

JULY 1963 35 CENTS

# Popular Science

What Will the  
'64 Cars  
Be Like?

Monthly

"Camping Out"  
at 100 Fathoms

How Ed Link's  
Divers Live  
Beneath the Sea

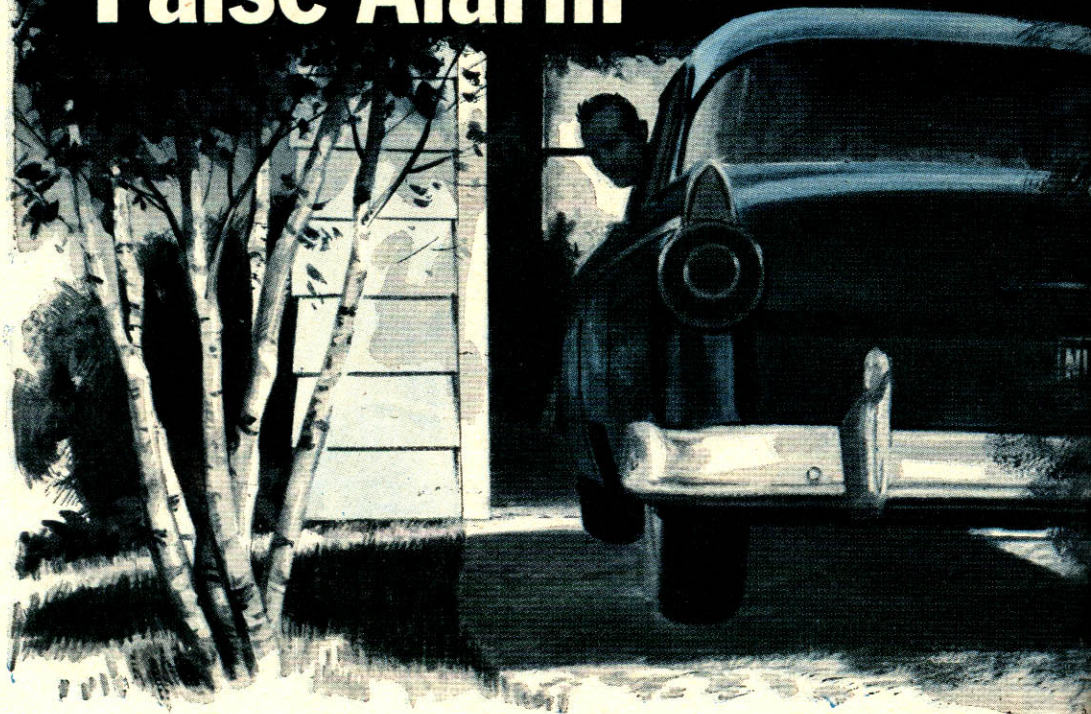
How to  
keep cool  
—in your house  
—in your car

Exciting \$3.95  
Book Digest

When Uncle Sam Played  
**DEADLY GADGETS OF THE OSS**

Werner von Braun talks  
about travel to the stars

# Gus Answers a False Alarm



*As Flynn backed out, the rear of the car was engulfed in a huge cloud of smoke.*

**By Martin Bunn**

GUS had just started walking away from his rooming house to open the Model Garage when a bright-red hardtop zipped to the curb and stopped with a blare of the horn. The window slid down to show the red face of the town's fire chief, Mal Maloney.

"Answering an early call?" asked Gus.

"Trying to stop one from coming in," grunted Maloney around his cigar. "Come on, Gus. Get in."

Mystified, Gus entered. The car roared away. "Where is this no-alarm fire you're in such a hurry to get to?"

The chief savagely bit his cigar. "Monday we got a call from a woman on Eucalyptus Street reporting a garage fire. Time we got there the garage was empty, the car

gone. Yesterday morning another woman called. She swore heavy black smoke was pouring out of that same garage.

"This time I got there in time to block the driveway just as the fellow was pulling out. His car was smoking like Vesuvius. I gave him the devil."

"What for?" asked Gus innocently.

"What for!" roared Maloney angrily. "Because nobody but nobody has a right to cause two false alarms in two days. Okay—I know he didn't turn them in. But his car caused them.

"He says it's been smoking like that every morning when he starts it up, for nearly a week. Now this I want to see. So I threatened him with the regulations—didn't say which ones because I'm not sure myself—if he starts that car before you and I get there."



For a time the chief drove in silence, lips clamped over his soggy cigar. "Sorry if this makes you late opening, but it's important," he finally said. "Can't have false alarms, or ask the neighbors to ignore that sort of thing."

"Sure, Mal. And don't worry about the shop," said Gus. "Stan will be there by now."

*Maloney zoomed to the curb* on a pleasant residential street. As he and Gus walked toward the house, a worried-looking, middle-aged man came out. He wore a checked jacket and denims that hung loosely.

"This is Mr. Flynn," said Maloney. "Gus Wilson's our car expert, Mr. Flynn. Let's go look at yours."

"It smokes only when you start it?" asked Gus as they walked to the garage.

Flynn nodded nervously. "But it stops after I've driven a few blocks. Then it behaves. It smokes again when I start home from work, but not so much."

He opened the garage door, revealing a 1956 Ford sedan.

"Don't start it until I say so," requested Gus, opening the hood.

For its age, the V-8 engine was fairly clean. There was no sign of oil leakage, no oil-burn stains on the exhaust manifolds. Noting that the car had dual exhausts, Gus wedged the heat-control valve in the open or hot position, which would channel the exhaust from each cylinder bank to its own muffler.

He closed the hood, walked out of the garage to where he could observe both tailpipes, and signaled to Flynn. The engine caught at once.

Immediately the rear of the car was engulfed in a huge cloud of blue-black smoke. Sounding the horn, Flynn backed cautiously out. When he stopped in the driveway, the engine was still belching smoke—all of it, Gus noted, from the right-hand tailpipe.

"Can't blame those women for turning in those alarms," grunted Maloney. "Somebody'd probably do it again if the car were in the garage."

He walked up to Flynn. "Okay, I've seen enough. You get this crate fixed or I'll slap a ticket on you. Think you can help, Gus?"

Gus nodded. "If you want to run, Mal, I guess Mr. Flynn will give me a lift back to the Model Garage."

The chief nodded, strode back to his car. A raucous radio voice spoke briefly from it as it pulled away.

"I don't know what else to do," began Flynn. "Can't afford a new car, or even a ring job, just now. That's what the mechanic said it needed."

"You said 'what else,'" remarked Gus. "Just what has been done, and why?"

"The car had no pep. Compression was poor on three or four cylinders. The mechanic said I might try adding tune-up solvent to loosen carbon and free any stuck rings. I did, and the engine ran better. Then this smoking began. I was on the early shift last week, leaving before daylight, so nobody saw it. Monday I went on the late shift, and neighbors spotted the smoke. The car's using way more oil than it did, too."

Gus freed the heat-riser valve, then looked at the oil on the dipstick. It was black with dirt.

"Change your oil often?"

"Mm—not as often as I should, I guess," returned Flynn. "But I only make short trips to work and back."

Gus grunted. Short trips are what over-work engine oil most.

"I need some tools," he said. "Suppose

we drive to my shop. Things are handier."

They were halfway there when Flynn swung into a gas station. "Mind if we stop a minute? When I wasn't sure I could use my car, I called a friend to ask for a lift to the plant. He's getting his oil changed here. I'll ask him to stop at your place just in case."

A short, round-faced man wearing work clothes and a sour expression was arguing with the gas-station attendant. Seeing Flynn, he rushed over.

"Good thing you came," he burst out. "Looks like I'll be asking you for a ride instead. This kid's done something to my car. I have to call a garage for a tow."

Flynn shook his head dolefully. "That's tough. Mr. Wilson here is a garageman. I'm on my way to his shop with my car now."

The short man bobbed his head. "My name's Sutton. That's my Chevy on the lift. It's got the 283-cubic-inch engine. Lucky thing I stuck around and checked the oil-pressure light after he changed the oil. It won't go out."

The gas jockey, a lad just out of his teens, nodded glumly. "That's right, but I put back the drain plug and the new oil's right up to the dipstick mark. It ain't my fault that light stays on. Maybe it's shorted."

"There's no oil pressure. That could ruin my engine!" snapped Sutton.

"How long did the crankcase drain?" Gus asked the attendant.

"Well, there was a rush at the pumps just then. Maybe 15 minutes."

"So what?" demanded Sutton. "You willing to tow my car to your shop?"

"If it's necessary," returned Gus. "Put a floor jack under the front of the car," he told the boy, "and raise it about six inches."

While the puzzled attendant did so, Gus and the other two men walked over. Slowly

### Where'd it come from?



### "Well-heeled"

When heels first came into vogue, they were considered a mark of nobility, and not allowed on the shoes of peasants or workmen. From this came the expression, "well-heeled."

the car lifted, to assume a nose-up slant.

"Try the engine now," said Gus.

"But we did, three times," protested Sutton. "What difference—oh, okay."

Reluctantly he got in and switched on the engine, which caught at once.

"The light's still on! Gotta stop . . ."

Gus held his hand just as Sutton was about to shut off the engine. An instant later the indicator light went out.

"Hey, it—how come?" spluttered the short man. "What did you do?"

"On this 283-inch Chevy engine," Gus explained, "long draining can empty the pump, making it lose its prime. It then spins in air and can't lift oil. Raising the front end tilts the oil level back to the pump so it can pick up its prime again. No sweat."

"Not when you know," murmured the gas jockey. "I'm glad you turned up."

"So am I," agreed Sutton. "I'll go along to see if Flynn needs that ride."

Stan had opened up and was at work when Gus and Flynn drove up to the Model Garage, followed by Sutton. Gus at once checked the plugs in the right cylinder bank of Flynn's car.

The first two plugs, though old, were fairly clean. The rear two were badly oil-fouled. Gus cleaned and replaced them. Then, as Flynn and Sutton watched, he loosened the valve cover.

Oil gushed out even before he raised it. The valve mechanism was thick with sludge. Wiping away what he could, Gus probed for the oil-drain holes in the head, ran a wire through them, and finished with a spurt of air.

"The engine's dirty from over-age oil and short runs," Gus told Flynn as he replaced the valve cover. "The oil passages to the rocker arms were at least partly clogged, cutting down the oil supply. The drain holes were plugged too. Then you added tune-up solvent to the engine oil. Being under pressure in the supply passages, it opened them. More oil came up. But there was no pressure to clean out the drain holes.

"With more oil coming in but not much draining out, the valve chamber filled up above the top of the valve guides of the two rear cylinders. This didn't show in driving. But overnight, oil would seep through the guides into the cylinders and exhaust manifold. By morning there was enough of it to lay a smoke screen when you started the engine."

"And when that burned away the car quit smoking?" asked Flynn.

"Sure, until it stood idle long enough for more oil to seep in," said Gus. "It won't smoke now, but you should have the engine thoroughly cleaned soon."

"If you can do it today, I'll leave the car now," said Flynn, and when Gus agreed, turned to Sutton. "I'll take that ride to work now."

A bright-red hardtop rolled into the Model Garage later that afternoon.

"Where's that car wrecker who thinks he's a mechanic?" demanded Maloney.

Gus emerged from the office to grin at the red-faced fire chief.

"Well, we've taken care of the false-alarm department," he said genially. "That's kept us pretty busy."

"Then I'm not going to get any more false

alarms coming in from Eucalyptus Street?"

"Guess not," returned Gus. "There's Flynn's car. It won't smoke up the neighborhood any more."

Maloney grunted. "Thanks for the assist, Gus. You may have saved the department some useless calls."

"Hey Chief," called Stan from underneath the grease rack. "Gus handled another false alarm at the Ace Service Station, too. All by himself."

"Oh, yeah?" asked Maloney suspiciously. "It was a different kind of fire," remarked Stan.

"Uh-huh," chuckled Gus. "It sure wasn't your kind. Only thing to worry about there was a car owner who was burning up. And you know how we put it out? By pouring oil on it!"

### PS Puzzler



You can look into this barrel, but it's pretty dark and you can't quite tell whether the water level is below, just on, or slightly above the halfway point. Can you settle the problem without any props?

Answer on page 163