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Gus
gives some

Tips on Economical Driving

JUST a bunch of boulevard buggies, that's all these new cars are!" Art Selden grumbled disgustedly, as he climbed out of his mud-covered, late-model sedan in front of the Model Garage.

"Not so good as a mud turtle, eh, Art?" smiled Gus Wilson, mechanic and half owner of the establishment, as he eyed the heavy load of sample cases in the back of the hardware salesman's car.

"Wish I could take the fellow who sold me this bus over part of my route through the mountains," Selden growled. "He bragged about what a good cooling system it had, and it boils like a darned teakettle before I can get to the top of a lot of those long mountain pulls up mud roads."

"Humph!" grunted Gus. "How about showing me what it'll do on the back trail up Oakes Mountain? That's only a couple of miles from here."

"Hop in," Selden snapped. "I'll show you, all right!"

In spite of the sticky mud and the deep ruts, the motor managed to keep the heavily loaded car up to twenty miles an hour on the stiff, two-mile upgrade.

"It's got the power, all right," Selden admitted, as they reached the halfway point. "Always had to shift to second at this spot, with the old bus."

Just before they reached the top, the dash thermometer reached the danger point and a cloud of steam floated out behind them.

"Told you it would!" snorted Selden, as he stopped the car and got out. "What's the matter with the cooling system?"

"Let me try it," Gus suggested, walking around to the driver's side of the car.

"Think you're a better driver than I am, do you?" Selden jeered. "Bet you a cigar it boils for you, too."

They rolled down to the bottom of the hill and started up again. When the temperature gauge crept up too high, Gus shifted quickly into second gear and opened the throttle enough to maintain the same speed. In a few seconds the thermometer started down again, and by the time they reached the top it was only slightly above the normal running point.

"I can do with that smoke right now," Gus grinned.

"You win it fair enough," Selden agreed, as he fished out a fat cigar and handed it to the veteran mechanic. "But I still don't see why it should work that way. I should think that the faster the motor turned over, the more heat it would generate, and in second gear it would boil quicker than in high."

"You forget that the fan and pump work twice as fast in second," Gus explained, as he bit off the end of the cigar and searched his pockets for a match. "And, while the motor is turning over twice as fast, the explosions in each cylinder are weaker, so that the net effect is better cooling in proportion to the heat developed. The only reason your old car didn't nearly blow the cap off the radiator on this hill is that you had to shift. You're not going to blame the new bus because it's got more power, are you?"

"Of course not, Gus," Selden replied. "Thanks for the tip. There's a lot of things I don't get the hang of yet, in this driving business. And I ought to know all the

tricks, because, working on commission as I do, every cent I spend on the car comes right out of my pocket."

"You're not the only one in that fix," Gus laughed, as they headed back for the Model Garage. "When a man neglects his car, nobody will waste any sympathy on him if his repair bills are big. But I do feel sorry for the fellow who is trying his best to keep his car right, and mistakenly goes to a lot of trouble to do things that do the car more harm than good."

"Tell me some of them," Selden suggested. "Maybe I do them, too."

"Well, for example," Gus began, as they climbed out again in front of the Model Garage, "how often do you fill the radiator?"

"Every time I get gas," Selden replied. "Surely, keeping the radiator filled is a good thing, isn't it?"

"That depends on what you call filled," Gus explained. "There's no sense in filling the radiator right up to the brim every time you get gas. If there is no leak in your cooling system, you don't lose any water to speak of for months at a time, unless the motor boils over. Now, if you just recently filled the radiator up to the brim, the chances are that only the excess water has been forced out since then. In that case, filling it again is bad practice. Every time you put in more water, you put in more dirt, unless the water is distilled or exceptionally pure. Traveling around, the way you do, you're likely to run into plenty of sections where the water has chemicals in it that form lime deposits in the radiator. The best way is to fill the radiator only when the level is actually below the normal running point—and if there is (Continued on page 124)

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GUS GIVES SOME TIPS ON ECONOMICAL DRIVING

(Continued from page 74)

any doubt about the water supply, use distilled water."

"That makes sense. I'll remember it," Selden commented, as he removed the filler cap on his radiator and inspected the water level. "How is this, now?"

"Just a little low, on account of the boiling," Gus decided, as he reached for the water can. "The water here is O. K."

"Now, there's another place where too much water does a lot of harm, and that's in your battery," Gus went on. "The natural thing for a careful driver to do, when he is figuring on taking a long trip, is to screw the caps off the battery cells and fill each cell to the brim with water. Nine times out of ten, if the car has been used only for shopping trips around town for a while, the battery charge is low, quite a bit of the acid has gone into the plates in the form of chemical compounds, and the level of the solution is a bit lower than it otherwise would be."

"THEN filling is just what it needs, isn't it?" Selden interrupted.

"Yes and no," laughed Gus. "The driver ought to make sure that the plates are covered, but he should be mighty careful not to add too much. If he fills each cell to the top, under such conditions, what happens? Off he goes on his trip, and the current flows through the battery steadily for hour after hour. The solution expands as the acid is driven out of the plates, and because some heat is developed. Then, when it gets near full charge, lots of gas bubbles form to still further increase the bulk of the solution. There's only one place for the solution to go, and that is out through the gas holes in the caps. That's bad, for two reasons. First, the cells lose acid that they need; second, the slopping acid starts corrosion of the battery box and the terminal wires."

"I thought battery cell caps were designed to keep the solution from coming out," Selden objected.

"No cap can keep the solution in when the battery is filled too full under such conditions," Gus explained. "Point is, you ought to test the battery with a hydrometer before you put any water in. If the gravity is pretty low, only put in enough to cover the plates by about an eighth of an inch. Then, at the end of the first day's run, after the battery has had a chance to get charged, take another look."

"Then, too," Gus continued, "you'll see lots of careful tourists in summer burning their headlights in the daytime to keep the battery from continual overcharging. Now, while burning the lights is better than tearing the battery plates to pieces with too much charging, it isn't a very bright trick. What's the use of generating all that current and then wasting it to wear out the headlight bulbs? It's much better to spend a couple of minutes with a screw driver and cut the generator charging rate by moving the third brush down to the point where it only charges a maximum of four to six amperes. Then, when you get home and the car is going to be used only for the usual short trips and shopping calls, you can move the brush back to give you a higher charging rate."

"HOW do you know what the right charging rate is?" Selden asked.

"You've got your generator set right for your own driving conditions," Gus pointed out, "when the hydrometer shows the battery fully charged at the end of every short trip and yet you don't have to add water more often than once every two weeks if you're using it a lot, or every month or two if the car isn't run very much." (Continued on page 125)

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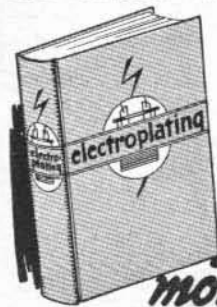
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GUS GIVES SOME TIPS ON ECONOMICAL DRIVING

(Continued from page 124)

"Any other good ideas that will save me money on the operation of my car?" Selden inquired.

"Here's one that applies to this car and to other late models," said Gus, as he lifted the hood and pointed to a cylindrical bump on the side of the carburetor. "This little gadget or its equivalent is on every modern carburetor. Inside this cylinder is a piston that is connected to the throttle. When you open the throttle quickly raw gasoline is shot into the mixing chamber. That eliminates starving and the popping-back you used to get on old-fashioned cars when you opened the throttle too quickly.

"ASIDE from that," Gus went on, the device has some definite advantages—and some disadvantages, too, according to how you handle the car. It's a definite disadvantage if you're one of those chaps who keep stepping on the accelerator every few seconds when they're maneuvering a car to get it into a parking space, or driving in traffic. Watch some one who has the habit and you'll see bursts of black smoke shooting out of his exhaust pipe, showing how much too rich that excess squirting of gasoline makes his mixture. I've seen a man flood his motor so badly, handling it that way, that it stalled and had to be cranked with the starter several seconds with the throttle shut to clear away the excess gas.

"The same thing happens, to some extent, if you ride the throttle in your regular driving. If you keep stepping on the throttle and taking your foot up again, instead of maintaining a steady pressure that will keep the car at the speed you want, you're going to use more gas to the mile.

"On the other hand," Gus continued, "that gasoline-squirting device is a real help in getting the motor started. In fact, if you use high-grade gas, you can stop using the choke entirely during the summer, and even in winter except when the motor is stone cold. All you have to do is to give two quick, short jabs on the throttle pedal, then hold it open a trifle and step on the starter. The gasoline you squirt that way gives the same result we used to get in the old days when we 'primed' a motor by squirting gasoline from an oil can into the manifold or cylinder heads through petcocks.

"Not having to use the choke saves gas, I suppose," Selden suggested.

"Especially when you forget to push the choke in, as everybody does now and then," Gus replied, "And, of course, it saves time and trouble not to have to think about the choke."

"WHY doesn't that idea work just as well with low-grade gas in the tank?" Selden asked.

"The trouble is that low-grade gas doesn't vaporize very well in a cold motor," Gus replied. "If you pump the gas into the manifold in the way I suggested, the motor will kick over a few times and then die, unless you pull out the choke right away and keep it out until the motor warms up a bit so that the regular flow of gas will be vaporized enough."

"I'm going to try it," Selden smiled. "Have you any other good ideas you can give a poor salesman?"

"Sure," Gus grinned significantly, as he bent over and inspected a slight kink in the front bumper.

"Well, if you're going to tell me how to save wear on the bumper, spare my feelings, Gus," Selden chuckled, as he climbed behind the wheel. "The next time my front bumper gets bent, it'll be because somebody backs into me when I'm standing still!"

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