

Auto GUIDE

Helping you stay on the road

BY TOM MOOR

Toss this compact guide into your glove box.
Or bookmark it on your smartphone.
Either way, you'll have this handy information
at your fingertips: angie.li/auto-guide

BE EFFICIENT

IMPROVE YOUR GAS MILEAGE



1. JUNK IN TRUNK?

Extra weight from unneeded items in your car makes your vehicle's engine work harder and consume more fuel.

3. CALM DOWN!

Aggressive driving – braking, rapid acceleration and speeding – can lower highway fuel economy by 33 percent.

2. CHECK TIRES

Underinflated tires waste nearly 200,000 gallons of fuel per day in the U.S. A mix of properly inflated tires, regular tire rotations and wheel alignments can increase mileage by up to 7 percent.

4. ROLL THEM UP

You may think you're saving gas by rolling down windows instead of using the A/C, but if you're going faster than 25 mph, the aerodynamic drag can actually cause your car to work harder.



DON'T FORGET

Check your air filter.
A clean filter can
increase mileage
by up to 6 percent.

DRIVING APP-TITUDE

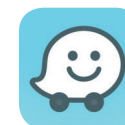
A sampling of free apps that can help you become a smarter driver:



PLUGSHARE

WHAT: Great for electric-car owners. Features 50,000+ charging stations.

KEY FEATURES: Find stations and check for availability. Glean tips from other users.



WAZE

WHAT: A community-based app that shares real-time traffic and more.

FUN FEATURE: Can select celebrity voices to give you voice-guided navigation.



DASH

WHAT: Connects car to phone via device that you plug in – models start at \$10.

KEY FEATURES: See detailed info about driving performance. Explains dashboard notifications.

ISTOCK (LEFT), MATT MUKERJEE/ANGIE'S LIST (RIGHT)

4 FLUIDS YOU SHOULD CHECK

A little DIY can go a long way in keeping your vehicle running smoothly. One way: Make sure to keep fluids full and clean.

ENGINE OIL

Where: Dipstick typically located in front of the engine.

What to look for: Should be clear. If it's dirty, then it's time to change.

Why change: Critical to ensuring your engine runs properly. And low or no oil can cause major damage.

When to change: Every 5,000 miles or so.

TRANSMISSION FLUID

Where: Front of engine on front-wheel-drive vehicles; behind engine on rear-wheel drive. Newer models may not have a dipstick to check level.

What to look for: Should be red, pink or light brown. Darkness may indicate time to change. **Note:** Car should be running when you check.

Why change: Prolongs life by keeping transmission lubricated with clean fluid.

When to change: Every 60,000 to 100,000 miles.

COOLANT

Where: Translucent reservoir beside the radiator.

What to look for: Make sure level rests between minimum and maximum markings.

Why flush: Removes contaminants that could cause components to fail.

When to flush: About every 30,000 miles or three years.

Warning: If you want to add coolant, do not open radiator cap when engine is hot.

BRAKE FLUID

Where: Reservoir typically behind the engine.

What to look for: Make sure level rests between minimum and maximum markings.

Why flush: Not all mechanics agree, but it might help clear out any moisture and contaminants. Discuss with a trusted mechanic.

When to flush: About every 45,000 miles.

Note: Above ranges are general guidelines. Check your owner's manual for specific instructions.

DON'T IGNORE THESE 5 TASKS

Most of us know that vehicles need regular oil changes. But if your maintenance starts and stops there, you could be in for a bumpy ride.

1. ROTATE TIRES, CHECK PRESSURE

Regular rotating helps the tread wear more evenly, prolongs the life of the tires and improves gas mileage. Between rotations, be sure to check tire pressure. Get specifications from your owner's manual. Low pressure can create uneven wear on the tread and will force the engine to burn more gas.

2. COMPREHENSIVE INSPECTION

You already know to get this before buying a used vehicle, but it's something you should also include as part of your car's general maintenance. A complete inspection should include checking all the car's critical safety components – inside and out.

3. WIPER BLADES

This sounds simple, but it's something we often overlook. Poorly performing blades can significantly limit vision during inclement weather such as snow and rain, especially at night.

4. TIMING BELT

Unfortunately, there is no way to know when your belt might go out; it usually just breaks. Most manufacturers don't recommend a mileage interval to replace it. However, the average life is between 50,000 and 100,000 miles.

5. FLUIDS BEYOND OIL

Ignoring your radiator could leave you stranded and steaming on the road. See opposite page for detailed information.

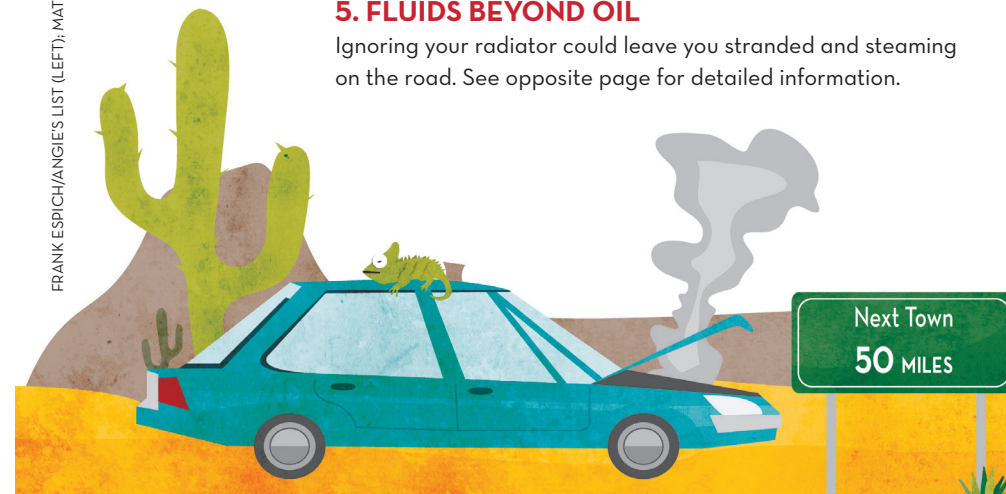


CLEAN BATTERY

Keep terminals clear of gunk. Grab a toothbrush, water and baking soda. Remove the negative and positive clamps, in that order. After scrubbing the terminals with baking soda and rinsing with water, reconnect the clamps starting with the positive terminal.

MEMBER DEAL!
Find auto repair offers:
angie.li/auto-offers

FRANK ESPICH/ANGIE'S LIST (LEFT); MATT MUKERJEE/ANGIE'S LIST (RIGHT)



CAR CARE CHECKLIST

Want to keep your ride running smoothly? Make sure to monitor these items frequently.

CHECK EVERY MONTH

- Oil level** – Add oil if it's low, check for leaks
- Hoses** – Hire a pro to replace if they appear to be bulging, rotten or brittle
- Belts** – Hire a pro if they appear to be worn, frayed or glazed
- Tire pressure** – Add air if it's too low
- Inspect tires** – Look for damage, bulges or uneven wear
- Coolant** – Add if low, check for leaks
- Air filter** – Replace if it's dirty

CHECK EVERY THREE MONTHS

- Oil and oil filter** – Hire a pro to change every 5,000 miles for conventional oil; up to 7,000 miles for synthetic oil
- Windshield washer fluid** – Add if low
- Power steering fluid** – Add if low
- Transmission fluid** – Have a pro add if low
- Battery terminals and cables** – Clean if they appear to be corroded
- Lights** – Ensure they work, including turn signals

CHECK EVERY SIX MONTHS

- Wiper blades** – Replace if they appear to be worn, brittle or cause smears
- Horn** – Or did you already confirm it works at a red light?
- Brakes** – Hire a pro to inspect for unusual wear and tear
- Spare tire** – Is it fully inflated? [if car has one]
- Exhaust system** – Hire a pro to look for rust, damage or loose parts
- Shocks** – Hire a pro to inspect for oil seepage or wear



BRAKE PADS

Varies greatly, depending on vehicle weight, road conditions and driving frequency; should check them at every oil change



HOW OFTEN SHOULD I...

Worried that you've neglected those vehicle essentials for too long? Worry no more. Ignite calm by motoring through this checklist.

Mileage (in thousands)	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Services																					
ROTATE TIRES	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
COMPLETE INSPECTION			✓			✓			✓			✓			✓			✓			✓
CHANGE TIMING BELT										✓											✓
CHANGE FUEL FILTER						✓						✓							✓		✓
CHANGE SPARK PLUGS (Copper Tip)						✓						✓							✓		✓
CHANGE SPARK PLUGS (Platinum or Iridium)																					✓
REPLACE AIR FILTER						✓						✓							✓		✓
CHECK ALIGNMENT	✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓

FRANK ESPICHI/ANGIE'S LIST (RIGHT)



STRANDED! WHAT DO I DO NOW?

Breakdowns happen at the oddest times and places: In the middle of the night, on a desert highway, during a blizzard, or in that ONE area that still has no cell service. That's why it's good to stock an emergency kit, just in case. The National Highway Traffic Safety Administration recommends having at least a few basics, which can be stored in a hard plastic case under a seat or in the trunk. Some suggested items include:

- Cellphone charger
- First-aid kit
- Flashlight
- Flares
- Warning triangle
- Jumper cables
- Nonperishable foods
- Drinking water
- Emergency lamp
- Blankets/warm clothing

FRANK ESPICHI/ANGIE'S LIST

WHAT WILL THIS COST ME?

A nationwide sampling of some of the most common repair prices:

PREVENTIVE

Oil change – conventional	\$25-50
Oil change – synthetic	\$70-100
New air filter	\$20-50
Power steering flush	\$99-125
Radiator flush	\$100-150
Fuel injector cleaning	\$50-80
Complete inspection	\$50-200
Wiper blades	\$10-20

ENGINE

Timing belt replacement	\$500-900
Repairs from broken timing belt	\$2,000
Drive belt replacement	\$75-200
Remanufactured alternator	\$300-500
New alternator	\$500-1,000
New fuel filter	\$100-150
Fuel pump replacement	\$100-1,000

BATTERY

Standard, installed	\$50-120
Long-lasting, installed	\$90-\$200

GLASS

Windshield replacement	\$185-1,000
Windshield chip repair	\$70-230
Sunroof replacement	\$300-400

Sources: Angie's List service providers, CostHelper.com

Note: Prices can vary widely, depending on where you live, the vehicle type and what type of provider you use. These average price ranges are for general guidelines only. Prices include labor.

TOWING

Local	\$75-125
Long distance: 40 miles	\$125-275

TIRES

Rotation	\$20-25
Alignment	\$75-100
Replace all	\$525-725

BRAKES

Flush	\$100
Replace all pads	\$250-375

MUFFLER

Repair	\$30-500
Replacement	\$100-800

TRANSMISSION

Leak repair	\$150-200
Flush	\$100-200
Solenoid replacement	\$300-\$850
Rebuilt transmission	\$2,800-3,800
Replace transmission	\$3,300-8,000

AIR CONDITIONING

Diagnostic and recharge	\$80-150
Repairs	\$800-\$2,000+

WHAT'S THAT SOUND?

Lend an ear to your car. It may be trying to tell you something.



🔊 SQUEAK

If you hear this while braking, get your brake pads checked.



🔊 SPUTTER

It's time to get the muffler and the rest of the exhaust system examined.



🔊 CHIRP OR SCREECH

Your engine might have a frayed belt if you're hearing this from under the hood.



🔊 GRIND

This sound when braking means the rotors are damaged. Get this fixed ASAP.



🔊 ROAR

Tires may be worn. Or it might be time to consider an alignment.

HOW DO I GET POO OFF MY CAR?

Those birds who love your front-yard tree left a little “love” all over your hood, too. Here’s how to remove those unsightly white dots before you drive to work or to the store:

DON'T WAIT. Untreated bird poop and bugs have acid and can eat through your car’s clear-coat protective layer, all the way to the metal. This can happen within 48 hours after contact.

WASH YOUR CAR. Do this at least once every couple of weeks, and wax your ride two or three times per year, to remove poop and bugs.

WANT TO DIY? Just keep a bottle of water and a microfiber rag handy to wipe away the waste.

BE CAREFUL WHEN WIPING. Some birds swallow gravel when eating, because it helps them digest food. The gravel bits in their feces can scrape your car’s surface when you wipe them away.

TOO LATE? Paint and clear-coat damage is for the birds. It costs \$300 to \$1,000 to repair.



SAPPY STORY

Bugs and tree sap can have a similar debilitating effect on your vehicle’s paint job. Bugs have chemicals that can eat through clear coat.



A DIFFERENT KIND OF STICKER SHOCK

Bumper stickers might seem like a great way to support a politician, cause or sports team, but when they lose – or at vehicle selling time – you’ll wish they didn’t stick. Here’s how to remove them effectively:

1. Steam, a hair dryer or a heat gun will loosen the adhesive on the back of the sticker. Apply the heat a few inches away from the sticker, though. If you apply heat too closely, you might melt the paint and the bumper.
 - ! Do not use a razor or screwdriver. It will almost always scratch the bumper.
2. Keep the heat source circling or moving to avoid prolonged heating in one area.
3. To remove any remaining glue, buff the area with rubbing alcohol on a microfiber towel.
 - \$ If you hire a pro, prices vary, depending on age of sticker and its condition. Typically, add \$20 to the cost of a detail per sticker.
 - 📄 Consider other options, such as magnets or window clings. Also consider placing the sticker on glass instead, which makes it easier to remove.

LESLIE MCFARLAND/ANGIE'S LIST (LEFT); FRANK ESPICHI/ANGIE'S LIST (RIGHT)



CAN I GET A USED CAR INSPECTED?

That 2012 model on the lot is just what you've been looking for! But don't judge a car on looks alone.

THE ANSWER: DEPENDS

The Federal Trade Commission advises people "to ask to have the car inspected by an independent mechanic before you buy," but it's not a requirement of the dealership to allow cars to be inspected off-site. Most do allow prospective buyers to get one. Consider it a red flag if a dealer refuses.

IMPORTANCE OF INSPECTION

It can help you steer clear of a car with problems. Sometimes, cars advertised as accident-free have been in crashes that weren't reported to sites such as Carfax. "The absolute only way to buy a used car is to have it inspected," says Dave Bernard of eLemonators Used Car Inspections in Portland, Ore. "If the VIN report is clean, I can assure you that the dealer will not tell the buyer that it has been wrecked, even if they know better."

IF DIY IS THE ONLY OPTION

If you're at an auction or a place where you can't get an inspection, examine the vehicle as thoroughly as you can. Look under the hood at the transmission fluid, which should be clear enough to read words through it. Check the oil. If it's black, the previous owner likely neglected routine maintenance.



ROAD TEST

"Roll the windows up. Shut all noises off. Steer the car left and right. Just by listening, you can tell a lot about the car."

- mechanic
Bill Allen of
Casselberry, Fla.

DO I REALLY NEED ...

TO REPLACE MY TIMING BELT?

YES! It sounds like a scam: Pay hundreds to replace this belt, or it could cost you thousands if it breaks and causes damage. But it's true. The timing belt plays an integral role. If it fails, your engine will shut down. You don't want that happening on the interstate.

TO CHANGE MY POWER-STEERING FLUID?

YOU SHOULD! This service is typically not listed as routine maintenance in the owner's manual. However, mechanics we polled agree that flushing the fluid is good. It helps protect the steering pump from premature failure due to fluid contamination, which does occur over time.

TO USE FUEL ADDITIVES?

NOT REALLY! It's tempting to try anything to boost mileage. However, the FTC urges consumers to be skeptical of products claiming to improve gas mileage or reduce emissions. The FTC also states it has found few gas-saving products that work, and the ones that do offer minimal savings. Some products can even damage your engine, it claims.

THAT PREMIUM GASOLINE?

PROBABLY NOT! Premium, typically 20 cents per gallon higher than regular, does offer a more efficient combustion for engines. However, the FTC says there are no advantages to using premium in cars that don't require it.

TO REPLACE ALL TIRES AT THE SAME TIME?

IT'S A GOOD IDEA! If the budget is tight, it may be OK to do two now and two a few months later, but most providers agree that you should buy all four together. A key reason: Tires with different traction levels can affect handling of the car during wet conditions.

FRANK ESPICH/ANGIE'S LIST (LEFT); MATT MUKERJEE/ANGIE'S LIST (RIGHT)

