GUS gives some pointers on... 

Hunting Squeaks and Rattles

By MARTIN BUNN

GUS WILSON’S huge fists span the steering wheel and the Model Garage service car, homeward bound, swung around in the loose sand at the foot of Stepe’s Hill and started the long grind to the top.

“What makes these birds always break down in such out-of-the-way places?” Gus grumbled. “They might at least pick some place better than these deserted hills!”

Joe Clark, his partner in the operation of the Model Garage, merely grunted and pulled his cap lower over his grease-stained face.

“The next call we get from out here,” Gus rumbled on, “I’m going to— The rest of his remark was drowned in a rasping cough from the service-car motor, followed by a bucking that ended in a stall. Gus slammed on the emergency brake and leaned back with a grin on his face as he pulled out his pipe and started to fill it.

“Well? What’s the matter now?” snapped Joe. “Dinner is waiting and I’m hungry. Let’s get at the trouble.”

“There’s nothing to get at,” Gus chuckled. “We’re just out of gas! I forgot to take a look before we started out. Nearest gas station is about three miles down the road. If you want to ‘get at’ something, try bending a bit of shoe leather in that direction. Danged if I will. I’d rather wait here for a car. Jack Sisson goes by here every day on his way home from work. He ought to be along any minute now.”

“That’s like you, Gus,” Joe smiled sheepishly. “Taking the blame when you know it’s my job to see that this bus has gas in it. All right, if Jack doesn’t show up in the next five minutes I’ll start.”

However, Joe was saved the trouble, for Sisson came along a few minutes later.

“Now,” said Gus after the gas had been transferred, “Joe, you take the service car and beat it straight home before your missus gets out the rolling pin. Jack’ll give me a lift as far as the garage.”

“Glad to do that, Gus,” Sisson offered at once. “And maybe you can spot which valve stem is making the infernal squeak I’ve been hearing.”

Gus listened intently as Sisson started the car and drove it at various speeds. No noise was apparent at high speed, but when the car was running slowly, there was a pronounced squeak that seemed to keep time with the revolutions of the motor.

“It’s going to be a cinch to fix that,” Gus grunted, as they pulled in at the Model Garage. He lifted the hood, wiped a bit of grease from the steering-gear housing and touched it to the V surfaces of the fan belt. The squeak stopped almost instantly.

“A brand-new, bone-dry belt will sometimes do that,” Gus explained. “It depends on the condition of the pulley surfaces.”

“Gosh!” exclaimed Sisson. “As easy as that? Eh! I wish it was as simple to spot the cause of other noises. You know, I’m a bug on trying to get rid of ’em.”

“Lots of fellows are like that, these days,” Gus agreed. “If you want to get rid of noises in your car, the main things you need are a whale of a lot of patience and a nice long screw driver.”

Sisson laughed. “Sure, you need patience—but what’s the screw driver for? To tighten everything so it can’t squeak?”

“There’ll be times when you’ll use it that way, but the principal use will be as a sort of doctor’s stethoscope to help you locate just where the noises are coming from. Trouble is, so many noises sound like they are something else. Like this squeaking belt. You thought it was a valve stem binding. If you had held the end of the screw driver against the cylinder casting at different points near the valves, with the handle end cupped in your fist against your ear, you’d have heard the squeak at all—which would have been pretty good proof that it wasn’t a valve.”

“Take a loose plate in the muffler,” Gus went on. “That often rattles in such a way that it sounds just like a hose connecting rod. If you listened around with a screw driver a while, you’d hardly hear any trace of a leak from any part of the motor, but as soon as you started on the exhaust pipe you’d hear it—and I don’t mean maybe!”

“I’ve heard of that screw-driver stunt,” Sisson observed, “but I never could make much out of it. I’ve tried it several times, and all I hear is a jumble of noises loud enough to break your eardrum.”

“That’s because you don’t hold the screw driver right,” Gus asserted. “When you poke the end of a screw driver against any metal or wood part of the car, the vibrations that are traveling through the material shoot (Continued on page 126)
GUS TELLS HOW TO HUNT SQUEAKS AND RATTLERS
(Continued from page 50)
right up the screw-driver blade, and you'll find them and have them close to your ear for a better chance. If the noises you hear sound like bedlam let loose, naturally, you won't be able to pick out any one sound, so the answer is to slide the screw-driver handle under your ear and listen just like this," Gus demonstrated, "squeezing tighter to close the air passage from the end of the screw-driver handle to your ear and the sound is just strong enough for you to hear.

"Sort of a one-fist volume control, eh? I should have thought of that," Sisson commented, as he tried the stunt with the screw driver in his own hand.

"THAT'S the idea," said Gus. "But knowing how to use the screw driver is only a part of the job. The rest is where the patience comes in. The whole trouble with finding those darned noises is that most of the time they don't sound like what they are, and they always seem to come from where they aren't. That's because any noise is the result of a vibration and you can't hear it till the vibration has been put on the air so it can get to your ear. Now, the actual vibration nearly always occurs inside somewhere, and the direction it takes in coming out through the metal parts depends on how easily they vibrate. That's where the screw driver helps, because it picks the right side out of the metal and carries it directly to your ear."

Sounds all right, but how does it work out?" Sisson asked.

"I'll show you," said Gus, reaching for the screw driver. "Did you notice that funny little bumping noise that seemed to come from the door latch?"

"Notice it?" exclaimed Sisson. "I've spent hours trying to get that latch to stop thumping like that. I've got it so tight now you can hardly get the door open."

The bumping that Gus had noticed occurred irregularly when the car was in motion, and also while it was standing still at certain motor speeds. Sisson worked the throttle up and down while Gus listened with the screw driver, first all around the latch, then at different points on the door, and finally at a number of points near its upper edge above the hinge.

"Must be right in here," Gus muttered, swinging the door open. "Yes, here it is. See that shiny spot on the door frame, and this bright spot on the door right where it closes on it? The latch buffers were set a little too tight in the first place, so the door was springing over just enough to cause a metal-to-metal bumping right there. Tightening the latch buffers just made things worse."

"Well, it's a relief to find it at last, even if you do prove I'm dumb," grinned Sisson. "Now let me listen to see if I've got the hang of it."

"GO TO it," Gus suggested, handing over the screw driver again. "You'll hear the thump at any point on the door, of course, and ask yourself why. I'll tell you also. Look for it."

"If that had been a loose body bolt or a bad rubber mounting," Gus explained, "it might have moved away from the door, or even the roof of the car, or any other place at any distance from the actual source of the noise; but when you get the screw driver, you can soon get the trouble pretty well localized, and then it's just a matter of investigating everything in that area and where what is rattling. After all, finding exactly (Continued on page 127)
GUS TELLS HOW TO HUNT SQUEAKS AND RATTLES
(Continued from page 125)

where the noise starts is the hardest part of the job. Fixing it is the easy part.

"Of course," Gus went on, as he worked on the door, "there's lots of queer noises you may hear in a car that a screw driver won't help you locate except to tell you where they aren't. Take a loose manifold bolt that lets gas escape in a sort of grinding squeak—it sometimes sounds mighty like what you'd hear if a piston ring was broken and jamming a little. Touching the cylinder wall just below the edge of the water-jacketed part with the end of the screw driver would bring such a piston-ring noise to your ear good and loud. If you didn't hear it on any cylinder, that would be finding where it was. Then it would be a case of spotting the leaky gasket by sight, or actually feeling the blast of gas as it escaped from the manifold.

"SOMETIMES, a spark plug cracks or develops a gas leak in such a way that it makes a hissing noise like the hiss you get when your hose has to be left slowly and the rings on one piston are broken. That's another case where the screw driver would tell you it couldn't be broken rings."

"In other words, the screw driver is no divine rod," laughed Sisson. "It's just a sort of extension ear."

"That's it, exactly," Gus went on. "You've got to use your eyes, and plenty of common sense, as well as your ears and patience in finding car noises. And some aren't worth fixing when you find 'em. Fellows come in here yelling that there's a squeak in the generator bearings. They don't know that a generator commute rotor brush can cause an annoying squeak that sounds just like a dry bearing. The best thing to do about a commutator squeak is to forget it; it's most likely to go away in a little while, anyhow."

Another fellow came barging in here the other day and wanted to buy enough rubber hose to renew the windshield-wiper line because he said the wiper wouldn't work and he could hear the hiss of a leak in the pipe. He insisted all right, but when I pulled off the hose at the windshield wiper and held my thumb on the end of it, the hiss disappeared, proving that it wasn't the hose. The real trouble was in the wiper itself."

"That might have fooled me too," Sisson admitted. "Well, some day I suppose they'll get around to the point where they can make really silent cars."

"Humph!" snorted Gus, disgustedly. "You want a silent car, eh? By golly, there's no satisfying you youngsters! If the modern car wasn't so darn near completely quiet you'd never even hear any of the little mouse squeaks and trilling rattles that get your goat now. You'd appreciate how quiet the modern car really is if you had driven one of the threshing machines they sold for cars in the old days. Believe me, it had to be a man-size rattler or squealer to be heard above the general rumble and roar of those oldtimers. But, even in those days, noises didn't always mean what they sounded like.

"I remember taking a ride one night with a fellow who'd had some trouble with the front-wheel bearings going dry and squeaking—they were plain buggy-wheel bearings, not ball bearings—and as we rounded a bend in the road his ears caught the shrill squeal that meant a dry front-wheel bearing to him. He slammed on the brakes, and we came to a stop, but the squeal went right on. It was a combined concert from the crickets, katydids, and frogs in the brush of woods that bordered the road, and if there's anything that sounds more like a squeaking bearing, I don't know what it is!"

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