

Automobile wiring protection from rats

We have a problem in Los Altos Hills where the local rats have developed a taste for the electrical insulation found on the wiring of (mainly) German automobiles. They are also known to go after Japanese vehicles as well, but these appear to be less desirable.

The culprit could be any one of the following:

- Norway Rat.
- Roof Rat.
- San Francisco Dusky-footed Wood Rat. This guy is (technically speaking) not a rat at all but a fairly rare critter who, while not listed by the California Fish and Wildlife Service as a "federal endangered or threatened species" is listed as "of interest" so you can't just go wiping them out. (Remember however that it is your inalienable right to own a cat.) So while he may not be a rat, he looks like a rat, walks like a rat - but the biologists say he isn't a rat.

Your first instinct to controlling this problem might be to set out to poison them, but the use of poison is actually counter-productive. The poison ends up also killing the animals that prey on these critters, with the net result of causing the problem species to proliferate even more while decimating the good guys.

Trapping these creatures is of course an option, but not only is this a lot of work, it is also an unending task as it merely creates a population vacuum which attracts more rats from further afield.

But there is a better way to protect your vehicle(s).

The critters are nocturnal and really don't like to operate in the presence of light.

So... In my case I purchased a lawn-lighting transformer and hooked it up to some spotlights (one shining under each vehicle) and never had a problem again. The transformer I chose was of the kind that detects (absence of) daylight with a photocell so that it powers the LED spotlights only at night-time. I prefer this to a timer because we have so many power failures and I have to reset a number of timers already whenever this happens - so I don't want to add another one.

The lights I chose can be found in the lawn lighting department of any large hardware store (I got mine at Orchard Supply, I'm pretty sure Home Depot has them as well) but it is important to choose a spotlight (i.e. with a beam) and one that uses an LED lamp rather than any form of incandescent (filament) bulb - not only because it is cheaper in electricity used, but, more importantly, it won't burn out for a number of years - maybe longer.

Also please remember that Los Altos Hills is sensitive to light pollution and our building codes cover "external lighting" - so be sure to use spotlights rather than floodlights, and position them so that when you park your vehicle they are very close to the front bumper or even underneath the front bumper. This way you can minimize any light spillage.



If you are going to use a transformer of the type I used, **CAUTION you have to mount it out of the rain**, but nevertheless somewhere where it receives a lot of daylight - otherwise it won't "see" enough light to cause it to switch off the power to the spotlights. I have mine mounted on a pillar of the car-port - so under the protection of the roof but with a clear view of the sky. And of course you need a 110 volt outlet to plug it into.



From the transformer you just run a wire to each of the spotlights.

The spotlights are designed with a plastic stake sticking out of the bottom and are intended to be planted in a lawn - obviously impractical if you want to position them e.g. on a hard-topped driveway. So instead I mounted

them on a wooden block which can easily be moved if desired. This one is made out of two scraps of 4x4 lumber joined by two scraps of 1x4 with the lamp's "stake" clamped between them.

The wire I used in this example is ordinary "flex" lamp cord - not a good idea but what I had available in my junk box at the time I did this. the insulation on the wire does not weather well in our sun and turns black and becomes brittle. I need to replace this when I get round to it. The next picture shows how it should be done.



In this case I used the proper wire that is sold in hardware stores for lawn-lighting purposes. It is heavy guage (less loss on low voltage systems) and the insulation is designed for outdoor use.

The "mounting block" I used in this example was made of four scraps of 2x4 lumber.



A note about the transformer I used. I bought this one at Orchard Supply many years ago for under \$40, but I see now that it costs around \$120 (I googled on "Malibu ML100THB") and I notice it has less than stellar reviews on Amazon. The main complaint seems to be that it doesn't switch off in daylight. I haven't had that problem because I mounted it out in the open where it can "see" bright daylight sky. I suspect it would not work correctly inside a garage or similar. You might want to find a model with better ratings or have it controlled by a timer.

On this model I do have some options - to turn off a fixed time after dusk or only with the return of daylight, and I can adjust the sensitivity of its daylight sensor - I think I have it turned up to be as sensitive as possible to the presence of light.

This transformer is rated at 100 watts, and each spotlight consumes around 10 watts, so there is plenty of power for around 6 or 8 lamps with a decent safety margin (i.e. protection for 6 or 8 vehicles - should be ample for most folks in our town) and the lamps I bought I think were around \$30 each - but I see them on Amazon for closer to \$10 apiece now.

POSTSCRIPT - I have deployed variations of the above design for a number of years now, starting with component LED's mounted on wood strips in the days before lawn-lighting suppliers moved to this technology. In this time, I have suffered no more damage to my vehicles from rat predations. (...knock on wood...)