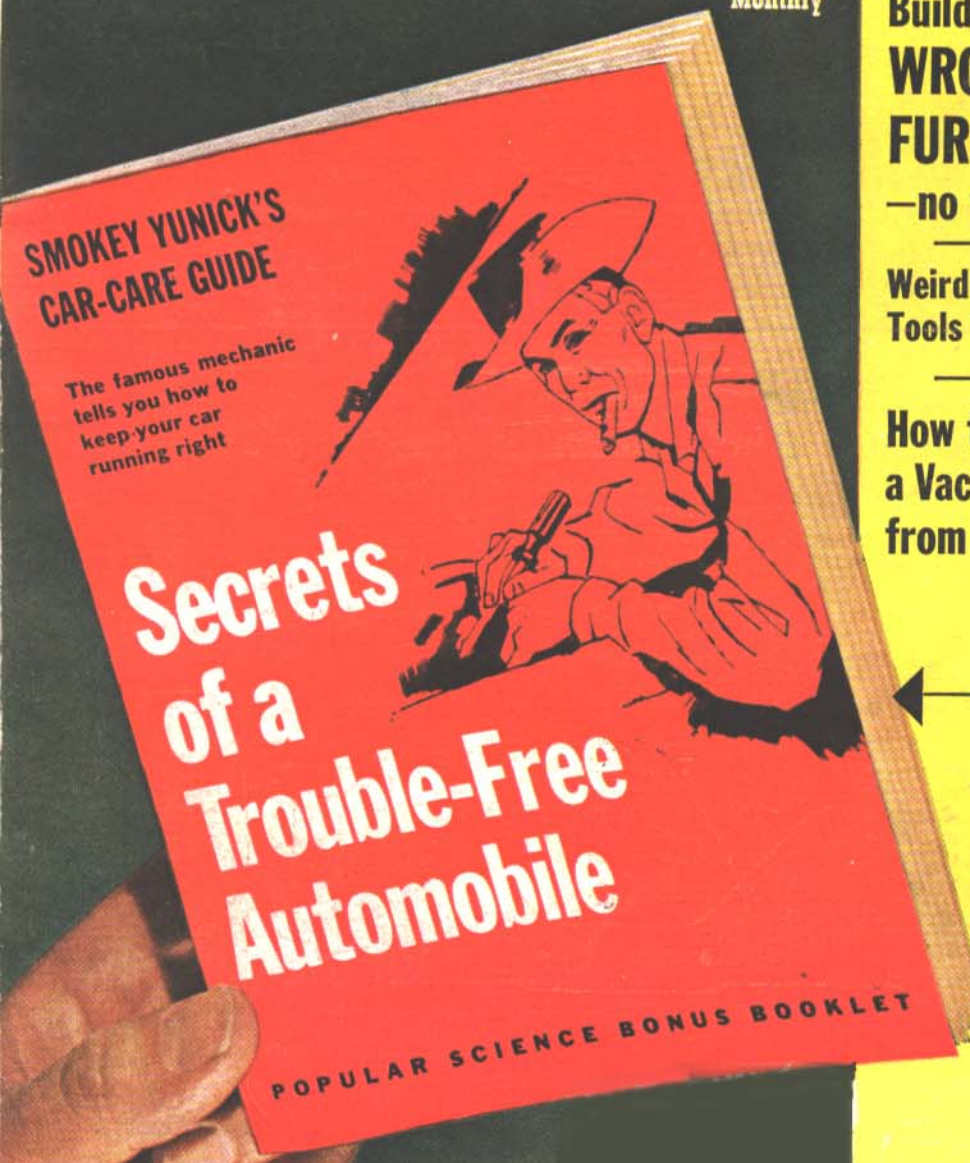
JUNE 1965 35 CENTS

Popular Science

Monthly



SUDDENLY PICKUP TRUCKS ARE "IN"
PS tests Ford, Chevy, Dodge

Build your own WROUGHT-IRON FURNITURE
—no welding

Weird and Wonderful Tools You Can Rent

How to Buy a Vacation Site from Uncle Sam

BONUS:
TEAR-OUT BOOKLET
for Your Glove Compartment
BY SMOKEY YUNICK

A big sedan rolled in from the parkway, steam swirling from under the radiator. "Don't go away!" yelled the driver.

Gus Stops a Runaway

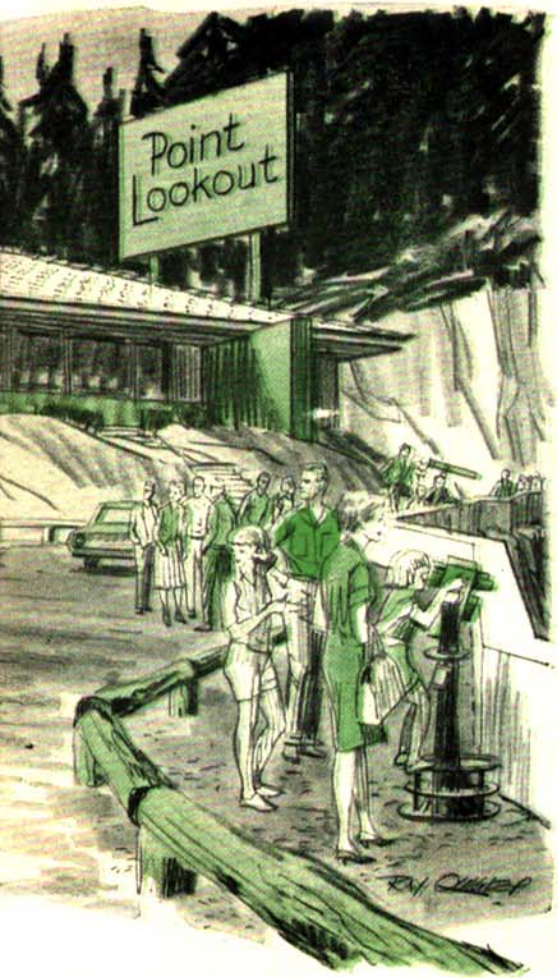
Gus wasn't a cop or a psychiatrist, but he knew right away that the teen-age couple had a worse problem than a stalled engine

LOOKOUT Number Two was, as the voice on the phone had said, about seven miles south. Gus Wilson swung his Model Garage tow truck off the scenic parkway where rustic buildings housed a snack shop, phone booths, and rest rooms. A parking area afforded a fine view of the river.

Only four cars were there this weekday forenoon. Stopping behind a 1964 Oldsmobile, Gus got out. The car was occupied by a disconsolate-looking teen-age girl, and a heavy Watusi beat came from the radio. A dark-haired youth suddenly appeared from behind the upswung hood.

"Gee, am I glad you got here. There's gas—you can smell it—but no spark." He broke off to look anxiously toward the parkway exit. "We're in an awful hurry."

There was a faint odor of raw gas. Gus lifted off the distributor cap and, by shorting the starter terminals, turned the



Car

By Martin Bunn

engine over to close the ignition points. Removing the main high-voltage cable from the center tower of the distributor, he placed its end near the distributor rim.

Then he walked around to turn on the ignition. To his surprise, it was already on. The girl stared at him bleakly. Gus returned to the engine and, with a screwdriver, repeatedly flicked the movable ignition point away from the other.

No spark resulted, either between the points or at the cable end. Again Gus turned the engine over, this time leaving the points open. Pressing the screwdriver against the movable point arm, he scratched the distributor plate with the bit end.

Small yellow sparks flashed. White fire crackled between the end of the cable and the distributor rim. Gus shut off the ignition, turning the key to the accessory position so that the radio kept playing. Then he removed the points. Their contact surfaces were a steely blue.

"Your points are burned," he said.

An exclamation escaped the young man. "That's the fourth time on this car—wouldn't it have to happen just when we're . . ." He stopped, and once more scanned the exits uneasily.

"It happened," said Gus, "because the key was left in the run position to play the radio. Do that long enough with the engine not running, and the points are sure to burn."

The boy groaned. "She must have done that while I was getting us something to eat on the road. She always does that, but this time I never noticed. Too excited . . ."

His voice trailed off. It seemed even younger when he spoke again. "Can you put in new points? We've got to get away . . ."

Gus shook his head. "I don't carry points for every car on the road. What're you running from, son? In trouble?"

The boy glared at him; then the fire died out of his eyes. "We're going south to get married. Everything's against us here—our folks, and the state law that says you have to wait three days. But we'll do it! I'm quitting college to get a job."

"This your car?" asked Gus gently.

The young man pulled out a wallet and handed over a registration slip. The address was a town 20 miles north of Gus's. "It's my Dad's car. He hasn't reported it stolen, has he? We *were* coming back."

"I'm not a cop," said Gus. "And your father's probably worried about a lot more than his car. Running away with a borrowed car and a few dollars isn't much of a start for a marriage, is it?"

"Nancy wants to go back now, anyway," muttered the lad. "That is, since this happened. She thinks it's sort of an omen."

With a fine file, Gus began cleaning the blued points. "I can dress these enough to get you rolling," he said. "But you need a new set. And a brown ignition coil instead of this black one."

"What difference does the color make?"

"The black coil is an older type. In 1964,

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Olds went to a coil with a higher primary resistance, in a brown casing. This black coil is an assembly-line blooper. It draws too much current even in the 'run' position. That burns points fast.

"When your girl turned on the ignition to play the radio, without starting the engine, the steady current overheated the points even more than the regular make-and-break ignition juice. Probably they were partly burned already. That finished them. With a brown coil, your points will last."

Gus inspected the filed points, put them back, turned the engine to get the rubbing block on a high point of the cam, and set the gap. The car started briskly. He watched anxiously as the Olds backed out and swung toward the exits. He let out a sigh of relief when he saw that it headed into the northbound one.

With what Gus later realized was fantastic timing, a big sedan rolled in from the southbound side of the parkway hardly a minute later. The driver headed straight for Gus's tow truck.

"Don't go away!" he yelled.

Steam was swirling from under the radiator, and when Gus strolled over he could hear the engine knocking before the driver shut it off. A stocky, round-faced man, with a bristle of unshaved beard over his open collar, got out, scowling.

"Seen anything of a '64 Olds with a teen-age boy and girl in it?" he demanded.

"They just drove out," said Gus.

The man swung back to his car, then turned to Gus.

"It's no good—it's overheating so badly I can't go any farther. I stopped here for water—it's the second time. Think you can do anything in a hurry?"

A balloon of heat welled up as Gus opened the hood. The engine reeked of hot metal and oil. With a rag, Gus cautiously turned the radiator cap. Steam hissed out; only when the pressure had died down did he remove the cap.

No water was in sight. But there were no rust traces of leakage. The fan belt was clean and well tensioned; the radiator core was free of dirt, and so was its lower section, which cooled the automatic-transmission fluid. Gus checked the dipstick; it showed enough oil, with no water droplets in it to suggest a bad head gasket or a cracked block.

On inspecting the cap, Gus thought its spring felt weaker than usual. From his truck he brought a pressure cap of the proper rating and a water can.

"Had any radiator leaks repaired?"

The stocky man shook his head.

"They gave you a low-pressure, seven-pound cap," explained Gus. "That's the kind often used after a radiator's been patched, or is so corroded it won't stand normal pressure. But it opened at a lower temperature, so when the engine reached that, it lost water. Once that happened, the engine overheated even more."

The man shook his head. "Only had that cap two weeks. I was on a long trip and noticed the engine ran warm, so I had the system flushed. They recommended a new thermostat, hoses, and the cap. It ran a little cooler, but still warmer than usual even on local trips—I didn't make any long ones. Today it kicked the top out of the gauge—just when I'm in a hurry to keep those kids from making fools of themselves."

Gus started the engine and began putting a slow trickle of water into the radiator. "They looked like sensible youngsters to me," he said.

"Sensible? You know the odds against teen-age marriages? When I get my daughter home I'll whale the daylights out of

Tokyo measures traffic noise

Attempting to make motorists noise conscious, Tokyo has hung a microphone and flashing sign over one of its busiest intersections. Noise picked up by the mike is translated to phons, or units of loudness, which are flashed constantly.

Standard sound level for residential areas is 50 phons, for busy streets 70. The legend under the number so informs drivers, and asks for quiet.

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her . . ." He broke off, spluttering angrily.

"Suppose she's home when you get back," said Gus. "Would you still lick her?"

The man grinned weakly. "Never have yet. It's just worry talking. Can't you hurry that up?"

"Might crack the hot block if I did," warned Gus. He added water slowly. The engine ticked over quietly, not knocking.

"Okay," said Gus, putting on the new radiator cap. "This cap will hold more pressure, so the engine can run somewhat warmer before water boils off. Better slow down a bit, though. It would be smart to find out why your engine began heating up in the first place. I have an idea . . ."

"Never mind that now," Gus was interrupted. "What do I owe you? I'm heading south as fast as this car will go."

"In that case," said Gus with a grin as he made change, "you'll be a long time catching up with those two. When they left here, they headed north."

"There's a man here who says he has to see you, Boss," said Stan Hicks as Gus was doing some work in the Model Garage office two hours later.

Gus wasn't surprised to find the big sedan in the shop. The stocky man, now shaven and neatly dressed, grinned at him sheepishly, but obviously calm.

"She *was* home before me," he said. "That young fellow is more man than I thought. They still plan to marry, but only after he graduates and has his first job, and they've saved some money."

"I thought they were sensible," remarked Gus. "How did the car behave with that new cap I put on it?"

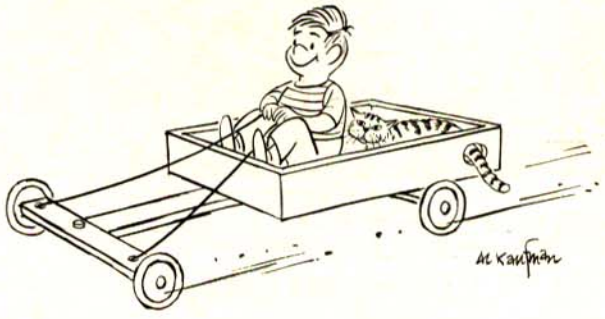
"Ran warm but not hot. Got time to take a look at it now?"

Nodding, Gus opened the hood. Little water had been lost. He took a sample in a hydrometer; it showed traces of sealer, but no transmission fluid, as it would if there were a leak between the two sections of the radiator. Gus fitted a pressure pump to the filler neck, pumped it up to 15 pounds, and waited. The gauge held steady.

"Exhaust gases getting into the cooling water will overheat an engine," he said, removing the pump. "But your system's tight. Before I check that new thermostat, maybe I'd better test-drive the car."

Gus started the engine and put the automatic transmission into Drive. There was a noticeable hesitation before the car began to move. Outside, he stepped on the gas. Pickup was poor. On a hill, speed dropped until the transmission made a far-from-smooth downshift. He drove back into the shop, and cautiously touched the transmission case. It was hot. Using a rag, he withdrew the dipstick. The fluid level was low.

"There's the real reason your engine overheated. You must have felt how sluggish the car was, but probably you blamed that on the overheating. Actually, it was your transmission that overheated the engine.



"The transmission fluid transmits all power to your wheels. When the fluid is too low, it foams, can't transmit full power, and gets much too hot. That overloads the oil cooler under your radiator. Some of the extra heat reaches the engine-cooling water above, so your engine runs hot, too."

Filling the transmission to the proper level, Gus again drove the car out. It took hold at once, accelerated briskly. Satisfied, he returned to the shop.

"That was it," he announced. "Just keep the fluid level checked."

Thoughtfully the stocky man paid the bill. "Who'd think a transmission could make an engine overheat?" he murmured.

"Who'd expect a wrong ignition coil to stall an elopement?" countered Gus.

The man looked at him shrewdly. "Heard about that. But I've got a feeling you had something to do with it, too. Thanks."

"Not me," said Gus. "Only way you can thank anybody for that is to write a fan letter to Detroit." ■ ■