## SATURDAY MECHANIC

# HOW TO STORE YOUR CAR

BY DON CHAIKIN

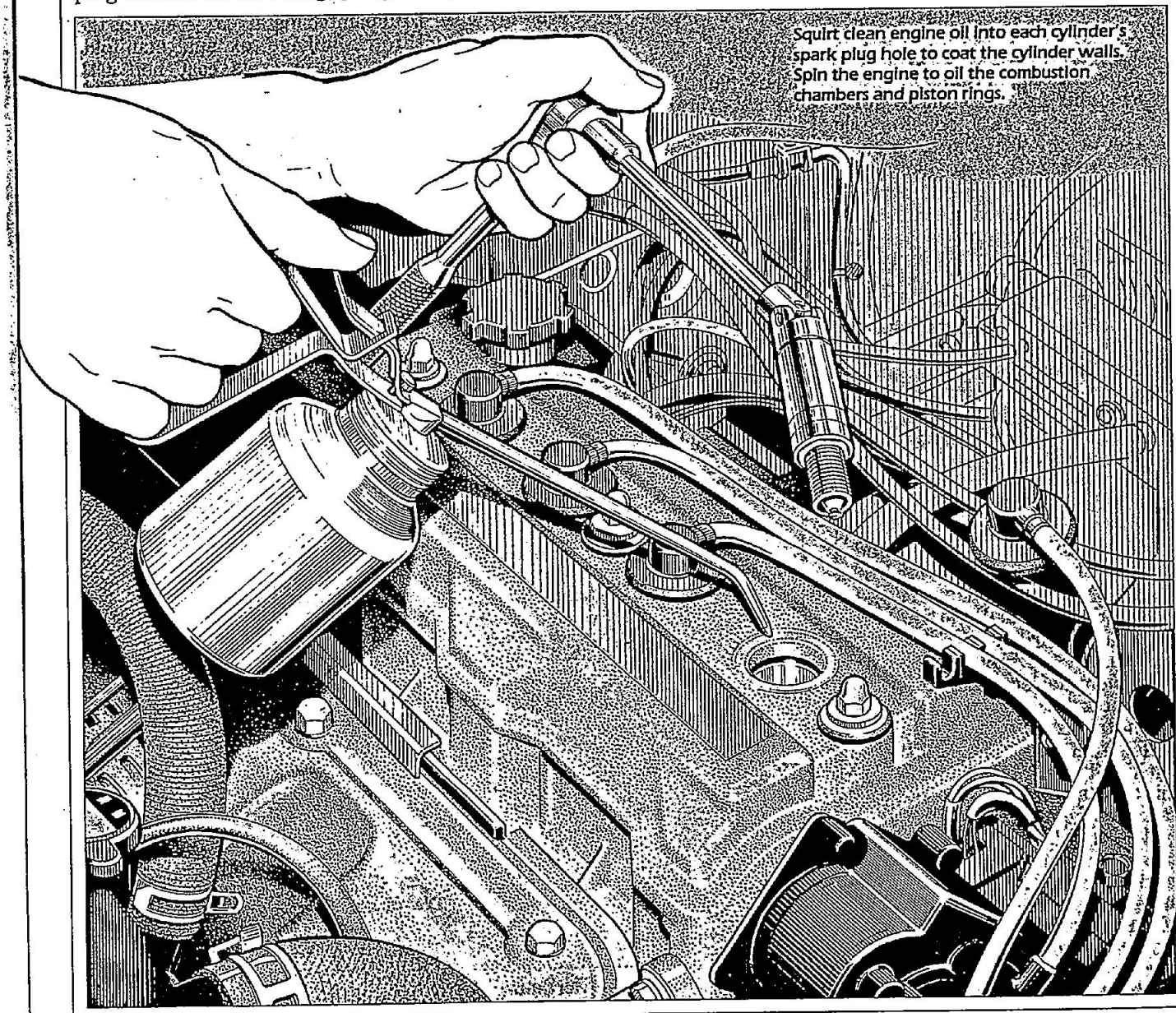
● You've just received orders and you're going to be spending the next three years in South Korea. Or maybe this isn't a training exercise—it's what all your training has been about—you're going overseas with a couple hundred thousand of your closest friends to teach some Third World gangster that our military is second to none. Regardless of why you're shipping out and for how long, you just know that your brand-new ZR-1 isn't going with you. You also know that you're definitely *not* going to leave the keys with your kid brother while you're gone.

Whether you're going to put your new or like-new car, pickup truck or motorcycle in storage for a few months or a few years, you can help guarantee that it will be in the same primo condition when you take it out of storage as it was when you put it in.

You'll also have a minimum of grief getting it back on the road.

### Drive it before you park it

While you can easily coat various external surfaces to seal them from the ravages of moisture and exposure, short of totally disassembling your car, you can't quite as simply protect internal surfaces. But there are criti-



Squirt clean engine oil into each cylinder's spark plug hole to coat the cylinder walls. Spin the engine to oil the combustion chambers and piston rings.

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cal unseen areas that must be protected from corrosion, rust and the formation of varnishes and gums. Drive far enough and long enough to thoroughly warm up all of the vehicle's vital fluids—engine oil, transmission fluid, gear oil and engine coolant. Then, drive home and drain everything. Draining all the fluids while they're hot removes any corrosive moisture and sludge with them.

Naturally, replace the engine oil filter. Replace the fuel filter as well. Then refill with fresh lubricant.

Next, flush and refill the cooling system. Either drain the old coolant from the radiator and engine block or use a reverse-flush kit, with a special flushing Tee installed in a heater hose.

Once the cooling system is completely free of old coolant and rusty water, refill the system with a fresh 50/50 mix of antifreeze coolant and water. Check the protection-level chart on the coolant container.

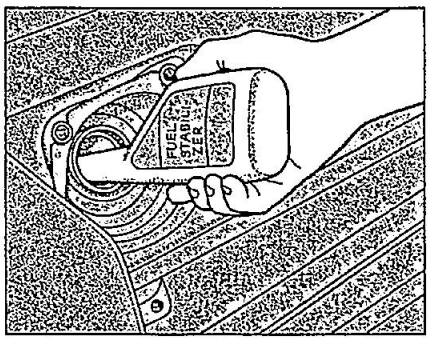
Remember, a mix that's purely antifreeze is not as potent as one that has some water in it, due to the chemical reactions of the ingredients. Also, the anticorrosion additives in the coolant rely on the presence of a certain amount of water to do the job, so don't go any stronger than 70% coolant and 30% water.

With fresh coolant in the engine and new lube in the engine, transmission and drive axle, go for another drive. Again, the purpose is to fully lubricate all internal moving parts and seals. This time, drive to a filling station that you've known and trusted for years to have pure fuel in clean tanks. But before filling your car, pour a fuel-stabilizing additive into the fuel tank.

Fuel stabilizers are designed to prevent stored gasoline from breaking down, forming varnishes and gums inside the fuel system. If your auto parts store doesn't stock a fuel stabilizer, try an outdoor power equipment dealer, where it's sold for lawn and yard equipment. Add as much stabilizer as needed for your vehicle's fuel tank. Then fill the tank with fuel, and drive just enough to mix the stabilizer and pump it into the carburetor or fuel injectors.

While totally draining gas from the tank and running the engine until the carburetor, fuel pump, filter and lines are empty also prevents the buildup of varnish, it leaves room inside the fuel system for condensation to build. The condensation causes corrosion. A full tank leaves no room for condensation or corrosion in the fuel system.

Now you can drive home to finish the storage procedures.




Add fuel-stabilizer additive to prevent varnishes inside the fuel system.

## Batten down the engine

Further protect the inside of your car's engine by putting a coat of oil on surfaces that normally aren't heavily lubricated.

Once the engine is cold, remove the spark plug from each cylinder. Then squirt several shots of clean engine oil into all the cylinders through the spark plug holes. Apply antiseize compound to the spark plugs' threads, and reinstall the old plugs in the cylinder head. Disconnect the ignition, leaving off all the plug leads and the leads to the distributor or control module. (If you have an electronic ignition, you should check the service manual for the appropriate way to disable the ignition. Simply pulling the high-tension leads may cause spark box failure.)

Turn the ignition key to spin the engine several times. This ensures that the oil in the cylinders not only covers the cylinder walls for the entire piston stroke, it forces the oil up into the combustion chamber and onto the valves, to help protect those surfaces.

Coat each ignition system connection system with dielectric grease as you reinstall all the wires. Also, disconnect the battery leads and coat all the terminals, including the exposed terminals on the starter, with petroleum jelly. Remove the battery from its tray and attach it to a trickle charger, away from the car.

Besides protecting all electrical connections with petroleum jelly or silicone to seal out moisture, apply silicone spray to all accessible hoses —fuel lines, coolant hoses, vacuum hoses—to help prevent them from drying out.

To help prevent rust and corrosion to unpainted metal parts—such as the throttle linkage, exhaust manifold, clamps and brackets, coat them with petroleum jelly, silicone or penetrating oil.

Lastly, to discourage mice and other small creatures from taking up winter quarters in your engine compartment, roll fist-size packets of camphor balls in cheesecloth. Place the camphor packets around the engine compartment, tucking some in corners near the firewall and against the felt or foam sound-deadening material on the hood's underside.

Tape a plastic bag over the air-cleaner intake and exhaust pipe exit to prevent mice and squirrels from nesting or storing seeds inside.

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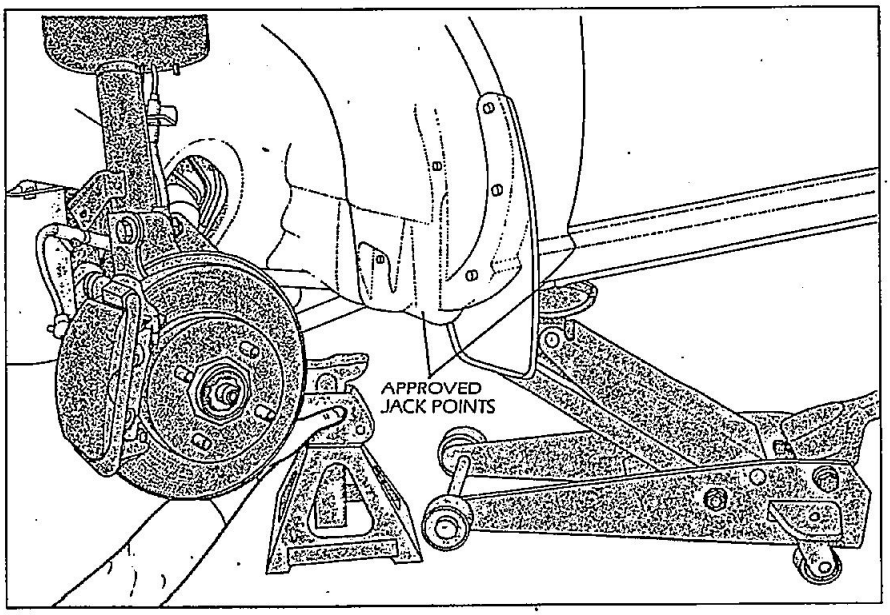


Place the car on safety stands for the duration of the storage.

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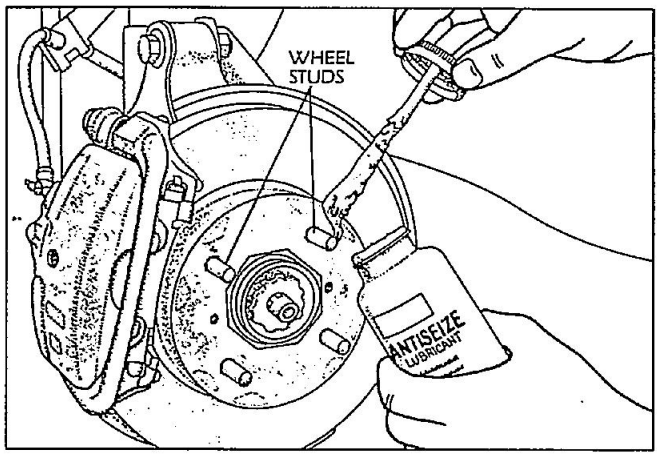
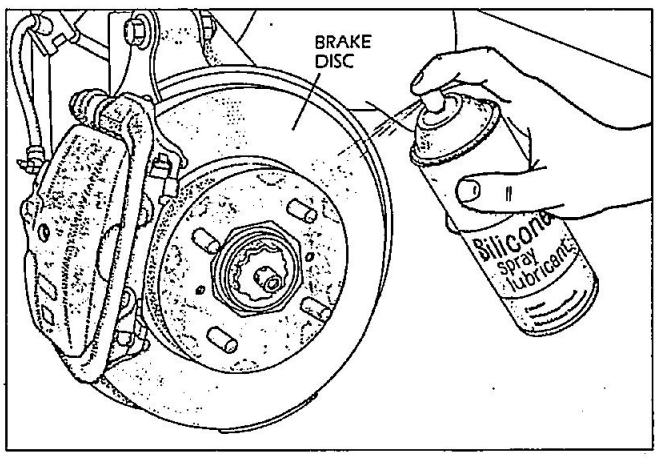



Coat the wheel studs' metal threads with antiseize compound.




Coat rotors and calipers and other exposed metal parts with silicone.

## Underside up

To prevent the tires from developing a flat side while resting in the same spot for so long and to ease the load on the springs, shock absorbers and the rest of the suspension, your car or truck should be stored sitting on safety stands.

Make sure your stands are large enough to securely hold your rig off the ground. Each stand should have a broad base and large enough cradle, as well as being rated to hold at least one fourth of the vehicle weight. Jack up your car or truck so that when it's resting on the safety stands, the bottom edges of the tires all clear the ground by an inch or so. You don't need the vehicle towering above the ground. It should be just high enough for the tires to rotate freely. If you're storing the car on an unpaved surface, use lengths of wood long enough to prevent the stands from sinking into the surface as the seasons progress.

Place each safety stand carefully. Support your vehicle under frame rails or other structural members, not under axles or suspension components. If you place the stands under an axle, the weight of the vehicle will still compress the springs and shock absorbers. With the safety stands under the vehicle's frame, the wheels, springs, shocks and suspension components all hang free, holding only their own weight.

With your rig up in the air, remove all four wheels and tires, and lay them aside for now. Slide underneath and inspect the entire underbody. Remove any clumps of wet or dry leaves, grass, caked-on mud or anything that could trap moisture, helping in the formation of rust.

Look for any bare metal areas and seal them. If appropriate, prime and paint them, otherwise coat the surfaces with silicone, penetrating oil or another water barrier to prevent rust and corrosion. Key areas to protect include steel suspension components, brake drums, wheel spindles and bearing covers, as well as disc brake calipers and rotors. Also protect exposed shift linkages and non-stainless-steel exhaust pieces.

While you're underneath, coat all rubber surfaces with silicone spray to keep them from drying out. This includes suspension bushings, fuel lines, the lower radiator hose, brake lines and constant-velocity joint and steering rack boots.

Lastly, check for grease fittings on suspension and steering components as well as at the driveshaft universal and slip joints. If there are any fittings, grease them with the recommended lubricant. And then hang some more camphor and cheesecloth packets around the undercarriage to help discourage nesting.

Now, before putting the wheels and tires back on, clean the inner and outer sidewalls of the tire, and apply silicone to both. Also, clean both sides of all the wheels. Put a coat of wax on the cleaned wheels, but don't buff it off. Apply antiseize compound to the threads of the wheel-mounting studs, and reinstall the wheels and snug up the lugnuts, torquing them to specifications. Then coat the nuts' outer surfaces with wax. Make sure the tires are all inflated to the correct cold-inflation pressure to help them keep their shape, and cap the valve stems. Then reinstall any wheel covers.

Double check that the car is high enough off the ground so that the wheels are all hanging freely to prevent flat spotting the tires.

## A clean body

Next, thoroughly clean the car, inside and out. In fact, detail the car as though you were about to be taking it to a car show. With one important difference—don't make it shine.

Thoroughly and carefully wash the car. Remove the license plate brackets and luggage racks that can trap dirt and moisture, and clean the areas they normally cover.

Store these pieces in the trunk, along with the radio antenna mast, if it is not the type that fully retracts, and the windshield wiper arm assemblies. By removing the wiper arms, you relieve the pressure on their hold-down springs. But be sure to coat the exposed wiper shafts with petroleum jelly to protect them from corrosion after you've finished washing the car.

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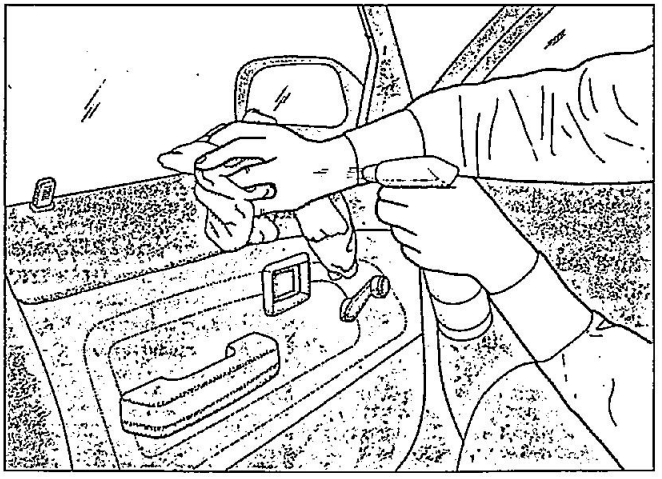


Clean all interior plastic, vinyl or leather surfaces with the appropriate product. Shampoo the carpets and cloth seats.

Take extra time to be sure to totally remove any stains. Bird droppings, tree sap, dead bugs and globs of road tar and other substances can etch the car's finish if given months—or years—to work at it. Use a chemical solvent, like bug and tar remover, to completely clean all stubborn spots. Then, wash and rinse the car again to remove any residue of the solvent. Dry the car, using chamois or old terry-cloth towels. Then inspect the finish carefully.

Check for any chips, nicks or scratches in the paint. Any damage down to bare metal will surely rust—possibly through—given enough time in storage. Treat any bare spots with a rust stabilizer, then prime the area and, after the primer dries, touch up the damage with the correct color body paint.

Next, apply a moderate coat of wax. However, unlike what you normally do, cover the entire car at once and then simply let the wax dry to a haze. You won't buff off the wax until you take the car out of storage.

Similarly treat all chrome surfaces of your car—wire wheels, grilles, headlight bezels—with a quality chrome polish. Also treat plastic and vinyl surfaces with an appropriate polish. Protect weatherstripping around the windshield and backlight, as well as all the doors and the trunk, with silicone.

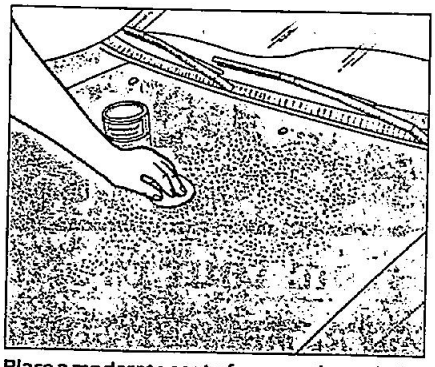
## Go inside

Next, do a thorough cleanup of the car's interior. Wash and vacuum all upholstery, carpets and floor mats. Clean and polish the dashboard, door panels, armrests, pedals, shift lever, window crank and door levers. After cleaning, coat all noncloth surfaces with the appropriate polish. Spray the clean upholstery and carpeting with a cloth protector.

Be totally sure there's no water trapped anywhere inside the car. Otherwise, it will not only be a source of rust and corrosion, the moisture will encourage mildew to develop. Make certain all vent holes, such as the bottom of the doors and under the cowl, are clear to allow moisture to escape. As an added antimildew measure, spray some household disinfectant into all the heater/defroster/air conditioning vents, as well as into the fins of the heater core and air conditioning evaporator.

Before sealing up the interior, place a couple of open boxes of baking powder around the passenger compartment. Place one box under the front seats, one in the rear and one under the dash to absorb odors. Then close all the windows, and close the doors.

If your car is a convertible, close the top and install any zippered-in windows or side curtains. Besides helping to seal the interior, this installation will help prevent the convertible top and the car's side curtains from cracking at the folds.



Place a moderate coat of wax on the car's finish, but don't buff it off.

Next, clean the trunk or cargo area of station wagons and hatchbacks. Again, be very careful that there are no pockets of water or moisture anywhere. Clean and dry the rain channel around the trunk or hatchback opening. Remove the spare tire and jack from their storage well, and be sure that area is dry.

Before reinstalling the spare, inflate it to its proper pressure. But to keep the spare from getting misshaped in storage, lay it flat on the floor of the trunk or cargo area, out of its mounting bracket.

Place an open box of baking powder in the trunk to absorb moisture and odors. Be sure that the weatherstripping is coated with silicone, and close the trunk lid.

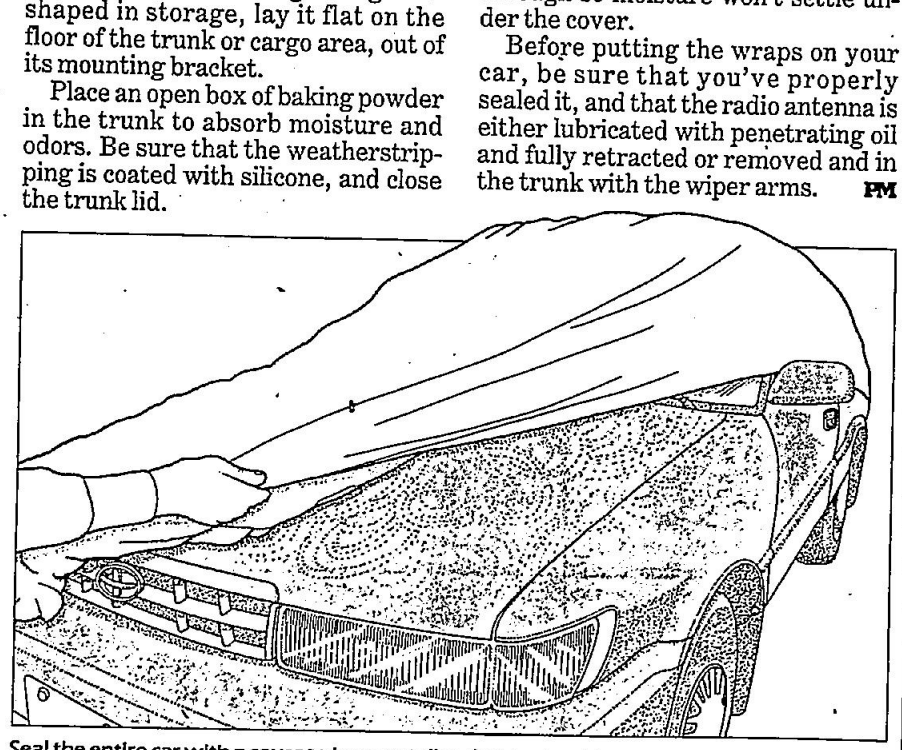
## Cover it up

Whether you store your car inside, as is preferable in a heated, humidity-controlled garage, or in an unheated barn, chicken coop, carport or out in the yard, put a quality cover over the car. A cover not only keeps dirt and dust off the car, it shields the car from the Sun's ultraviolet rays, the ozone and other airborne pollutants. Logically, the more of the car you can cover, the better.

It's critical then that your cover is the correct size for your car or truck. While you can have a cover custom tailored to fit your rig, you can also buy a more-or-less universal one off the shelf. Custom-made covers not only protect all of your car, they fit snugly, leaving less room for moisture or critters to get underneath. A well-fitted cover also stands a better chance of staying in place if the car is outdoors and subject to wind and weather. If you buy a ready-made cover, make sure that it's the correct size for your car. The cover has to slip over and under your car's front and rear bumpers and under the rocker panels on both sides of the rig.

Regardless of which type of cover you select, make sure it's made of a soft material that won't scratch the car. In addition, the cover should be lintfree and tightly woven to prevent dirt and dust from passing through. Yet, it should allow air to pass through so moisture won't settle under the cover.

Before putting the wraps on your car, be sure that you've properly sealed it, and that the radio antenna is either lubricated with penetrating oil and fully retracted or removed and in the trunk with the wiper arms. **PM**



Seal the entire car with a cover to keep out dirt, dust and moisture.

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