

*Gus Gives Some Hints  
On Care and Driving  
Of Modern Automobiles  
To Get Most Mileage  
On a Gallon of Fuel*



"Don't you think I ought to get better than twelve miles to the gallon on a car like this, Gus?" Featherston queried

# Are You Wasting Gasoline?

**T**WELVE miles to the gallon! And on a long trip, too! Eighteen miles to the gallon is what I'm supposed to get with this new car, but do I get it? I do not!" Martin Featherston muttered angrily to himself as he checked, for the fourth time, his mileage figures against the gas he had used on his recent trip.

"Well," he growled, snapping his notebook shut, "either those advertisements are a lot of bunk, or else there's something wrong with this car. I'd better do something about it."

A few minutes later, he pulled into the Model Garage, climbed out of his new sedan, and spotted a huge pair of feet sticking out from underneath another car. "Hey, Gus!" he called. "Have you got time to look at my car?"

"Just a minute and I'll be with you," came in a muffled voice from Gus Wilson, veteran auto mechanic and half owner of the establishment, as a huge and grimy hand appeared, gripped a spanner, and disappeared under the car again.

"Don't you think I ought to get better than twelve miles to the gallon on a car like this when I'm off on long trips?" Featherston asked, as Gus started wriggling out. "Of course, if that eighteen-to-twenty-miles-a-gallon claim of the manufacturers is a lot of hokey, then I suppose there's nothing to be done about it. I've had it at the agency several times, but it always comes back no better than it was when I brought it in."

By MARTIN BUNN

Gus chuckled as he wiped his hands on a wad of waste. "That claim may be a bit optimistic, but twelve miles to the gallon certainly is low. You ought to get at least sixteen or seventeen under average conditions. Let me try it on the road."

Gus climbed behind the wheel and Featherston got in beside him. The car ran with perfect smoothness and, so far as Featherston could see, gave no indication of poor carburetor adjustment. The motor did not surge or romp as it would have done if the gas mixture had been much too rich.

When they got back to the garage, Gus lifted the hood. "I suppose the agency men have checked the carburetor, but it won't do any harm to look at it again," he observed. He carefully tested the idling adjustment, then removed the top of the float chamber and noted that the level of the gasoline was at just the right height.

"And I'll bet they checked the ignition, too," he muttered, half to himself, as he stood gazing at the distributor. "So, chances are the trouble isn't there, although the motor doesn't seem to have as much pep as it should. Perhaps the automatic spark control may not be right. They don't always check that. I'd better have a look—well, I'll be jiggered!" He turned to Featherston in surprise.

"Look at this," he called. "See that kink in the vacuum line to the distribu-

tor head? Somehow that pipe got a twist that closed it up so that the vacuum can't advance the spark as it should. The result is that the motor is running with the spark retarded more than it should be. No wonder you're getting no economy in your gas consumption!"

The twist in the vacuum line was in such a location that a casual inspection would not have revealed it, so that it got by the agency service men.

"Seems to me these new cars have too many new-fangled gadgets," Featherston observed. "That couldn't have happened on an old car with plain manual spark control, could it?"

"No, it couldn't," Gus admitted, as he measured for a new pipe, "but, on the other hand, unless you're a real expert, you couldn't hand-control the spark as accurately as this system does when it's working right."

"And it can't forget," smiled Featherston reminiscently. "I can remember when I had the motor boiling hot, and nearly burned out a set of exhaust valves on an old car because I forgot to advance the spark. But, in those days, we at least knew enough to blame ourselves for doing something wrong."

"You still can blame yourself for doing one thing, at least, that doesn't help any if you're after gas mileage records," said Gus, "and that's hopping on the throttle a couple of times just before you let in the clutch for a start."

"What's the matter with doing that?" Featherston (Continued on page 129)

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## ARE YOU WASTING GASOLINE?

(Continued from page 60)

asked in surprise. "I do it often just to make sure the motor is running when I'm in heavy traffic. The blamed thing is so quiet that I can't tell whether it's stalled or not. Besides, it seems to make the get-away easier, somehow."

"Did you do it with your old car?" Gus asked.

Featherston smiled. "I didn't need to." You could always tell whether the motor was running by the noise and the vibration. And, if you did hit the throttle quick like that, it usually popped back on you."

"THAT'S just the point," Gus insisted, as he took down a coil of copper pipe and unbent a length of it. "Modern carburetors are fitted with a tiny pump hooked to the throttle in such a way that when you push down the throttle suddenly, a lot of extra gas is forced into the mixture. So, when you have to open the throttle quickly, the motor gets extra gas and takes hold with a strong, steady pull, instead of bucking and popping like the old-style carburetors did when they were set for a fairly thin mixture. Now, when you push down on the throttle two or three times in quick succession before making a start, the mixture gets so thick you can actually see black smoke come out of the exhaust. A fellow can waste a lot of gas that way, so you'd better cut it out.

"As a matter of fact," he added, "if you want good gas mileage with any kind of a car, you'll let it gain speed slowly without opening the throttle more than necessary."

"Are there any other points about driving a modern car that'll help to improve the gasoline mileage?" Featherston inquired.

"None about the driving that wouldn't apply to old cars," Gus replied, as he reached over to make the connection at one end of the vacuum pipe line, "but there are several points about the new cars that you want to keep in mind if you're after fuel economy.

"One of them is right here," he said, as he rested his hand on the air cleaner. "If you let this gadget get so dirty it doesn't let the air through freely, the effect is a little bit like riding with the choke on a trifle all the time, so that more gas will be pulled through the carburetor jets and you'll get a slightly rich mixture."

"Another new-fangled gadget to worry about," laughed Featherston. "It's up to me, I guess, to keep it clean. At least, it's easy enough to see when it needs attention—or shouldn't you let it go till you can see the dirt?"

"YOU can let it go till it begins to look gray and dusty, but don't wait till it's all caked up," Gus advised. "And be sure you oil it, too. It may seem like a lot of trouble to clear out the air cleaner now and then, but it's a lot cheaper and easier than to have the car laid up while you have new pistons and rings put in. Every bit of grit that gets into the cylinders with the air through the carburetor may help to form carbon, or else mix with the oil and form a mild grinding compound that wears away the cylinder walls, the pistons, and the rings. Lots of times your business gives you occasion to drive on unpaved dirt roads where the dust rises in clouds and the air cleaner is the only thing that stands between you and a whopper of a bill for the repair of a motor worn out all too soon.

"There's another point about modern cars that can cut down the mileage, and you can spot it right away. That is the condition of the tail pipe. In modern cars, the tail pipe that carries off the exhaust gases is so long that it reaches beyond the body in some cases. The object in (Continued on page 130)

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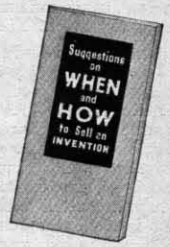


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## ARE YOU WASTING GASOLINE?

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making it long that way is to shoot the gases out where they won't have any chance to drift up into the body of the car. Exhaust gases are bad medicine. They always contain a lot of carbon monoxide, and that's a deadly poison.

"The only trouble with having the tail pipe go back so far," Gus continued, "is that if you happen to back into some rubbish, or a pile of rocks, or anything like that, the end of the pipe may be folded up so that the gases can't get out freely. Then you have back pressure and high gas consumption, to say nothing of loss in power. A brand-new car stopped by here only yesterday with the tail pipe closed up to a small crescent of an opening that made the gas hiss as it came out. So, if you happen to back into anything, be sure to take a look at the exhaust pipe."

"THAT'S one new-fangled idea that obviously is worth while," Featherston remarked. "Any improvement that will help to keep carbon monoxide out of the car may be a life saver."

"There are at least two more old-time troubles that you can't spot by just looking around," Gus went on. "One of them is a high carburetor-float level. If the gas level is too high, there'll be too much gasoline drawn through the jets, and the mixture will be a little rich and not so economical. In the old days, when a carburetor got that way, you could spot it quick enough because the gas would leak out and you could see it dripping—and smell it, too."

"Now, with the modern down-draft carburetor, the leaking gas goes down into the intake manifold and there isn't any outside indication. Of course, with the modern fuel pump, the gas stops feeding to the carburetor as soon as you stop the motor, so only a little gas can leak before the level drops to where it ought to be."

"How about a leaky float valve or a float that leaks and sinks and doesn't shut off the gas? How can you locate that kind of trouble?" Featherston asked.

"There isn't any such thing as trouble from a leaky float valve any more," Gus smiled. "That's one form of grief that modern construction has wiped right out. In the old days, when you got a leaky float valve, the gas level in the float chamber would rise as soon as you stopped, till it reached the level of the jets. Then it would leak out, and keep on leaking out till the vacuum tank was empty, so that even a small leak meant quite a lot of gas lost. Now, with a fuel-pump feed, the fact that the gasoline float valve is leaking doesn't mean anything unless the leak gets so bad that the valve leaks gasoline faster than the motor takes it out of the float chamber at idling speed. When the motor stops, the leak stops too, because the fuel pump stops supplying gas."

"IN THE case of a sunken float, you'll know it quick enough," Gus concluded, "because the fuel pump will fill the float chamber right to the top and then begin squirting gas into the manifold so fast that the motor will choke up and stop."

The two men got into the car again, this time with Featherston at the wheel. "Seems to have a bit more pep," he observed, "but I can't see a great deal of difference."

"You'll see an improvement in the gas mileage, I'll bet," Gus promised.

"I hope so," Featherston said, "but some of the old-timers were economical too!"

"Sure," grinned Gus, "but why try to compare a lion with a mouse? How many 100-horsepower old-timers could come anywhere near equaling this bus for gas economy?"