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# Can Your Car Stand the Cold?

*Timothy, a Timid Soul, Thought His Couldn't, Until Gus Told Him a Few Easy Ways to Make It Winter-Proof*

By MARTIN BUNN

A CHILL wind whistled an accompaniment to the squeal of the brakes on Gus Wilson's machine, as the veteran auto mechanic stopped his car in front of the Model Garage and tooted his horn. The doors swung open and a mingled odor of burning kindling wood and hot steam pipes greeted his nostrils as he drove in.

"You beat me to it," he called to his partner, Joe Clark, as the latter closed the doors behind him. "I was going to suggest that we'd better start the furnace. A bit of heat feels good on a day like this.

"Howdy, Mr. Timothy," he added as he caught sight of a thin, neat little man whose physical insignificance was in startling contrast to the huge sedan he owned. "You're the first customer this morning. What can we do for you?"

"Well, er—" the mild little fellow hesitated, "I was just remarking to Mr. Clark, here, that I'm afraid it's about time to put my car away for the winter and I wanted to ask you if there are any special precautions I should take."

"Why put it away?" questioned Gus bluntly.

"Oh! I couldn't think of keeping it in commission all winter," said Timothy, apparently quite horrified. "Everybody tells me winter weather is extremely hard on a car, and you know I take a lot of pride in this machine. I'd hate to have anything happen to it." He stroked the broad, shiny mud guard like an old maid fondling her pet cat.

"You're dead right about winter weather being hard on cars in general," Gus agreed, "but that's no reason why it should be hard on *your* car if you treat it like it ought to be treated. The extra wear winter takes out of a car can be blamed on the owner's ignorance or carelessness ninety-nine times out of a hundred—and the hundredth case is due to conditions you'll never encounter."

TIMOTHY brightened perceptibly. "If that's really true, Mr. Wilson," he said, "I'm exceedingly glad to know it. I rather disliked the idea of doing without my car all winter. It's the only amusement I have."

"Don't you worry about its being true," Gus asserted. "You just pay attention to what I tell you and I'll guarantee that at the end of the winter your car won't show any more wear than it would after the same number of miles of summer driving. You'd better get out a pencil and a notebook, so you won't forget.

"All ready?" said Gus. "The first thing, then, is to find out what parts of

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the car can be put on the blink by cold weather, then we can figure out how to stop it. Cold weather raises hob with the cooling system, for one thing. Cooling systems are designed to keep the motor temperature well below the boiling point of water, even in the hottest summer weather when the air that shoots through the radiator gets up to eighty degrees, or even more.

"THE air in winter may be fifty, or even eighty, degrees colder, and it soaks the heat out of the radiator so fast that the motor never gets a chance to warm up the way it ought to. Cold oil doesn't flow as it should and that means the motor doesn't get the proper lubrication. Cold gasoline doesn't vaporize and you literally keep spraying the cold cylinder walls with raw gasoline. If you keep a motor running that way the rings, pistons, and cylinder walls wear to beat the band."

"But my car has a thermostat control to prevent the water from circulating if it is too cold," objected Timothy.

"That kind of a thermostat helps a lot," Gus agreed, "but it has one disadvantage in very cold weather. It slows down the water circulation so much that the water flowing into the bottom of the cylinder jacket is cold and the cylinder walls are kept cold enough to condense quite a lot of gasoline. However, it's easy enough to fix that by covering part of the bottom of the radiator so the water will have to circulate faster. The main point is to see that the motor oper-

ates just as warm in winter as it does in summer."


"In other words," Timothy interrupted, "I should watch the thermometer on the radiator cap and see that after the motor warms the running temperature is the same as in summer."

"That's the idea," said Gus, "but you can't do it with that radiator thermometer. It doesn't read within a mile of right in winter, especially if the water level in the radiator is a bit low. You've got to have one that reads directly from the water in the cylinder jacket or the outlet hose. I can fit one of that kind."

"What proportion of alcohol and water do I have to use in the radiator?" Timothy inquired.

"You won't use any if you take my advice," Gus growled. "Alcohol really has nothing to recommend it. Of course it will keep the radiator from freezing, but you either have to run the motor too cold for best efficiency or else keep putting in more alcohol every few days to make up for the alcohol that boils away."

"SPEAKING of boiling away the alcohol," Joe interrupted, "reminds me of the time I nearly got pinched as a rum runner by a green prohibition agent. It was one of those mild spells we have every so often in winter and I'd been hitting the high spots till the motor was good and hot. I was leaving a trail of alcohol fumes strong enough to poison a dog, and this dumb-bell officer whiffs it and takes after me, thinking I had some cases of liquor and one of (Continued on page 141)



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## Can Your Car Stand the Cold?

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the bottles had sprung a leak. You should have seen his expression after he'd ordered me to stop and sniffed out where the smell came from!"

"That," commented Gus as the laughter subsided, "explains what's the matter with alcohol. It's a perfectly good antifreeze only it won't stay put. What you need is something that is equally noncorrosive and yet won't boil away. Glycerin and ethylene glycol are the only two that will do the trick. There really isn't any choice between them. They both cost a lot more than alcohol, but you more than make up the difference by using the same solution winter after winter if you don't lose it on the road through leaks in the cooling system. I'll go over yours to see that it's tight."

"How about the lubrication?" Timothy inquired. "I have been informed that special oil must be used in winter."

"That's true enough if you let the motor run cold all the time," Gus replied, "but if you keep the motor at summer temperature there's no reason why you shouldn't use the same grade of oil all the year round. Of course, if you keep your car in an unheated garage you want to let it warm up before you drive it out. And run it *slow* while it's getting warm. Racing a cold motor is the worst thing you can do.

"THE transmission and rear end," Gus continued, "ought to be filled with a lighter grease or oil in winter than in summer. That's particularly important if grease is used, because a stiff grease may get so hard that the gears just cut grooves in it, and besides, you have a lot of trouble shifting speeds.

"You want to watch out for your storage battery, too. It won't freeze if you keep it fully charged, but a nearly exhausted battery will freeze and be ruined if a cold snap hits it. I'll set your generator so it shoves more juice through the battery. Don't add water except just before you go out for a drive. The jiggling around will mix it with the solution before it gets a chance to freeze."

"My gracious!" exclaimed Timothy. "I didn't realize it could be so simple. Just a few easy precautions and I can enjoy my car in winter without hurting it."

"That's what it amounts to," Gus agreed. "Remember to use high grade gas so the motor will start easy, and don't forget to carry tire chains with you all the time. You never can tell when you're going to get caught in a snow-storm or a sleet storm, which is even worse."

"ARE any of these car heaters satisfactory?" Timothy inquired. "If they are, I could get along without a heavy overcoat and thick gloves."

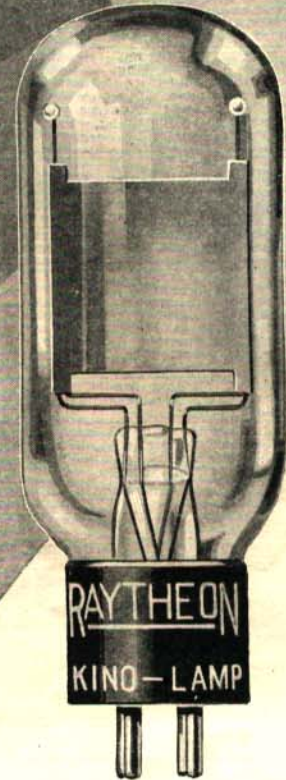
"Most of the good makes are all right if they are installed carefully," Gus replied. "But don't go sailing off without an overcoat. A friend of mine did that once in the middle of winter with the temperature down below freezing. About four miles from nowhere, the motor quit the job and the poor boob had to hoof it in that weather without any overcoat or gloves. He mighty near got pneumonia!"

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