keep an eye on the dash warning lights when you start up. Most of them should go out after a few seconds once the engine is running. The temperature gauge will probably be up to near half-way with a warm engine. Keep an eye on it while driving. Unless the day is an exceptionally hot one, the needle should stay round the mid-point. If it goes too high, there is a problem with the cooling system. Before you drive off, make sure the handbrake is on and try creeping forward and back. If the vehicle moves at all, it should only be in reverse. One last check - make sure you have enough fuel: sellers often keep it low so that they don't give too much away.

While driving, gear changes should be smooth and quiet. With manual transmissions, note how far down the clutch pedal must travel to effect a good gear change. If it's too close to the floor, you may be up for a new clutch. And if the gears are noisy, that's another problem you don't

really need. With automatics you should barely feel the gear changes. Find a stretch of open road and try the kick-down. Another thing to watch is the speedo, for obvious reasons and to make sure it operates without sticking. You can also try out the air conditioner and the vents to make sure they are working properly.

When you are up to a reasonable road speed, make sure you don't have a tail-gater, then apply the foot brake to see if there is any pull to left or right which is a sign of problems. If you feel shuddering when braking, this is most likely high spots on the discs. They will have to be machined or replaced – don't let it be at your expense! Needless to say, you should find a quiet street where you can try an emergency stop. You also need to drive up a hill to see how the car copes. When you can safely get up a bit of speed on a straight road, see if the vehicle holds its line when not turning the steering wheel. Just remember that camber (the way the road slopes off to the side) will affect this, so find a stretch where the tilt is not too accentuated. If you can feel vibration beneath your hands which increases the faster you go, that probably means one or both of the front wheels are out of balance. Maybe they weren't balanced at all because they were originally on the back! If there is a cruise control you might want to try engaging and disengaging this, but make sure the road conditions are suitable. At some point, ask yourself: how is it so far? Would you be comfortable driving it every day?

### **One Last Thing**

When you get back, leave the car running and have a final look for any oil leaks that may have started up. If you've had the air conditioner running, there will be some water dripping from the unit underneath - this is quite natural and nothing to worry about. Now switch off, leave it for a minute or so, then try starting the engine again while it is hot. By this time, you will probably have decided whether it is a good buy or not. If you are still in doubt, maybe you should just walk away - there are plenty more out there.

### **Weekly Check**

For the sake of your safety, and your wallet, take a few minutes each week to make sure everything on your vehicle is as it should be.

**TYRES:** keep pressures at the recommended levels. If the car is left standing for extended periods, check and inflate where necessary before you drive, or as soon after as you can. Watch the treads for wear.

**WIPERS and SCREEN:** use a cleaner specifically made for removing bug-squash and road scum on both glass and wiper blades. If you like a one-step wash-and-wax, go over with screen cleaner before the wax dries and sets hard - it's almost impossible to remove once it has and it will impair vision.

**UNDER the HOOD:** check levels in the radiator and expansion tank, power-steering, brake and clutch fluid (if manual). Also check engine oil level and transmission (if automatic). Refer to the manufacturer's instructions because with some models the engine needs to be warm. Periodically, check belts for wear and hoses for leaks.

**ELECTRICS:** keep the battery terminals clean and tight, and top up the cells to the required level with distilled water when necessary. Get someone to operate the lights while you check that they are working properly.

**SERVICING and REPAIRS:** these are a necessary expense if you want to keep your motoring economical and your car in good condition. Putting them off until later is to invite major problems down the track.

There's not much more I can tell you except to say that your car will be no better than the care and attention it receives. Treat yours well and it is less likely to let you down.

We extend our grateful thanks for help with this article to Chris at Tyrepower Harvey, Western Australia – International Tyrepower Dealer of the Year 2012.

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