



GUS SPOTS SOME
**Tail-Light
 Troubles**

HE WAS a dried-up-looking little fellow who didn't stand over five feet four, but when he hopped out of an almost-new sedan outside the shop door of the Model Garage, one sunny spring morning, Gus Wilson saw that he was nursing a man-size grouch.

"Name's Barnstable!" he snapped, pulling off an old hat and running his bony fingers through his sparse gray hair. "Maybe you've heard tell of me."

Gus nodded. He had heard tell of Silas Barnstable, who, in boom days, cut up his farm into building lots, sold them for spot cash, and had been living on his money ever since—in an apartment house.

"Well, if you've heard tell of me, chances are you've heard I'm a grouch," Barnstable went on. "I'm not! But it makes me good and sore to be skinned. Just because a man is foresighted enough to have a few dollars laid away is no—What I mean is that when I pay for anything I want to get what I pay for, and when I don't get it I raise the devil! Understand, mister?"

"Sure, I understand," Gus told him. "But what's bothering you—we haven't skinned you, have we?"

"You haven't—yet," Barnstable admitted

"Here's half your trouble," said Gus Wilson. "Some one put an ordinary single-contact bulb into that double-contact socket."

grudgingly. "Maybe you will, though—every other garage around here has!"

Gus started to get mad, and then grinned instead. "What's bothering you?" he asked again.

Barnstable jerked a thumb at his sedan. "That's what's bothering me!" he yelled. "That dam' automobile! It's got the very devil in it! I've had it in every garage around here, and all they've done is take my money. Not a one of them has been able to find out what's the matter with it, let alone fix it, but they've all charged me plenty. Not a one of those fakes knows his business! Some one told me that you do. All right, mister. Go right ahead and prove it! You can't get my car fixed by standing there grinning at me!"

"Just for a starter," Gus suggested patiently, "suppose you take time out to tell me what's the matter with your car!"

"Matter with it!" Barnstable got redder in the face. "The matter is

that every time I step on the brake the dash light goes on! And that ain't the worst of it—not near the worst of it! Every time I pull the hand brake on, the horn honks! Makes a danged fool out of me!"

Gus had to laugh. "I'll see what I can do about it," he promised. "You come back about noon and—"

"Come back nothing!" the little fellow snarled. "I'm going to stay right here and make sure you do something for what you charge me. I've been stung often enough!"

"Suit yourself," Gus said tolerantly. "After all, it's your time you'll be wasting. Drive her in, will you?"

While Barnstable was driving her in, Gus went over to his workbench. He heard the loud toot of a horn behind him, and turned in time to see his irate customer climbing out of his car. "She honked again!" he shouted. "It's driving me crazy!"

Under Barnstable's angry and suspicious eye Gus went over the wiring thoroughly. Everything seemed all right, except that every time he pressed down on the brake pedal, the dash light flashed on and stayed on until he released the pressure. But, although he pulled on the emergency brake several times, he failed to produce one of

BY MARTIN

the horn honks that had so stable.

Gus thought things over with his pipe. "Well, ain't you going to look about it?" demanded the little fellow.

Gus grinned at him with his pipe lighted, went around the car, took out the tail-light, and examined it for a few seconds.

"Here's half your trouble," said Gus. "Some one has put a single-contact bulb into that double-contact socket. The result, the current back-tracks through your dash lamp whenever the tail-light circuit is closed by the foot brake. It will be all right as soon as you substitute a lamp of the right type."

He substituted a double-contact bulb. "There she is," he said. Barnstable stepped on the brake and the dash light didn't flash on.

"Guess you managed to fix it," he admitted grudgingly. "That danged horn-honking?"

"Pull your emergency brake," Gus told him. He watched in amazement as the man was so short that he had to stoop over his body around and reach up to the emergency-brake lever.



"Every time I pull the hand brake

BY MARTIN BUNN

the horn honks that had so enraged Barnstable.

Gus thought things over while he loaded a pipe. "Well, ain't you going to do anything about it?" demanded the little man.

Gus grinned at him without replying, lighted his pipe, went around to the back of the car, took out the tail-light lamp, and examined it for a few seconds.

"Here's half your trouble, anyhow," he said. "Some one has put a single-contact bulb into that double-contact socket. As a result, the current back-tracks and lights your dash lamp whenever the stop-light circuit is closed by the foot brake being applied. It will be all right as soon as I've put in a lamp of the right type."

He substituted a double-contact bulb. "Try her now," he said. Barnstable got into the car and stepped on the brake pedal. The dash light didn't flash on.

"Guess you managed to fix that part of it," he admitted grudgingly. "But how about that danged horn-honking?"

"Pull your emergency brake on again," Gus told him. He watched intently. The little man was so short that he had to twist his body around and reach wide to get hold of the emergency-brake lever. But he pulled

it on with an emphatic jerk, just the same. *Honk!*

"What did I tell you!" Barnstable yapped. "You ain't helped it a bit. Bad as ever! You automobile fellows are all alike. I swear I'll—"

Gus was laughing. "Take it easy!" he advised. "Don't you see what happens every time you pull on that hand brake? You're a little bit—quite a little bit—shorter than the average driver. When you reach over to get hold of that brake lever, you have to twist and stretch your body around so far that the front of your left shoulder comes down on the horn ring and blows the horn!"

It took him ten minutes of patient argument and demonstration to convince Barnstable that it was his own contortions that caused the horn-tooting whenever he put on his emergency brake. At last, the little man gave in with a sour smile. "Well, how much do I owe you? You ain't done much!" was all he said.

"You owe me just for the new tail-light bulb," Gus told him. "Whenever I get a good laugh out of a job. I take something off the bill!"

"That's reasonable," Barnstable conceded. "Yes, sir, I call that fair." He handed over the money and got into his car. I'll send you some business, if I get a chance, maybe."

"'Maybe' is right," Gus chuckled to himself



"Every time I pull the hand brake on, the horn honks," snarled Barnstable. "Makes a danged fool out of me."

as the customer drove away. "That old codger couldn't say a good word for anybody."

Several days later, however, as Gus and his partner, Joe Clark, were getting ready to close up for the night, Gus's doubts about the old codger were given a setback.

"Sorry to bother you so late," came a voice at the office door as a young man who had driven his car up in front of the garage stepped in unexpectedly. "Old geezer named Barnstable—lives in my apartment—sent me here. Said you could fix my car if anyone could."

"Barnstable!" exploded Gus, in amazement. "He said that? Well I'll be . . . !" Gus's face broke into a broad grin.

"The shop's really closed," he said, "but we're always glad to oblige. I'm Gus Wilson. What seems to be the trouble?"

"I'll have to do a little explaining," the newcomer said, and Joe

motioned him to a chair. "My name's Hubbard. I'm a salesman, and I travel this part of the state in my car. As I have to be on my way pretty early most mornings, and there's no garage at all handy to the Hillcrest Court Apartment, where I live, I park the car at night on the street at the side of the apartment house. Probably you know it. It has a pretty steep grade, and even late at night there's quite a lot of traffic on it. That means I have to pull my hand brake on hard, and leave my cowl and tail lights burning all night.

"This evening I took my wife to the movies. When we got home about an hour ago, I let her out at the main entrance, and then drove around to the side street and parked my car as usual. But when I turned off the ignition switch, the engine kept right on running!

"I've been driving long enough to know a little something about cars, and I fussed around for quite a while trying to find a way of turning off that engine. Before I got through I found two ways of stopping it—but neither of them was any good to me.

"If I left the lights on and released the hand brake, the engine would stop. But the grade is so steep on that side street that I didn't dare just put the car in gear and, without the hand brake on, trust that it wouldn't start rolling.

"I also found that the engine stopped when I turned the lights off. But parking a car all night without lights in this town means

a sure ticket in the morning, and a half day wasted in court and, probably, a five-dollar fine. Anyhow, I figured that there must be a short circuit somewhere in the wiring and that, if I left the car stand overnight without getting it fixed, I'd be sure to run down the battery.

"While I was wondering what the deuce to do about it, old Barnstable came along, asked some fool questions, and then told me about your garage. So here I am. Think that you can help me out?"

"We can try, anyhow," Gus said. He walked over to the window, looked out, and with a glance identified the make and model of Hubbard's car. Then he strolled back to his chair, sat down, and began puffing at his pipe. Gus carries around in his head a set of mental diagrams of the wiring systems of all the cars that are built in Amer-

ica, and sometimes it takes him as much as a minute to sort out the one he wants. Hubbard stared at him, but, before he could ask a question, Gus began to make his diagnosis.

"On your car," he said, "and on lots of other cars, the hand brake operates the stop-light switch. The stop-light circuit is connected to the battery at the ignition switch—the wire to the coil and the wire to the stop-light switch are fastened to the same post on the back of the ignition switch. The reason that your engine continues to run after you've turned off the ignition, while your hand brake is on and your lights are burning, must be that current is feeding into the ignition system through the lighting system. The stop-light switch must have something to do with the trouble, because it's operated by the hand brake.

"Let's see now—your combination tail and stop light has a two-filament lamp, and your stop-light switch connects the lighting circuit to the ignition coil. So, Mr. Hubbard, your mysterious trouble must be in the tail-light lamp."

"Ignition trouble in a tail lamp! That's a new one on me!" said Joe Clark. Hubbard was beginning to look as if he felt decidedly doubtful that he had come to the right place.

"Trouble is where you find it," Gus said placidly. "I'll tell you what must be happening. The lighting current must be traveling through the filament of the tail-light bulb, through the filament of the stop-light bulb, through the stop- (Continued on page 232)

GUS SAYS:

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Some Tail-light Troubles

(Continued from page 140)

light switch and wire up to the coil side of the ignition switch, and through the coil and points to ground. By doing that it provides enough ignition current to keep the engine running after the switch has been turned."

"But why," demanded Hubbard doubtfully, "has the lighting current just begun to do that? I've never had any trouble of this sort before."

"Normally," Gus explained, "the lighting current grounds at the tail lamp. But it isn't grounding there now. Something—some little thing, in all probability—has happened that prevents it from grounding." He got up and switched on the shop lights. "If you'll just drive your car into the shop, Mr. Hubbard," he suggested, "I'll have the trouble cured in ten minutes."

Hubbard drove in. Without even glancing at anything else, Gus examined the tail lamp. Then he nodded.

"The bolts that hold the lamp to the bracket have shaken loose," he said, "and the bracket itself is very dirty. The lighting current can't ground. That's the full extent of your trouble."

He cleaned the bracket, and tightened the bolts. "Now try her," he said.

Hubbard started his engine, turned on the lights, applied his hand brake hard, and switched off the engine.

The engine stopped.

"Now it's all right," Gus said. "The lighting current is grounding through the lamp bracket, as it should, instead of going on to the coil. You won't have any more trouble, Mr. Hubbard."

"If I do," said Hubbard, "I know where I'll come with it!"

"Queer, wasn't it?" Gus said when Hubbard had left. "We haven't had a job in which a tail light was causing the trouble in two or three years, and now we get two of them in one week."

"More important," Joe said, "we get two new customers."

Gus grinned. "How much a year do you figure," he inquired, "we'll make out of old Barnstable?"

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