Car Talk's
Summer Driving Tips

Okay, so summer's here and you're itching to fill your jalopy to the headliner and hit the open highway. Great! The combination of heat, long trips and heavy loads can place enormous demands on your car. So, before you pull out of the driveway, we'd like to humbly suggest that you make sure that Old Faithful is ready for a long, hot trip.

Here's our advice for things to thoroughly check out—before you set out on your next adventure. Yours in breakdown-free summer motoring

Tom and Ray Magliozzi
Click and Clack, the Tappet Brothers

1. The Cooling System
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4. Change the Oil
5. Air Conditioning System
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P.S. We'd like to hear from you, too! Be sure to add your two cents in our on-going summer driving discussion, below.
• http://community.cartalk.com/categories/all

Or for additional resources:
• http://www.cartalk.com/content/summer-driving-tips-10

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The Cooling System

Check out the entire cooling system: radiator, coolant, belts and hoses, cooling fans, heater core and water pump.

1a. The Radiator

First, make sure that the radiator core is in good shape. In areas of the country where roads are salted, the core of the radiator can literally rot away. Even though the radiator may not be leaking now, it will be leaking soon. That means bad overheating. And when your engine isn't cooled properly, it can easily blow a head gasket, or crack or warp a cylinder head. In technical jargon, your engine is going to "melt."

What is the radiator core, and how would you know if it's rotten? The core is the little tubes through which the coolant flows so that it can get cooled by the air flowing past it.

But, it takes some experience to recognize a radiator that's rotten, so we recommend that you ask your mechanic to check it out. He'll look at it and touch it to see how hard it is to get it to crumble. Unfortunately this is a destructive test—if it's rotten it will fall apart. But better it happens in the shop than on the highway, no?

Another common radiator problem is a plugged radiator core. If this happens, you'll notice that your engine is running hot when you're driving at sustained high speeds or, as a strictly hypothetical example, while you're climbing a long hill on a hot summer day with your mother-in-law in the trunk.

A plugged radiator core can be the kiss of death for an engine. How do radiators get plugged? Simple. If you haven't had your cooling system flushed since, say, Gerald Ford was vice president, it's likely that many of the little cooling tubes within the radiator core are clogged with rust. And those cooling channels are

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mucho importante. Remember—that's how the radiator cools the engine coolant... by passing the coolant through those channels and blowing cool air across them. So, if your radiator is plugged, it will still work, but not as well. And you'll be most likely to notice the problem when the car is under the greatest load (i.e., when you're halfway up Pike's Peak, with your mother-in-law in the trunk).

The bottom line? If your car ran even a little hot last summer, have your mechanic find the cause of it right now before it's too late. If there's any question about the core, he'll do a "flow test" to see if the right amount of fluid is passing through the tubes.

1b. Belts ... Hoses

Visually check the hoses and belts related to the cooling system. Squeeze the hoses and look for small cracks in the rubber. Make sure the hoses are tight (grab the hose near the hose clamp and make sure it doesn't rotate), and check to see that the belts have the proper amount of tension. To check the tension, push down on the belt. It should deflect about 1/2 inch. On some cars—mostly older ones—a belt turns the fan. On other cars, the cooling fan is electric.
(See COOLING FAN below.)

1c. Coolant ... Thermostat

You should be using antifreeze in your radiator, even in the summer. Why? Because antifreeze contains corrosion inhibitors, and actually has a higher boiling point than water. (Remember your high-school chemistry? When you mix two chemicals together, you end up with a boiling point that's higher than either one of them separately.) Should you change your coolant before the summer hits? Most coolant these days is what's called "lifetime" coolant, which means it's good for 60,000 to 100,000 miles before it needs to be changed. So, check to see when you last had your coolant changed. If it's close to the recommended interval, go for it before overheating season arrives.

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If you haven't had your thermostat replaced and you're car is well into middle age, we recommend to our customers that they get a new one when they're having a cooling system repair done. A stuck thermostat is a common cause of engine overheating. Replacing the thermostat is relatively affordable and it could save you a meltdown somewhere between Boise and Laramie.

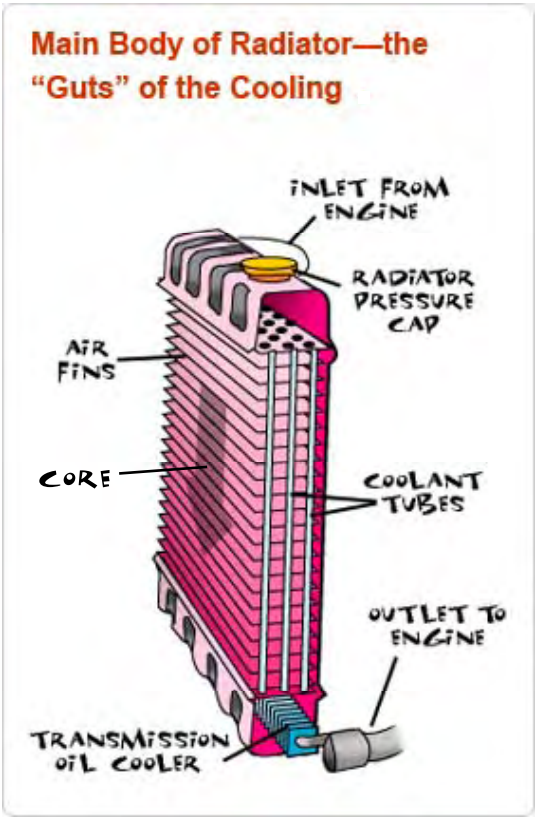
1d. Water Pump

Water pumps break—and when they do, they usually allow all the coolant to leak out. Luckily, a good mechanic can predict when the pump will die. (He does this by jiggling the pump to see how much "play" there is in the bearings. If it's loosey goosey, replace it. Lots of pumps, by the way, are driven by the timing belt, and are difficult to check in this manner. If your car is in this category, have the water pump replaced when you replace the timing belt.)

1e. Cooling Fan(s)

Most modern cars have an electric cooling fan--and some have more than one. The fan is controlled by a thermostatic switch. That is, the fan comes on when the temperature of the coolant rises to a predetermined temperature. You can check the operation of the fan yourself. It's simple—just turn on your car's AC. Then, open the hood, with the engine running (please, take off your ascot before you do this), and listen for the cooling fan. If the fan isn't running, it's not working. Have it fixed--sometimes the fan has gone south, and other times the problem is the coolant temperature sensor.

There are a few signs to look for, if you think your cooling fan might not be functioning. These include overheating while stuck in traffic, overheating with the AC on, or if your AC won't come on at all. If any of these problems are happening to you, the cooling fan could be a likely culprit!



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1f. Heater Core

The heater core is part of the cooling system, because the coolant runs through it. If the heater core leaks, the coolant drains out and you're in deep doo-doo. Your mechanic will put a pressure tester on the cooling system to find all the leaks—including this one.

The small tubes in the heater core can also get plugged with rust, over time. If that happens, you might notice that hot air is no longer available from your climate controls. On some model cars, repair or replacement of the heater core can be expensive. Be ready to pay for a full boat payment!

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The Tires

Checking your tires is crucial in the summer. Long road trips with humongous loads and high temperatures can stress your Goodyears to the max. And, obviously, if the tires go, you go! Besides, no one likes to force a mother-in-law into changing a tire on the side of the road. (You want to save her dwindling strength for that big transmission job when you get home!)

2a. Tire Pressure

Make sure that you have the correct tire pressure in all five tires. (In case you never noticed, there's a tire in the trunk.) There's plenty of debate about what constitutes "correct" tire pressure, but we suggest going by what your vehicle manufacturer recommends, which should be listed on the side of the driver's door, on the glove compartment door, or in the owner's manual. Don't confuse the "maximum tire pressure" listed on the sidewall of the tire with the "recommended tire pressure" provided by the manufacturer of the vehicle. While it's okay to inflate your tires to the "maximum tire pressure" number, "Recommended tire pressure" is the ideal pressure you want in your tires. If you're carrying an extra heavy load, follow the recommendation for "heavy loads," which is usually listed in the manual that came with your mother-in-law. (Or your car's owner manual.)

Ready for some more high-school physics? Remember that tire pressure will increase as the outside air temperature rises. In fact, tire pressure will go up approximately one pound for every 10 degrees Fahrenheit. So, tires that were at 35 PSI back in January when you drove to the slopes could easily be closing in on 45 pounds on a hot July day at the beach. Under some conditions that increase in pressure is enough to blow the tire! If nothing else, a tire that's overinflated will wear prematurely and will cause the car to handle and brake poorly. Don't count on your electronic tire pressure monitoring system to alert you to an overinflated tire, either—the warning light will only get illuminated when a tire's air pressure is too low, not too high.

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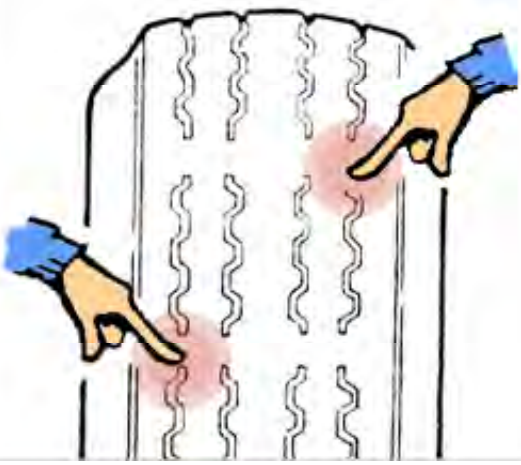
By the way, while you're out there checking the air in those tires, toss that stupid pencil-style pressure gauge in the dumpster where it belongs and get an accurate, dial-type gauge.

You also have to remember friction. As you drive, there's friction between the tires and the road. Friction means heat—and heat means an increase in tire pressure. So, here's what to do about your car's tire pressure: Check the tire pressure before you start driving. If the recommended pressure is 35 PSI, for example, it means 35 PSI before you start driving. If you check the tire pressure when you stop to get gas two hours later, it will be much higher than 35 PSI. If you check it at this point—after you've been driving--there is no way to know what the correct tire pressure should be. You'll be tempted to let air out of the tires, because the tire pressure will be greater than 35 PSI. Do not do this, because the tires will be under inflated.

2b. Tire Treadwear

Of course, you should always check the condition of your tires' treads. The minimum acceptable tread depth is 3/32 inch. This is about the distance from the edge of a penny to the top of Abe's head. But, if we were leaving on a trip, we wouldn't want the minimum tread. Because somewhere in the middle of that trip, you're going to be below the minimum tread So do you want to buy tires from the guy down the street, or from Uncle Luke's Gas Station and Charm School in the middle of the Bonneville Salt Flats? Why not take the trip on brand-new rubber?

All tires now have built-in "wear bars," which are indicators that appear when your tire is worn and should be replaced.



While you're looking at the tire tread, keep an eye out for an uneven wear pattern. "Uneven" means the tire is more worn on one edge. This usually means you need a wheel alignment. Also, run your fingers along

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the tread and feel for lumps. The presence of lumps could mean that the tire is not balanced correctly. It could also mean that you were a cheapskate when you bought your tires. How do we know? Cheap tires deform more at high speeds. As a result, they can wear peculiarly. The end result can be lumps or other odd wear patterns.

Don't be cheap! This is no time to try to save a few bucks. If you're close to needing tires, get them now.

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Steering and Suspension

When we talk about steering and suspension components, we mean all the stuff that holds the wheels onto the rest of the car and keeps the tires in good contact with the road—both important features to have, if you don't want to accidentally drive into a bridge abutment. You can't really check most of these components yourself. Go to your mechanic and ask him to check the front and rear suspension components, the steering gear, and related parts, including ball joints and tie rods.

By the way, some vehicles with rear, independent suspensions have ball joints and related components that can fail catastrophically. It's a good idea to find out if your car has this kind of suspension. If it does, don't forget to mention this to your mechanic.

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Change the Oil

Make sure you stay on top of your oil changes. This is particularly important in the summer, since a hot engine needs all the lubrication it can get, and at high temperatures your engine's oil is really getting put through the wringer. Our current recommendation is to change your oil every 5,000 miles—though that number may decrease dramatically if Kendall delivers with that check they keep promising.

A word about hauling big loads in the summer: Most car manufacturers will recommend 5W30 oil year-round. However, your owner's manual may have a recommendation for what's called "severe duty," such as pulling a trailer. In this case, you might want to switch over to a higher viscosity oil. Why? Well, under hot operating conditions, a thicker oil will thin out less quickly, making sure your engine stays well lubricated when it needs it most. If you do operate your vehicle under "severe duty" conditions, you should also consider changing the oil more frequently, because you're working it that much harder.

By the way, a lot of folks ask us about whether they should be using synthetic oil. Synthetics have a number of advantages over old-fashioned oil—most notably, they are less likely to breakdown when operating at high temperatures.

So, which should you use? Our advice is this: under most circumstances, we'd opt to use synthetic oil—in particular, if you have a high-end car, a high performance car, or if you happen to know that your model is prone to having the engine clog with varnish and other gunk. (Some Toyota V6 engines have been notorious for this problem.) In those cases, we'd recommend going the synthetic route.

If you're already using traditional oil, and want to make the switch to synthetic, try using a blended oil which contains a mix of traditional and synthetic oils.

Synthetic oil remains a bit more expensive than regular oil. But, over the life of the car, the differential is probably not more than a few hundred bucks—and we think that's worth it.

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Stay Cool! Check the Air Conditioning System

Let's face it: when it's 95 degrees and humid outside, and you've been stuck in the car for six hours with three rowdy kids, one slobbering canine and a grouchy in-law, having working AC might just be the only thing that keeps you from diving out the window and running headlong into the grille of an oncoming Mac truck.

There's nothing to really maintain, per se, on your air conditioning system, but there are a few important things that are worth checking. Here's why it matters: Failing AC can affect more than just the cool breeze blowing in your face. On most modern cars, the serpentine belt that helps power the air conditioner also provides power to other things, too—including the water pump that keeps your engine from overheating, for example. If your AC fails, your summer safari could come to a screeching halt faster than you can say, "Pass the Right Guard!"

First, check to see that you're getting some cold air coming out of the vents when you turn on your AC. Next, consider asking your mechanic to check to make sure that the AC system is fully charged with refrigerant. Finally, ask your mechanic to check for a noisy compressor, and to listen for the telltale sounds of a noisy or worn AC clutch.

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Check the Tranny

The same heavy demands placed on your engine during the summer months can also affect your car's transmission. Check your owner's manual to see if you're getting close to the recommended service interval for the transmission. If so, do it before you go.

You'll want to make sure your transmission fluid is nice and clean, since dirty transmission fluid is a good recipe for cooking your transmission until it reads "well done." If you're in doubt, we'd suggest you go for the service. Changing the transmission fluid before a long trip is cheap insurance. And, when you're getting it done, ask to have the transmission flushed—not just drained and refilled. That'll help assure that any gunk in the transmission is removed, so it won't cause any untoward problems when you're barreling towards the World's Largest Ball of Lint, in East Slackjaw.

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Some other stuff to think about while you're driving across the Mojave Desert

Nothing ruins a car faster than overheating. Just because you're nice and cool in the passenger compartment doesn't mean that your engine isn't dying of heat prostration a few feet away. Be nice to your car; it's the only thing that's between you and hitching across Death Valley. Here are a few of our suggestions:

Suggestion A: Slow Down. Drive at 55, not 65. Take a look at the view!

Don't forget: When you're pulling a heavy load and traveling at high speed, you're really imposing a tremendous demand on the engine and transmission, to say nothing of the fact that the trailer you're hauling probably also has terrific wind resistance. Sure, you might be able to drive at 70 miles an hour, but you're doing it at the expense of your engine and you'll be using dramatically more gas. You might get to your destination a half hour earlier, but you might just toast your engine, too.

Suggestion B: Watch the Temperature Gauge.

If you do notice your temperature indicator starting to rise, turn on the heat in your car. Your car's heater core will divert a little more of that heat away from the engine (remember—the heater core is another little radiator). Sure, the passenger compartment will get hot--maybe unbearable--but you might save the engine. Overheating can ruin an engine. So, if the temperature gauge is running hotter than it normally does, take these precautions, slow down and get some help at the next opportunity. If the engine is actually overheating—that is, the needle is near or in the red zone, or the "hot" light is on—stop driving. It may seem inconvenient, but you will almost certainly ruin the engine if you drive while it's overheated.

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Suggestion C: When All Else Fails (A Few Things to Toss in the Trunk).

If you've followed all the precautions described above but bad luck has caught up with you anyway, here's Click and Clack's Official Heap of Things to Bring on Your Summer Road Trip.

A. Bring some extra coolant, particularly if you are traveling through the boonies, where service stations are spaced farther apart. If you're from the East and taking your first trip out West, consider yourself forewarned: there ain't a gas station every 20 miles, pal.

B. Bring a quart or two of oil. See Item A. Even a good engine can burn oil with sustained driving.

C. GPS. Attention all Real Guys: Don't let testosterone poisoning cloud your thinking. Bring along your favorite phone navigation app, and use it. Remember, too, that you may be out of cell reception for some of your trip, so consider a portable GPS navigation system like Magellan or, heck, just print out a hard copy of your plans using Google Maps.

D. While you're packing, also toss in a roll of duct tape. Duct tape has a number of great uses, such as temporarily repairing a hole in a leaky hose, or slapping it over the mouth of your kid when he's driving you completely wacko.

E. Do yourself a proactive favor—if you're going to be driving through unpopulated terrain, throw out that Mickey Mouse spare tire in your trunk and bring a real spare tire with you. Would you trust one of those cheesy spares to get you across the desert of Nevada? We sure wouldn't. Spring for the money, get a real spare, and have it mounted on a rim that fits your car. (Yes, we know people who have actually made that mistake!). For those of you on a budget, a good option is to get a used tire at your local junkyard. Look for

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something that hasn't been left to degrade out in the sun and that has a reasonable amount of tread left. You can tell if the tire is degraded if there are cracks in the side wall or the tread "valleys."

By the way, that little spare isn't recommended for more than 50 miles of driving. So, if you expect to be more than 50 miles from civilization, this is especially important.

F. Toss in a screwdriver, a couple of flares, a pair of pliers, vise grips and maybe a coat hanger or two to hold up the muffler when it falls off.

G. Remember the jack that came with your car? Get it out, and try it out. Make sure you have all the parts that came with it, and get comfortable using it.

H. Everyone who's got one, should bring his or her cell phone. Not only will the phone be useful, but the camera might come in handy, too—for photographing an accident scene, or posting a few images of that timber rattler closing in on you to Instagram, so your friends can share how your trip ended.

Well, that should do it. Bon voyage! And one more thing: while you're driving around this summer—be sure to stop and check out the Toilet Seat Museum in San Antonio, Texas. The kids will love it. Tell 'em Ray sent you.

Buon avventura, guys,
Tom and Ray

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List to take to the Mechanic

P.S. Here's that list you can take to your mechanic.

1. Check out the entire cooling system: radiator, coolant, belts and hoses, cooling fans, heater core and water pump.
2. Tires: check tread depth, uneven wear and tire pressure, and get a real spare.
3. The front end: check ball joints, tie rod ends, steering components.
4. Check the suspension, including struts and shocks both front and rear.
5. Change the oil. Look for leaks.
6. Check the air conditioning system: refrigerant level, compressor clutch and belts.
7. Check the tranny. Are you close to the recommended service interval? Is the fluid nice and clean? Any leaks?
8. Check the brakes! We know you're eager to get to your destination. But you want to stop when you get there, right?

notes:

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