

## Buying an Austin Healey

*This does not constitute a complete list of sources but is intended to be a starting point for people new to Healeys / British Cars.*

### **A. USE THE INTERNET!!!**

- Probably the most powerful tool for finding a car. Many Healey and British car web sites have want ads and club listings.
- Classified ad sites are a good resource for finding cars.
- Most Car Magazines have sites as well. Not only can you find cars for sale, but many allow you to place "want" ads.
- You can join a Healey "mailing list" (see SOL on the "LINKS" page) that allows you to send and receive email to other members of the mailing list. Using the mailing list You can broadcast your "Want ad" to all members as well as ask technical questions.

**B. GO TO HEALEY AND BRITISH CAR EVENTS** - You will almost always find cars for sale.

**C. JOIN THE CLUBS** - Newsletters and club meetings/events are a great resource.

**D. BUY COMMERCIAL PERIODICALS** - British Car Magazine, Hemmings Motor News, Road and Track, etc. all have classified ads and event listings.

**E. Familiarize yourself with Healeys.** Buy a book that tells you about the marque and allows you to determine the condition of the car and originality. ("Resources" button on the home page)

**F. Once you've found a potential car, evaluate it carefully.** If you are not familiar with Healeys, and don't know what constitutes a "good" car, use the above resources to find out. In general, consider the following:

- All Healeys RUST. Body/frame condition is all important, and can cost a bundle to fix. Unfortunately, it is very easy to hide these problems from a potential buyer. Be careful to distinguish between mere cosmetics and real structural problems. Look for rust problems in these areas:
  - Rear of front wheel wells, front of rear wheel wells. (Big Healey)
  - Rocker panels (Big Healey and Sprite)
  - Bottoms of front and rear fenders (Big Healey and Sprite)
  - Frame extensions (outriggers) perpendicular to main frame rails located beneath cockpit. (Big Healey)
  - Forward attaching point of leaf springs (Sprite)
  - Narrow panel between front edge of door opening and rear edge of front fender. (Sprite)

- If undercoating has been applied to the underside and/or wheel wells, be suspicious. Undercoating was not applied to these cars at the factory, and is now used to hide problems.
- Mechanical condition is secondary. Healeys will run great until they rust in half. Mechanicals are the easiest thing to fix.
- Remember, restorations can be expensive. If a Big Healey is really rusty - and that's often the case - the restoration cost can easily get to 2x or 3x the value of the car..
- If you are still uncertain about the cars condition, have a reputable restorer or mechanic evaluate the car

# Essential Maintenance for the Big Healey

Presented by Bruce Phillips  
Healey Surgeons  
Takoma Park, Md



# This highlights the maintenance package that I provide to Healey Owners

- Change Engine Oil and Filter
  - Fairly straightforward, but take care to install the filter end plate correctly. Clean out any gunk in the housing.
  - Sump oil drain plug 1 & 1/8 “ size.
  - Quantity 7.5 quarts, Valvoline VR-1 Racing oil SAE 20W/50 suggested. It has a high Zinc content
  - Check for correct oil pressure on engine restart and use the dipstick to check the level *after* you run the engine.



# Change Transmission Oil, clean filter and magnets



- There is a separate drain for the gearbox and for the overdrive.
- For early cars 1&3/4" square drive, 3000 models 7/16" square.
- The O/D filter is inside here, so is the magnet.

# Change Differential Oil



- A small oil transfer pump like this is handy.
- The diff is full when a little oil leaks out, or you can feel it when you put your finger in the hole.
- Use 80W/90 EP Gear Oil

# Check Steering Box, top off as needed



- Unscrew the big plug on top of the box and refill with SAE 85W/140 gear oil
- Plug size  $\frac{3}{4}$ "
- Do not overfill

# Check Steering Idler, top off as necessary

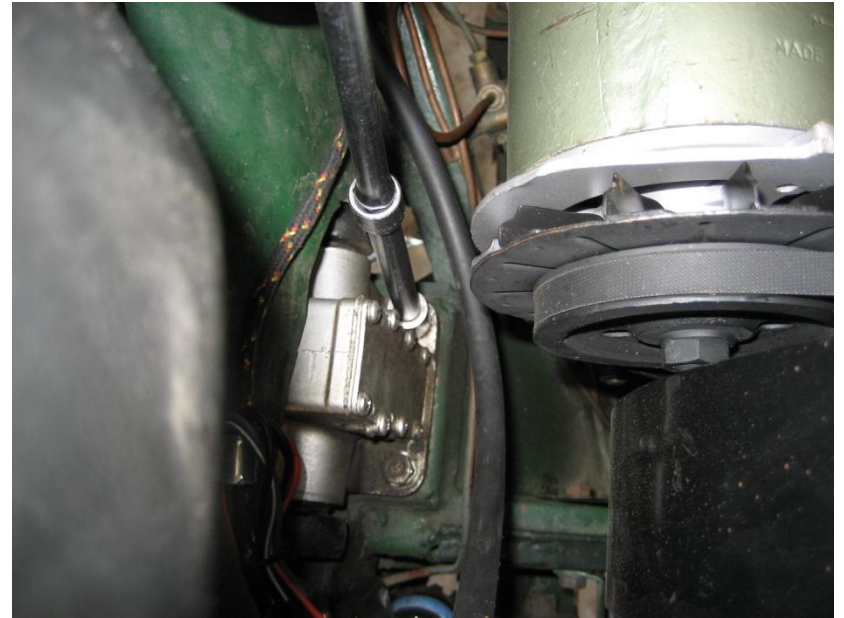


- Remove this plug and check for oil SAE 85W/140.
- Top off as required, do not overfill.

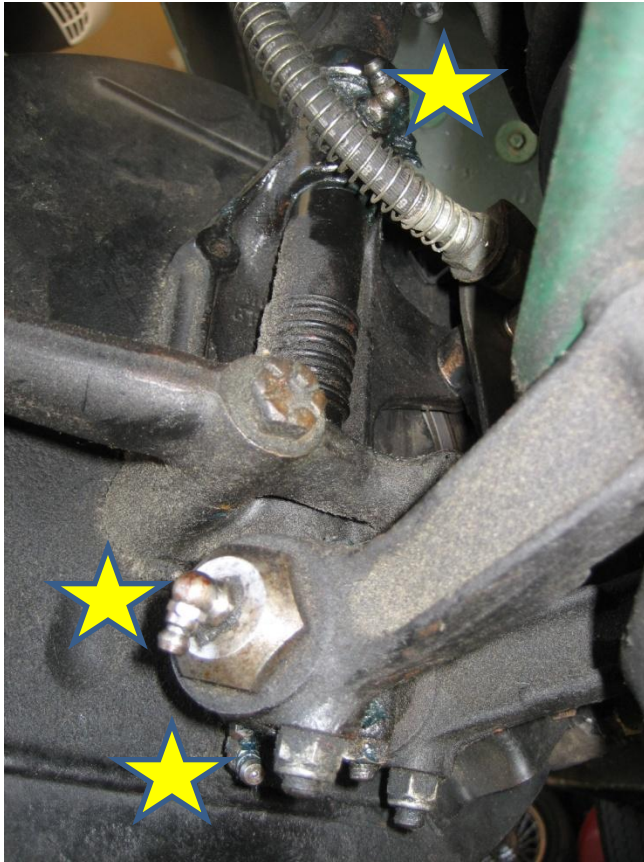


# Tighten Front and Rear Shock mounting bolts

- These bolts shown hold the front of your Healey suspension together and they can come loose.



# Grease Front Suspension King Pins, and lower swivels



- There are many grease points on each side, this BJ8 has 3 visible but there may be more !
- Use the grease gun until new grease oozes out around the fittings. This will flush the old grease out.

# Check Center and Side Rod ball joints for excessive relative movement

- If they have grease zerks – Grease em !



*Healey Surgeons*

(301) 270-8811 Fax (301) 357-9478

# Change Brake Fluid - if old

- Brake Fluid Level should reach the top of the inner can.
- Outer portion feeds the brakes, inner the clutch.
- If fluid is low, look for leaks and make necessary repairs.
- Examine the flexible brake & clutch lines. Consider replacing them if > 10 years old.
- Finally Stomp on the brakes, hold the pressure for 10 seconds and then look for leaks.



View of top of  
Hydraulic reservoir

# Check the brake pads

- If they are worn, replace them !



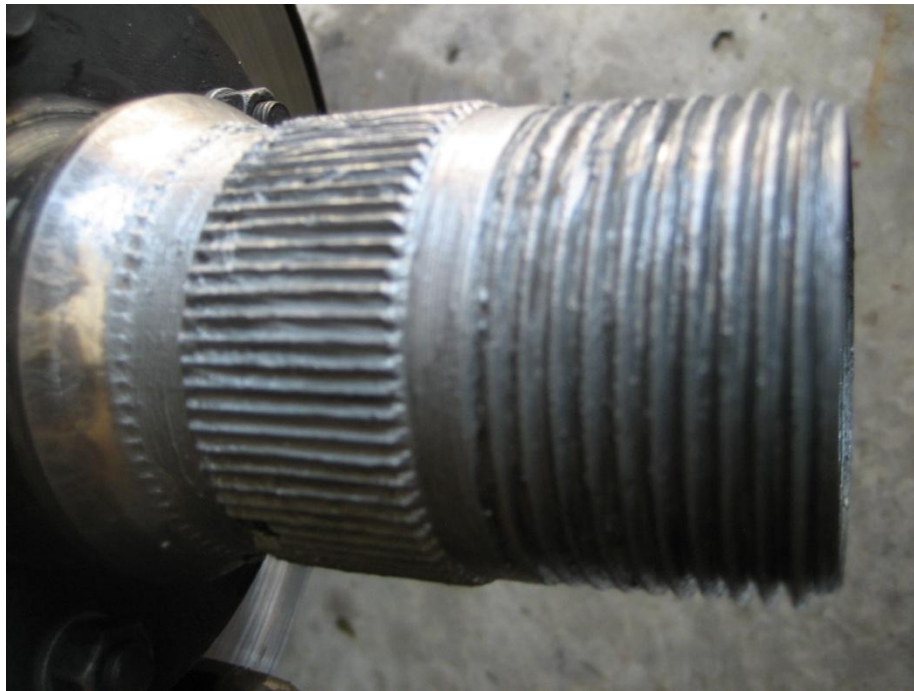
# Front wheels and King Pins

- Spin the front wheels and listen for noisy bearings.
- Replace any noisy bearings.
- Grab the bottom of the front wheel and try to move it in and out. **IF** there is any movement it could be either King Pins or wheel bearings.
- Pump grease into the bottom King Pin fitting, if the movement persists, it means a wheel bearing problem
  - Worn out or
  - Not shimmed properly.



# Remove all 4 wheels, clean splines, hub wheel threads & regrease

- After you clean them, examine the splines for wear . The splines should not have sharp edges.



# Check coolant

- Make sure the level is within an inch of the bottom of the fill neck.
- Check the freeze point, -34F is the freeze point of 50/50 coolant/water. Higher freeze point than that and you have more water than coolant.
- Check the hoses and fan belt, replace if any cracks/bulges are visible.
- Fan belt tension should allow ½ inch movement on the long side. Too tight and you will kill the generator and water pump bearings
- Check the radiator cap or better still replace it.
- When did you last change the coolant ? If over 2 years ago, drain it (2 drain taps, radiator and engine block), flush with water and fill with fresh coolant. The rust and corrosion inhibitors lose their effectiveness over time.





# Points to Lubricate

- Door Hinges
- Door Strikers
- Throttle Linkages
- Handbrake Linkages
- Bonnet Catch
- Carburettor Dash Pots – engine oil will do
- I use ATF

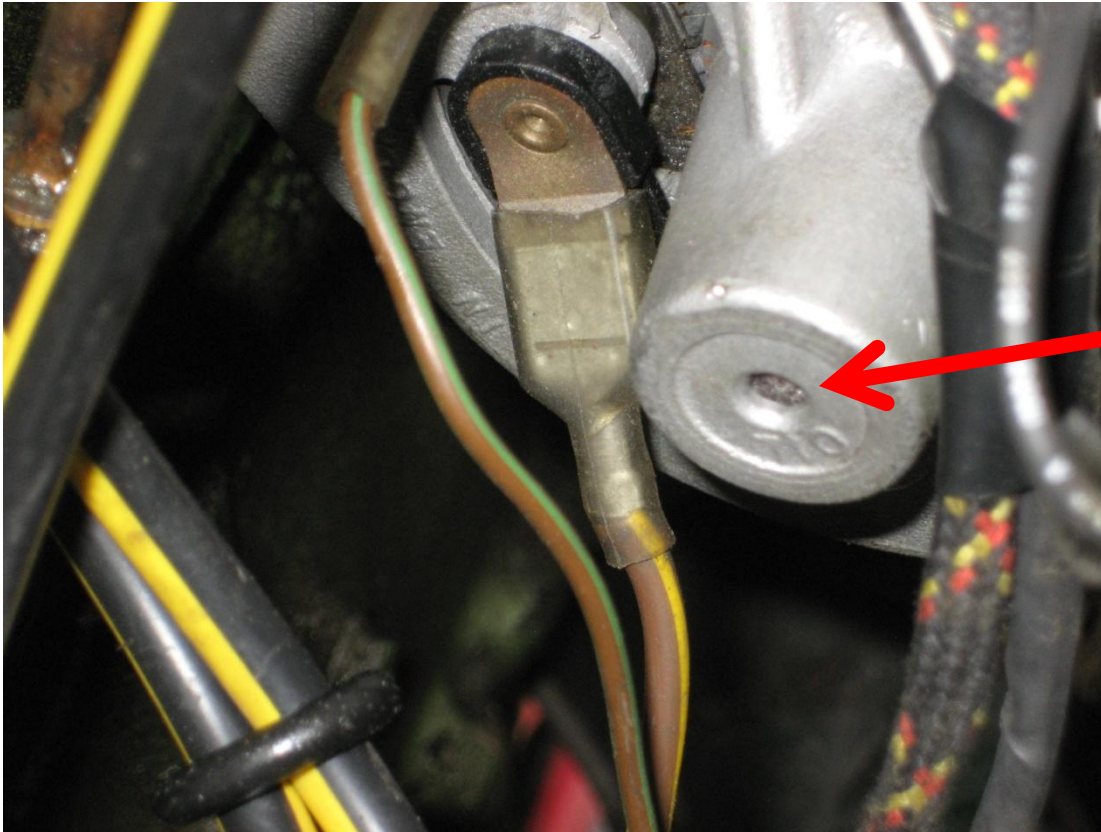


# Points to Grease

- All 6 or 12 Grease fittings on front suspension (depends on model)
- Drive Shaft U Joints - front and rear
- Handbrake Pivot
- Handbrake Cable
- Rear Spring Shackle – if fitted
- Generator Bearing Wick (oil



# Generator rear bearing



- Add a few drops of 30 weight non detergent oil in here.

# Check Battery

- If not a sealed unit, check for correct electrolyte level. Add distilled water as needed.
- Check the battery terminals, if corrosion is present, clean them.
- Make sure the battery hold down clamps are tight.



# Clean out the area behind the rear wheels



- Flush this out with a hose.
- Dirt can accumulate here and start rust.

# Clean out the area *In front* of the rear wheels



- Flush this out with a hose.
- Dirt can accumulate here and start rust.
- This is a very common area for rusting.

# Clean out the area *behind the front wheels*



- Flush this out with a hose.
- Dirt can accumulate here and start rust.
-

Any Questions ?



*Healey Surgeons*

(301) 270-8811 Fax (301) 357-9478



## What's Your Under Hood I.Q.?

*Courtesy of the Champion Spark Plug Company*

To find out your knowledge of engine basics, try the little quiz outlined below, developed by Champion Spark Plug Company.

1. To correct crossfire
  - (a) install cooler-range spark plugs
  - (b) separate spark plug cables as much as possible
  - (c) make sure all spark plug cables are neatly taped together
2. A properly working dashpot
  - (a) provides a richer fuel/air mixture for easier starting
  - (b) prevents the throttle from "slamming" shut when the driver takes his foot off the accelerator
  - (c) prevents overheating during long periods of idling
3. The need for cooler-range spark plugs is indicated
  - (a) by carbon deposits on the firing end
  - (b) by a white or gray, and blistered insulator tip
  - (c) by a sudden increase in fuel consumption
4. Resistor spark plugs are used to
  - (a) prevent oil fouling
  - (b) reduce radio and television interference
  - (c) make a hotter spark
5. Overly wide spark plug gaps
  - (a) reduce voltage available
  - (b) increase voltage required
  - (c) increase voltage available
6. Too wide a rotor gap
  - (a) decreases voltage required
  - (b) increases voltage required
  - (c) increases voltage available
7. Reversed coil polarity is evident
  - (a) when there is excessive corrosion on the battery posts
  - (b) when spark plug ground electrodes are "dished"
  - (c) when fuses burn out frequently
8. When engine timing is overadvanced
  - (a) fuel economy is improved
  - (b) combustion chamber temperature is increased
  - (c) primary voltage is reduced
9. As the distributor cam wears through friction
  - (a) dwell angle is reduced
  - (b) dwell angle is increased
  - (c) dwell angle is unaffected
10. Damage to the voltage regulator and to the rectifiers in the alternator can be traced to
  - (a) a short circuit in the ignition wiring
  - (b) an improperly connected battery (reversed polarity)
  - (c) a defective ballast resistor

Answers: (b) in all cases



## When Your Car Won't Start

By Chuck Breckenridge, Cascade AHC (Washington State)

An Austin-Healey engine (or any engine with points and carburetion) is a fairly simple device. It will run when you have spark, fuel, timing and compression. And here is the point I want to make in this article: Adequacy! The four constituents must fall within certain parameters.

1. Spark — It should be bright blue at the spark plug. A yellow spark may not fire under compression.

2. Fuel — It must be combustible and be able to get to the cylinders. Sometimes the wrong substance is used as fuel, i.e., water, kerosene, and diesel fuel. Also, just because fuel reaches the carb, it may not be going through it because of plugged orifices or air leaks.

3. Timing — The spark must reach the cylinder when the piston is close to top dead center (TDC) on the compression stroke.

4. Compression — Needs a minimum about 90 lbs. to fire.

I just bought a 1963 3000 and I thought I would try starting it after I realized it had been over twenty years since it had been started last. I put in a good battery, checked for oil in the engine and tried turning it over by hand. It turned, albeit a little slowly. I have found in the past that if it will turn over it will most likely run.

I then put in new spark plugs, points and condenser. While the plugs were out I sprayed oil into the cylinders and turned the engine over with the starter until it was turning at a good speed.

With the plugs back in I tried starting the engine — nothing! Since I didn't hear the fuel pump clicking, I checked its power supply. Good! I removed the fuel line to observe the flow. None. I replaced the pump with a new SU and it clicked at full speed. I put the lines on and it started clicking too fast. In other words, no fuel was being drawn up through the pump. I pulled off the line from the pump to the carb — no fuel was flowing. I checked to see if the tank connections were tight. If it sucks air into the tank at the pickup points, it won't suck fuel. Both were tight and the rapid clicking prevailed. I pulled the tank line

to see if it had a hole in it — no holes. I then put the line on the pump and the other end in a can of gas. Now the pump worked. I put it back on and turned the pump on — still sucking air!

Then I saw the error. When I had the line placed in the can of fuel, I had changed the angle at which it fits into the pump, thus causing a good seal. The new SU pumps are built differently than the old ones and both lines hit the pump body, not allowing a good seal.

I cut the tank line in two and added a fuel filter and tried it again. It pumped fine. Pulling the line off the carbs, I verified this by filling up a small container with gas very quickly.

I tried starting the engine again. Not even a little spark from the plugs. Pulling off a spark plug wire and putting it near the head, I turned over the engine with the starter, causing a nice blue spark to jump 1/4 inch.

Now assuming I had adequate spark and adequate fuel, I pulled off #1 plug to check the timing.

Sticking my finger in the spark plug hole, I turned the engine until the piston was coming up on the compression stroke. My finger was pushed out as opposed to being sucked in. (*Editor's Note: Do not use the starter switch to turn the engine over while your finger is on the hole, not in it. And never use your little finger.*) I then placed a screwdriver into the piston hole and turned the engine slowly by hand, until I had the piston at TDC.

Removing the distributor cap showed the rotor pointing to #6, not #1. Someone had put the distributor drive gear in wrong. I pulled the distributor and turned the gear 180°, so the rotor was now pointing toward the number one spark plug wire outlet in the distributor cap.

I tried starting it again and away it went. When the smoke cloud cleared and the oil I had squirted in the cylinders was burned off, it was running nicely. All of a sudden it quit! And it would not start again.

I quickly began checking the basic four to see if they were within parameters. The

spark still jumped a 1/4 inch and was blue. Sprayed starting fluid into the carb — no results. Pulled plug and it was wet — maybe too much fuel? Pulled all plugs and cleaned. While I was there I checked the compression — 120 lbs. plus per hole. All is good. Put the plugs back in — nothing!

Rechecked timing by pulling #1 plug and insuring TDC on compression stroke again, then checked rotor pointing to #1 wire. Spot on! Setting at the 2 o'clock position.

Tried to start again. Not even a cough.

I had insured I had all four basics in the qualified amounts but it wouldn't run. What would you do? Check everything again? Ask a friend? Buy a Porsche?

I decided to go inside the house and think it out. Logic works well in cases like this. You mechanics out there, try it some time.

I used the elimination procedure — qualify all that is right and the remainder must be that which is wrong. 1. Spark was great — not the problem. 2. Fuel via starting fluid and dry plugs — not the problem. 3. Compression — 120 plus — not the problem.

That only leaves timing, but the rotor was at the 2 o'clock position, pointing to #1 on TDC and on the compression stroke.

Then it came to me. Have you figured it out yet? The rotor was at 2 o'clock, but was it really pointing to #1 spark plug wire?

I ran out to the car to check. Sure enough, the distributor was loose (*Editor's Note: Who pulled out the distributor to change the gear position and forgot to put the clamp down tight?*) It had moved about 30°. I turned it back, tightened the bolt, and it started up immediately. Ran great.

I felt kind of foolish, but was happy to solve the problem.

Happy cranking.

*Reprinted with permission from Cascade, official magazine of the Cascade AHC*

## Some Common Austin-Healey Problems and Some of the Possible Causes. It Is Not a Complete List.

by Norman Nock

California

**Does your Healey leak oil from the rear carburetor?**

Your rocker arm's worn.

**Do you have a water leak from the overflow hose?**

Your radiator cap is the wrong depth. / Radiator cap is faulty.

**Do your feet get hot while driving?**

Hot air is leaking into the cockpit. / Tunnel is not screwed down. / Heat shields are missing. / Grommets are missing. / Heater is turned on.

**Do you get bad gas mileage?**

Carb jets are worn. / Carbs are adjusted too rich. / Mechanical advance is frozen. / Ignition timing is retarded. / Vacuum unit is leaking.

**Is there a rattle at the front of the engine?**

Crank pulley is loose. / Timing chain is worn.

**Do you smell gas in the car?**

Carb jets are leaking. / Carbs are flooding. / Sending unit is leaking.

**Is your engine temperature too high?**

Check your gauge for accuracy. / Water level is too low. / Thermostat is faulty. / Fan belt is loose. / Check ignition timing. / Check carb adjustment. / Wrong temperature thermostat.

**Is there a clunk when braking or accelerating?**

Hubs are worn. / Wheels are worn. / Wheel is loose. / Universals on drive shaft. / Rear end is worn.

**Does your steering wheel shake?**

King pins are worn. / Shocks are weak. / Shocks are loose. / Steering box needs adjustment. / Idler arm is worn. / Wheel is out of balance.

**Does your car wander when driving?**

Rear springs are loose. / Steering box

adjustment. / King pins are worn.

**Does your speedometer needle jump around?**

Speedometer cable is worn. / Angle drive is stiff.

**Is your hand brake stiff or sloppy?**

Cable is frozen. / Linkage is frozen. / Handbrake brackets are broken.

**Do you have problems getting into gear?**

Gear shift lever bush is worn. / Reverse lock-out is stuck.

**Does your engine crank slowly?**

Battery is old or flat. / Starter is faulty. / Battery terminals are dirty. / Ignition timing. / Battery switch. / Engine ground.

**Do your brakes grab?**

Oil on brake shoes.

**Do your brakes pull?**

Oil on brake shoes. / Wheel cylinders are frozen.

**Are the doors hard to open?**

Worn striker. / Door handle stiff. / Frame is weak and rusty.

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**Does your door open when driving?**

Door strikers are worn. / Frame is weak and rusty.

**Does your fuel pump run and run?**

Air leak at pump. / Bad valves in pump. / No gas in tank.

**Is your car low on one side?**

Broken or weak spring.

**Do you have low oil pressure?**

Check accuracy of gauge. / Rocker arms are worn. / Crank bearings worn.

**Does your engine stop while running?**

Fuel pump is faulty. / Blockage in fuel line.

**Is your electric tach working?**

Incorrectly grounded. / "U" shaped bracket missing.

**Does your overdrive operate slowly?**

Blockage inside unit. / Wrong oil. / Wrong adjustment.

**Did your overdrive solenoid burn and smell?**

Wrong adjustment.

**Does the overdrive work in all gears?**

Isolator switch is bypassed.

**Does the overdrive work at all?**

Solenoid adjustment incorrect. / Low on oil. / Isolator switch. / Overdrive relay. / Governor switch (on 3 speeds).

# Be Prepared — Not Embarrassed

**Norman Nock**  
**British Car Specialists**  
**Stockton, CA**

If you are taking a long tour in your Austin-Healey, it is recommended that you check your car well in advance of your departure date. Then take a shake-down drive to make sure nothing has been missed. While I was at the 1998 West Coast Meet at Kah-Nee-Ta resort, Warm Springs, OR, I made notes of Healey problems which were frequently mentioned by various members.

Listed below are the problems, followed by their probable causes:

**Fuel Pump Stops** – replace pump or rebuild using a diode

**Carbs. Flooding** – had a non-original fuel pump with too high a pressure, should be 1½ lbs. to 2½ lbs.

**Would Not Crank Just After Stopping** – battery was five years old, charge battery and make sure it comes up to full charge using a hydrometer (liquid type). If it does not pass ¾ charge and is over three years old, replace batteries.

**Carb's Flood** – dirt in float bowl, should have had a good quality fuel filter in line, don't use the small cheap type.

**Oil Leak from Gauge** – seal between pipe and gauge missing or was loose.

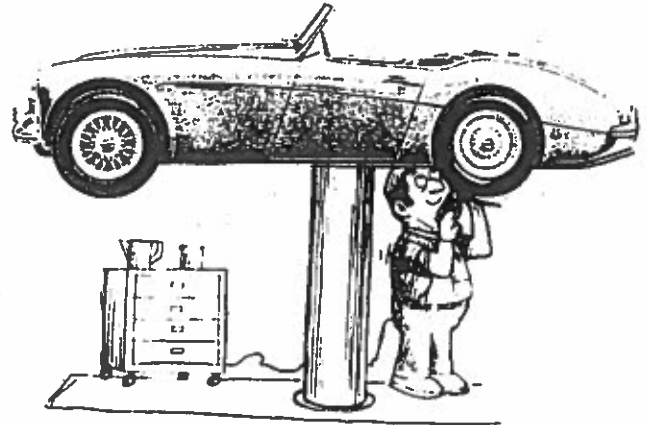
**Hit Fuel Pump To Keep It Working** – replace fuel pump or rebuild with a diode.

**Fuel Hose Leaks** – use good quality fuel hose, if old, replace them.

**Gas Line Loose At Float Bowl** – replace the fiber gaskets with only original S.U. type before you take a long trip, retighten after 200 miles. Use oil on threads to make sure you get tight.

**Wheel Bearings – Front Wheels. Noisy** – clean and pack wheel bearings. Make sure they are adjusted correctly! As per factory

**Brakes Squeak** – This can be a problem to stop, the usual fix is to unidirectionally turn rotors, replace pads, and



use a disc brake silencer product on the back of pad between metal and piston.

**Ignition Coil Faulty** – this can happen with age, always use an original Lucas coil that is listed in the Lucas catalog for your car. Carry a spare just in case.

**Wires Loose on Ignition Coil** – install a spring washer under nut, check tightness of these wires.

**Oil Leak – Valve Cover** – glue casket to valve cover using 3M #08000 following instructions on the tube exactly (“to the letter”). Do not glue gasket to head. Leave it dry.

**Starter Solenoid Clicks** – this is usually a dirty terminal at: battery, ground sw on/off, ground to engine, fields grounded in starter. Clean all terminals to bare metal.


**Emp. Goes Up to Max** – if gauge is correct, this could be anything from low coolant to a plugged up radiator.

**Oil Leak Speedo Drive** – replace seal in pick up.

**Loose Wheels** – if you have worn splines on the hubs and/or wheels, this can be found by visually inspecting all hubs and wheel splines. If they are worn, the knock-off can ratchet itself off by the rotation of the wheel.

**Low Oil Pressure** – if your idle oil pressure is lower than 20 lbs at idle with a hot engine and your gauge is correct, it should be diagnosed for its cause.

**Hot Feet in a Healey** – stop all the hot air coming into the cockpit before fitting carpets and insulating pads.

Most of these problems are covered in my tech talk book that now has 175 pages. If your book does not have this amount of pages, we have them available. See “Market Place” in this issue for details. 

## Winterizing the Healey

*Reprinted from Tidewater Tachometer, Volume, X, Issue 7*

Living in Virginia affords year-round driving for Healey fans. Still, there are others who like to batten down the proverbial hatches when the cold wind starts a-blowin'. Here's some good winterizing advice from John Gronberg on the Spridget BBS that's not too painful:

Drive the car on a good long run to thoroughly warm up the exhaust and get all the moisture out so it won't rust.

Go home and immediately change the oil. Get back in and drive to the closest gas station, put fuel stabilizer in and fill the tank. This allows the fresh oil to circulate and the fuel stabilizer mix to get all the way through the system to the carbs.

Remove the clutch and brake master cylinder caps and put a piece of plastic wrap under the cap before replacing. This slows down the absorption of moisture by the brake fluid.

Flush and fill brakes. Whenever you

happen to come close to the car, pump the brake and clutch pedals hard. Leave handbrake off.

Wash and wax. Use chrome polish or wax on chrome parts.

Remove battery. Do not place the battery directly on concrete as it will facilitate a fairly rapid discharge. Trickle charge the battery or charge periodically.

Squirt some oil in spark plug holes, turn over engine to distribute.

Check the antifreeze.

Put the car on jack stands or fill tires to max rating. Roll car a little every once in a while.

Clean and protect convertible top. You can leave the top closed but keep the tension off.

Cover with breathable car cover (if outside). Never store car completely under tarp outside – it's the fastest way to reduce a car to a pile of rust.

Of course, the best thing to do is to drive it periodically!

## Diagnosing Brake Problems

Reprinted from Regional Rumblin's, October 1996

by Dave Lapham  
South Texas AHC

Having trouble with your brakes? Here's a guide to identifying and correcting common problems.

**Excessive pedal travel:** The pedal goes too close to the floor, or even hits the floor. Pumping the brakes causes the pedal to become firmer, but the next time you stop, the process needs to be repeated. The brake shoes are possibly worn and need adjustment or replacement. You may also be low on brake fluid or have air in the brake line.

Adjusting drum brakes is straightforward. Jack up a wheel and turn the adjuster until the wheel drags on the brake shoe. Front wheels have two adjusters, one for each shoe. Press on the brake pedal and repeat the adjustment process until the wheel still drags slightly even after pushing the brake pedal. If the drag is slight, stop. The shoe will quickly wear and conform to the shape of the drum. If necessary, back the adjuster off a bit. Check the brake section of your maintenance manual for detailed instructions and pictures.

Disc brakes are self-adjusting, but check pad wear and replace the pads before the lining wears out. Follow the instructions in the manual for bleeding air out of the system. Start with the rear wheels. Tools are available which allow this task to be accomplished without assistance. It's more easily done with two people; one to operate the brake pedal, while the other works at each wheel.

**Brakes drag after the pedal is released:** The brakes work fine, but after you take your foot off of the brake pedal, one or more wheels still drag a little (or a lot). If you suspect this is going on, go find a nice quiet road. Drive the car and make a stop. Push on the pedal firmly while stopping. Drive a little farther and then coast to a stop. Feel the wheels and see if any are noticeably warmer than the others. Don't burn your-

self! A hot wheel is a sign of possible brake drag. I say possible, because it could be other things such as a bad wheel bearing. You might need to rebuild the wheel cylinder(s) or caliper(s) on the offending wheel(s), but if your flexible hoses are old, they could be the problem. Old hoses can separate internally and pinch off the flow of brake fluid. The pressure from your foot and the master cylinder will force fluid by, causing the brakes to activate. The springs on the brake shoes may not be strong enough to force the shoes back far enough to clear the drum, or the calipers may not release properly. The result is a continued rubbing, generating heat and probably causing the car to pull slightly to one side. In severe cases, the brakes may remain "locked" on, even after the brake pedal is released.

**One wheel locks up, even on gentle braking, when you first start off in the car:** Usually this affects drum brakes more than disc brakes, and it will most definitely require a rebuild of the wheel cylinder. Brake fluid is leaking out of the cylinder and onto the brake shoes. When you apply the brakes, the brake fluid "lubricates" the brake lining material, causing it to slip. As you apply the brakes harder, the shoe continues to slip against the drum until enough pressure exists to force the drum to stop. At this point the wheel locks up. You can "drag" your foot on the brake and "burn" the brake fluid off, or just making several stops will usually have the same effect. At this point the brakes work normally until you stop for a while and more fluid leaks onto the lining. Don't live with the situation and keep adding brake fluid; it won't get better. Fix it! Have an observer watch your wheels while you apply the brakes to help identify the particular wheel which is causing the problem.

**Car pulls to one side when braking:** If the car is pulling to one side and not locking up any wheels, it means those brakes are doing the job. Look at the brakes on the other side of the car. Chances are you'll find a wheel cylinder that's frozen or some other malady. Also check brake shoe adjustment on both sides of the car.

**Brakes squeal:** This is generally a disc brake malady. The usual cure is to apply a special brake "anti-squeal" goop to the back of the disc brake pads. This acts as a cushion to dampen the vibrations which cause squealing. If this doesn't work, another approach is to slightly bevel the front edges of the pads with a rasp or file.

When was the last time you changed the brake fluid in your car? Well, that's been too long! Consider getting a turkey baster and sucking out the old fluid from the brake reservoir, then putting in new fluid and running it through the system by bleeding all four wheels.

## Overdrive Problems: Another Item To Check

by Ray Gentile

Kansas City AHC

I have a 1967 BJ8 which was bought new. It now has some 50,000 miles and is in excellent condition.

Last summer, when driving with overdrive engaged, the transmission would intermittently downshift to fourth and then back to O/D with no apparent pattern—just in and out. This uncalled-for shifting had all the earmarks of a power interruption to the solenoid.

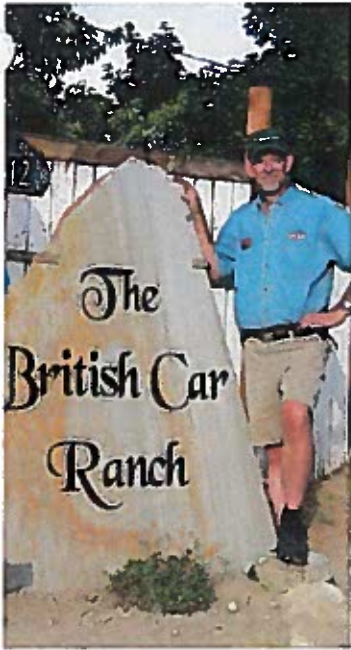
The tunnel was removed and wiring inspected. All appeared well. Power to the solenoid comes from the dashboard switch, through a relay, throttle switch, and gearbox switch to the solenoid. Wiring continuity was checked and the solenoid operated. The latter was removed, cleaned and checked and reinstalled, and the tunnel replaced. Further driving showed that the problem had not been solved.

During a late summer outing with the Kansas City club, the problem was discussed with Dave Wirken, our resident trouble shooter. He discovered that with the gear shift lever in fourth, and moving the lever back and forth, the solenoid could be heard to click on and off. With the lever in fourth, there is a certain amount of side play in the lever—approximately  $\frac{3}{4}$ " at the top. Dave correctly deduced that the problem was in the gearbox switch, the latter permitting O/D to be selected only when in third or fourth gear.

Once again, the tunnel was removed and the suspect switch examined more closely. The switch is a threaded plunger type which screws into the left rear of the gearbox with two fiber washer-shims between the switch and box. Examination of the switch showed the plunger (actuated by a block on the lower end of gear lever) was worn. Thus, with the car running, if the shift lever moved ever so slightly right or left (remember the "play" mentioned earlier), the switch contacts would make or break, cutting off power to the solenoid. The switch was reinstalled with only one washer (to take up the plunger wear) and O/D stayed selected even with moving the shift lever back and forth while in either third or fourth gear.

Since the car is almost 30 years old, I elected to buy a new switch (Victoria British part number 8-419, \$13.95) which was installed with the two fiber washers. This solved the problem. Many thanks to Dave Wirken for his expertise and help.

## Technical Sessions Presented at Rendezvous in Lake Tahoe

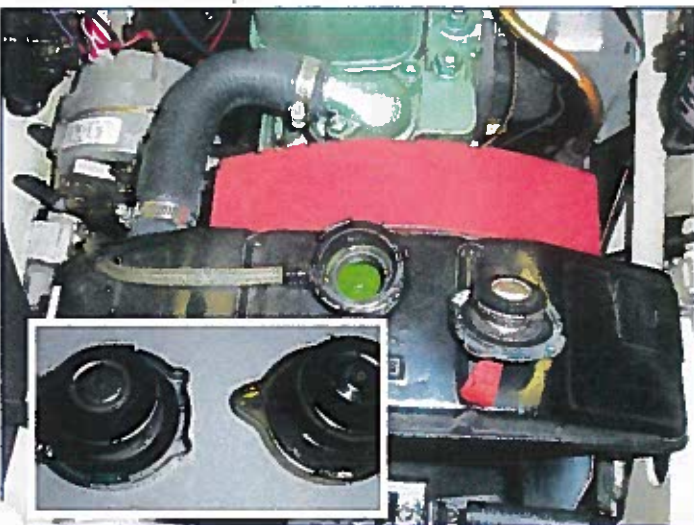


By: Steve Day

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### The first and easiest is the radiator cap.

After 47 years or more, the filler neck surface on the radiator has taken a beating, and many no longer provide a complete and level sealing surface for the cap. Add to that, that the OE style cap uses a flexible metal sealing surface and you can get leaks as the coolant heats up and expands. The solution is a modern double rubber sealed cap from STANT, part number 10206, or NAPA 703-14111. These fit all Healey radiators that take a cap on the radiator, but not those with a side catch tank as original, (Sprite). The early big Healey radiators had the same neck, but only a 4 lbs pressurized system; the newer pressure rating was boosted to 7 lbs. This double rubber cap is a 7 lbs pressure



rating, the fit is the same. You can choose if you want to up your 4lbs system to a 7lbs one. I have not seen a problem with tank expansion or

I was asked to present 3 tech sessions for the attendees at the Rendezvous 2013, hosted by the Golden Gate Austin Healey Club. One of those sessions was for ladies only, and the content and comments are strictly confidential! The one session I can share with you today, is the one I did on technical upgrades you can make to your Healey, to improve performance, safety and dependability.

The list of 18 improvements range from the very easy to the most difficult. I will cover the first 7 of them in this installment.

### Next, fuel filters.

I believe this is one we should all have. With the age of the gas tanks in the cars, the variable quality of the fuel available and the long periods of storage our cars can see, adding a filter to catch the junk makes good sense.

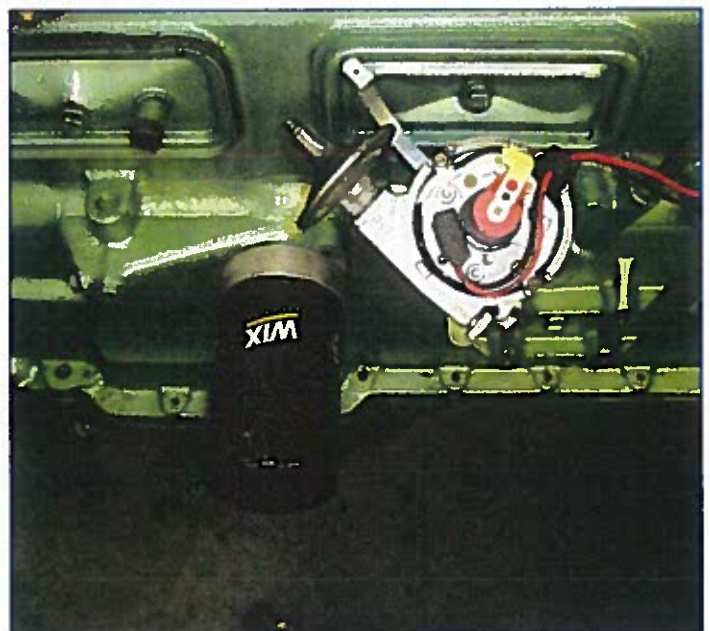


I prefer a spot you can see and change the filter easily, like the feed line to the carbs. That's also why I like the small clear fuel filters, and not to worry, if you buy a quality brand like WIX OR NAPA, the material they use is safe and durable. Make sure it doesn't touch the hot manifolds!

An alternate location would be in the rear axle bay. The SU pump doesn't require a filter ahead of it, but it may be easier to place it there. Make sure if you place it out of sight, that you change it every year or two.

### The spin on oil filter conversion

is a good one to have too. It's a bit awkward and messy to do the oil filter change on the original canister, but more than that, the quality of filtration is far superior when you use a WIX or NAPA spin on filter!



Make sure you notice the "UP" stamped on the surface of the conversion head, and put it to the up side. It can go on either way, but if you

## Healey Vibrations

by Jeff Johnk  
Minnesota AHC

A couple of winters ago I had the #28 car (100-6 race Healey) up on some jack stands doing a little garage racing. For those Healeyites unfamiliar with this activity, garage racing is extensively practiced in Minnesota to combat the dreaded hysteria of cabin fever. Cabin fever is the psychological condition experienced when the deepest, darkest, cold of the Minnesota winter can no longer be ignored. At this time, even the hardest skiers and snowmobilers are driven indoors and some sort of activity must be maintained to stave off the dreaded cabin fever. Activity can vary from immersing oneself in your employment to "fooling around" which consequently makes September a very busy month for maternity wards in Minnesota.

For me, at least in part, I turn to garage racing. As in all things, there are different levels of garage racing. Some are what I call closet garage racers. These folks will sneak out to the Healey in the cover of night or when the family is gone and slide behind the wheel, making soft engine revving and shifting noises to themselves. Should they get caught in this situation they will quickly make some lame excuse about checking to see if the heater blower still works, which of course never worked since the day the car left the factory, much less when it is 30 below. Other garage racers will put the Healey up on jack stands, drag the big screen TV and VCR out of the family room and plant it in front of the Healey. They put their race gear on, shove a race tape of Fred Crowley or Team Thicker into the VCR, start the Healey and chase the above mentioned folks down the track and through the corners (funny thing, I always lose by half a car length to them).

One day I was in the middle of a garage-racing duel when I noticed a particular nasty and harsh vibration coming from the drivetrain. The vibration in fact had always been there, but for some reason, it finally dawned on me that this vibration was not part of the normal high speed shake, rattle and roll associated with race cars.

In an effort to isolate the problem, I sneed

the drivetrain up and depressed the clutch, allowing the engine to settle to an idle while the rest of the drivetrain was still turning madly — the vibration was still there. Suspecting an out-of-balanced rear tire, I first removed one wheel and then the other, testing each time with no change. At this point, I really thought it was the drive shaft, but at the last minute, I removed the brake drums to see if there was a change. On removing the rear drums and running the drivetrain up to speed the vibration had completely disappeared. I was flabbergasted at how smooth and sweet everything ran — the out-of-balance rear brake drums had been tearing the car apart!

On examining the rear brake drums of a Healey (which by the way are quite heavy for such a light car) you will notice that there is no evidence that the factory ever balanced them. This is in contrast to most other makes and models of cars I am familiar with, whose drums most often will display welded on balancing weights. Why the factory did not balance the drums I wish I knew for the casting quality of the time could not remotely provide a consistent, uniform and balanced part. Yet Healeys were built as cars capable of 100+ mph where vibration could be most destructive.


Okay, so now I know that my drums are grossly out of balance — but what can I do to determine where and how much they are out of balance? In all my years of playing with cars, I have never seen the issue of balancing brake drums addressed. I have mountains of books and articles explaining the balancing procedure for every component of the drivetrain from the crank damper to the rear wheels, but not a one on those big chunks of rotating iron called brake drums. (Should anyone have an article or info addressing this subject, please share it with me. I am not so silly as to think I figured out the only fix). I spent a couple days calling "experts" and hatching all kinds of ideas to balance them. All the ideas and advice were \$ expensive \$. Then one night I was dreaming about Healey racing and a solution came to me.

The next morning I grabbed the brake drums and stopped by my friendly neighborhood tire store managed by my good buddy, Bud. I threw the drums on Bud's counter and

asked him to check the balance of them for me. Bud looked at me over the top of his glasses and informed me I wasn't the least funny and to check myself back into whatever institution I just escaped from. I then said, "Bud what I want you to do is to take these drums back and mount them on your tire balancing machine and tell me how much and where weight needs to be added to balance them." Bud chuckled and then said, "You can't do that Jeff." I said, "Why not Bud?" For 45 seconds Bud stood frozen, staring at me, silent lips moving with an excuse he could not come up with. Bud grabbed the drums and marched back to the tire-balancing machine with me in tow.

The drums mounted perfectly onto the machine. Bud spun the first drum and whistled as the computer showed the drum to be nearly 5 oz. out. Bud said this much imbalance would be very noticeable in a truck — unlivable in a small light car. He marked the locations and amount of weight to be added to the drum and then did the same to the second drum that was 3 oz. off.

On leaving the tire shop, I picked up some high nickel-welding rod good for welding on cast iron and then borrowed from a friend a scale capable of weighing in  $\frac{1}{10}$  oz. increments. Back at home, I cut some pieces of steel rod to the weights needed at each location and then carefully shaped and spot-welded them to the drum, being very careful to control my welding heat. I then returned to Bud's shop to recheck the balance. To my delight I was only a  $\frac{1}{4}$  oz. off (too heavy) which was easily corrected by grinding some of that weight down. Back at home I re-mounted the drums and tested the car again — absolutely no vibration.

I have since done this procedure to my BJ7 street Healey and cured a nerve wearing vibration I had chased for years. Whether you drive your Healey for pleasure or excitement, I think you will find benefit in balancing the brake drums. I feel this is a must for vintage racing if your race club will not allow rear disc brakes or you just can't afford the big bucks for the conversion like me. Not only will you rid yourself of vibration, but you will also keep the rear tire print more consistently on the pavement. This can only translate into better high-speed performance and control. 



## Squeaks and Rattles

George Angelacos

*Source: Austin-Healey Tech Tips Notebook, compiled by the Carolinas Area Club, AHCA.*

No matter how plush, how late the model, how shiny the finish, a rattletrap is a rattletrap.

Many car owners put up with inexcusable sounds, including things that go bump by day as well as night, simply because they don't know how to find and fix odd noises.

Fortunately, no occult skills are required to quiet your car's body noises. You may be able to pinpoint the source of the sound right off or you may have to do some real sleuthing. Noises coming from one place sometimes seem to emanate from other parts of the car.

Try to describe the noise whether rattle, squeak, thump or wind whistle. This should give you some idea whether it's coming from the body or the chassis.

Start the engine and, with it idling, listen for the noise. Rev the engine and listen for it again. A sudden shriek when the engine speeds up is probably caused by a fan belt, air conditioning belt or power steering drive belt. Try turning the wheel quickly with the car at rest. The added load will cause the power steering belt to slip if it's going to and you'll hear it.

Other squeaks and minor rattles you can hear with the car at rest and the engine idling can be almost anything. Check the trunk

for loose tools or light metal objects. How about the contents of the glovebox? Under the seat? If the sound seems to come from the engine compartment, raise the hood and look. Can you see anything vibrating? Have someone rev the engine and see if it seems to rock unduly on its mounts. Any vibrating brackets? Generator? Air cleaner? Give the tail pipe a shake to see if the exhaust system is the source.

Now you're ready for the road test. Try smooth roads first and vary speed, looking for noises that occur at specific speeds. These are often caused by unbalanced, bent or out of round wheels and/or tires. Such vibrations sometimes show up other rattles you don't normally hear. If you hear a rattle in the rear of the car, try riding in the trunk to see if you can pinpoint it exactly.

With an idea of what's loose, take your rubber mallet and start tapping. Tap each suspect area and listen.

If a door rattles when you hit it near the bottom, suspect loose hardware. Remove the trim panel and fish it out.

Grab the door and try to shake it. If it wiggles or rattles, check for misalignment and compare the size of the crack when it's closed with that for the door on the other side. You can adjust it by loosening the hinge bolts, repositioning the door and tightening them again. Now check the striker plate to see that the door closes properly.

Rattles in deck lids and hoods often can be traced to loose hinge mounting bolts. Tighten them for a starter. Check latches

and safety catches and adjust.

If the noise is still with you, get out and get under. Check shock mounting bolts, rubber grommets, exhaust pipe hangers, brake cables and body mounting bolts on cars with separate frames.

Whistles and whooshes from wind can be traced to loose window weatherstripping and often to moldings. Check these by taping one piece at a time with masking tape. Test drive. When the noise stops, you've found the source. Fix it by removing the strip, spreading its clips and replacing after filling the back of the molding with auto caulking.

Radio antennas and windshield wipers also can whistle. Check by taking off the wipers or lowering the antenna. Cure with tape or by bending a sharp corner.

Groans and squeaks when a car hits a bump can point to popped welds or possible serious structural corrosion. A body shop can repair a weld but if you have serious structural rust the only real cure is to replace the whole car. Do it before it gets worse.

There is no easy way to spot an obviously unimportant, if annoying, rattle that comes from under the dash. Systematically tighten connections and try taping bunches of wires together so they won't vibrate. It's jiggle and tighten until you finally find it or quit.

Finally, grease the car's chassis if it has fittings, oil door and deck lid gaskets with a silicone spray.