

OCTOBER 1968 50 CENTS

# Popular Science

MONTHLY

## Annual Auto Issue **1969 CARS** **IN FULL COLOR**

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Everything You Need to Know About the

# BATTERY

## FOR YOUR CAR



# Gus and the Case of the Councilman's Car



**Gus was about to lose a lucrative contract unless he could prove the Model Garage was still the best in town**

By MARTIN BUNN

**A** sultry breeze—the first hint of Indian Summer—whispered past the Model Garage as Gus Wilson padlocked the line of gas pumps on the service island. The weather man predicted a spell of hot, dry, weather, and Gus agreed with him.

"Ready to go home, Boss?" shouted Stan Hicks. He rolled down the big overhead door. "Everything is shut tight in the shop."

"You can take off, Stan," Gus called back to his young assistant. "I'll give Councilman Brenner a few more minutes. He said he'd pick up his car around seven."

"And I'm right on time!" boomed a deep-pitched voice from the shadows at the side of the office. An instant later a tall, ruggedly built man came briskly around the corner and greeted Gus and Stan with powerful handshakes.

"The council meeting today lasted longer than I expected," he said, "so I took a short cut through the field out back. Hope I didn't startle you boys."

"Not at all, Councilman," said Gus.

"Around here we're never startled by what politicians do." He handed Brenner the keys to a 1960 Corvair parked at the foot of the driveway.

Brenner climbed into the driver's seat and gave Gus and Stan a premature farewell wave . . . premature because the Corvair's flat six refused to start. The engine kept grinding away with only an occasional hesitant cough.

After a minute, Brenner squeezed out of the car, face red with anger.

"Do you gentlemen have an explanation for this?" he asked. "Up to now, this has been one of the easiest-starting cars I've ever driven. I wanted it tuned up, not turned off."

Stan flashed a worried look at Gus. "I don't understand it. The gas tank is full. After I tuned the engine and cleaned the carbs this morning I went for a test drive. The engine started fine and ran smooth as silk."

"I'll take a look at it," said Gus cheerfully. "Probably nothing serious."

Gus threw up the rear engine hood. He yanked off one of the spark-plug leads and held the connector next to the block.

"Okay, Councilman," he called, "crank the engine."

A fat spark jumped between the metal surfaces. "Spark seems fine," Gus muttered. He unfastened the gas-line hose coupling to one of the engine's twin carbs and called, "Turn it over again." A



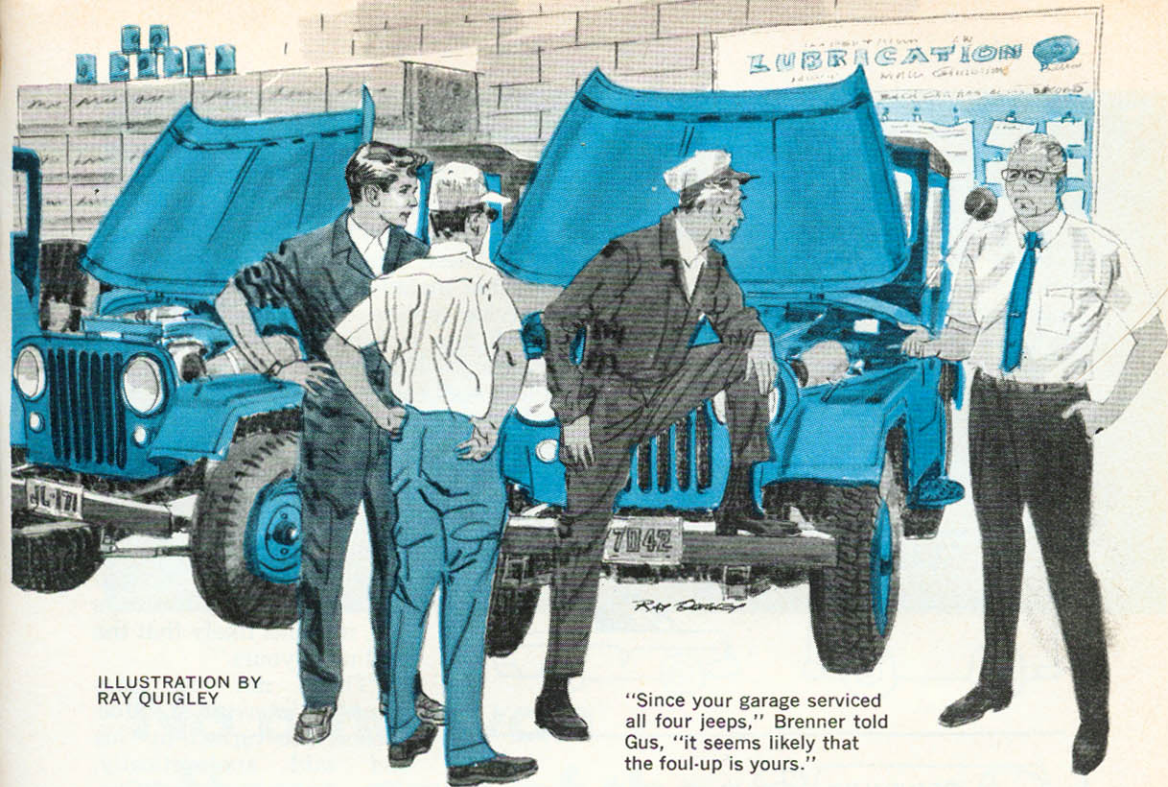


ILLUSTRATION BY  
RAY QUIGLEY

"Since your garage serviced all four jeeps," Brenner told Gus, "it seems likely that the foul-up is yours."

healthy stream of gasoline spurting from the coupling.

A little bell rang in Gus's mind as he replaced the coupling, and he remembered an emphatic warning printed in the Corvair shop manual. Quickly, he lifted off the air cleaner and peered through the central "air horn" assembly that fed air to both carbs.

"Step hard on the accelerator, Councilman," he called. "Try to set the automatic choke."

The throttle linkage moved, but the single, central, choke butterfly remained open. Gus pushed it shut. "Try starting the engine again—but this time don't touch the gas pedal."

The engine roared to life, accompanied by a loud sigh of relief from Stan.

"Keep away from the pedal until the engine warms up," Gus said, and he popped the air cleaner back in place.

"Did I do something wrong?" Brenner asked sheepishly. "I've owned this car for years, and it never acted like this before."

"Nope," admitted Gus somberly, "it was our fault. When my assistant cleaned

the carbs today he accidentally reinstalled the choke modifier rod backwards. Instead of closing the choke butterfly when you hit the gas pedal hard before starting, it forced it open . . . Stan will drive to your home early tomorrow morning and put it in the right way for you. Once the engine warms up tonight, she should run fine."

"That's well and good, Mr. Wilson," Brenner said, his tone changing sharply, "but why don't you people check your work when you do it, instead of hours later?"

"Stan did test-drive your car," Gus said, "but the engine was still warm enough to start without a choke, so he didn't notice that it wasn't working properly."

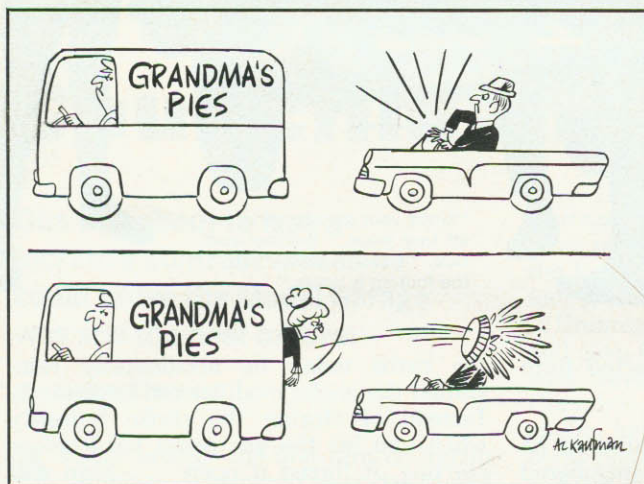
"Quite frankly, Mr. Wilson," the Councilman said, "I'm disappointed. You were awarded a contract to service municipal vehicles because my colleagues at town hall consider this garage the best around. And yet you have trouble with a simple tune-up. That worries me. Where the taxpayer's money is concerned I can become a very tough bird to deal with. Good

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night, Mr. Wilson, Stanley.” Releasing the brake, he drove off.

Stan winced when the Councilman mentioned the town’s contract with the Model Garage. It was a valuable assignment: The Model Garage was relieving some of the pressure on the municipal garage’s overworked mechanics by winterizing the town’s various vehicles. The work included a variety of small—but time-consuming—tasks such as putting on snow tires, flushing radiators and putting in antifreeze, and changing engine and transmission oil.



Gus and Stan watched silently as Councilman Brenner’s car disappeared. All Stan could say was, “Sorry, Boss.”

When Stan answered the telephone one morning a week or so later, he had almost forgotten about the Councilman and his Corvair, but the booming voice on the other end of the line brought everything back.

“A call for you, Boss,” he said glumly. “Councilman Brenner.”

It was a one-sided conversation, with the Councilman doing the talking. Gus could only squeeze in an occasional “Yes, sir” or “No, sir.” He turned to Stan when he hung up.

“Pack my tool box into the tow truck and tack a ‘gone for the day’ sign on the office door. We have been summoned to the municipal garage—and I mean summoned.”

As they pulled up in front of the ga-

rage, Gus and Stan could see four jeeps lined up inside, all with their hoods raised. In front of the jeeps stood Councilman Cyrus Brenner and Joe Weber, the town’s chief mechanic.

“Mr. Wilson, I’ll be blunt,” Brenner said. “These four jeeps all suffer from the same malady, according to the out-of-service reports entered by their drivers. All four lack pulling power, and run very rough—if at all—at high speed. And all four stall easily.

“It is inconceivable that a random mechanical failure affected all four machines simultaneously, so I conclude that they are the victims of some sort of . . . shall we say foul-up? And, since your garage serviced all four jeeps only five days ago, it seems likely that the foul-up is yours.”

“That’s not my judgment,” interrupted Joe Weber. He turned to Gus and said apologetically, “I’m sorry about this, Gus. The Councilman got wind of the trouble when I requisitioned four jeeps from the emergency pool to replace these.

“I haven’t even had time to look at them yet. My

regular assistant has been sick for two weeks, and I’ve been borrowing replacement mechanics from local garages. They only can stay a day or two at a time, though.”

“When did the trouble begin?” asked Gus.

“All four jeeps were on patrol duty around the outskirts of town yesterday. It’s hunting season, and overeager hunters sometimes take illegal pot shots within the town limits. The jeeps lasted about six hours, and then they came limping in, minutes apart.”

Stan jumped behind the wheel of one of the jeeps and started the engine. The four-banger caught instantly and settled down to a smooth idle, with only the normal lumpiness of a four-cylinder engine.

Gus swung under the hood, and pushed the throttle linkage. As engine revs in-

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creased, the engine became rougher and rougher, and misfired frequently. When he released the linkage, the engine beat rapidly smoothed out to a normal idle.

"It was pretty warm yesterday, wasn't it?" Gus asked thoughtfully.

"Sure was," said Joe. "A real Indian summer scorcher. Over 80."

Carefully, Gus loosened the distributor-mounting clamp, at the same time grasping the distributor's body to keep it from turning. "Feed it a little gas, Stan," he said. "Just enough to bring on rough running."

As the engine speeded up, and began to hesitate, Gus rotated the distributor very slightly. The roughness vanished.

"Okay, Stan," he said. "Kill the ignition. I know what the trouble is."

Gus turned the distributor back to its position and retightened the clamp.

"Ignition timing problem?" asked Stan.

"Yep," Gus replied, "the centrifugal automatic advance isn't working."

He pried loose the distributor-cap clamps, lifted off the cap and the rotor, and pointed his flashlight beam at the centrifugal-advance mechanism. The plate surface beneath the movable weight assembly was covered with a gummy substance that held the weights frozen in place.

"The last mechanic who tuned up this engine applied light machine oil to the assembly instead of distributor grease," said Gus. "It broke down under the high engine-compartment heat caused by slow-speed patrolling on a hot day and . . . well, you can see what happened."

"I suppose it was done by one of my

replacement assistants," said Joe. "I guess I better recall and check out all of the cars he worked on."

"Is the same thing wrong with all four jeeps?" asked the Councilman.

"Yep," said Stan, who had popped off the distributor caps of the three other jeeps. "The weights are frozen in all of them."

"You see, Councilman," Gus explained, "those weights are designed to be forced outwards by centrifugal force as engine r.p.m. increases. As they turn on their pivots, they move a linkage that advances ignition timing. This lets the spark fire the compressed-air/gas mixture at the right time. Without spark advance, the engine just doesn't have any pulling power, and won't run smoothly at high r.p.m."

"And the cure?" asked Brenner.

"That's easy," answered Joe. "I'll clean the gunk off the weight assemblies, and then give them a coating of distributor grease."

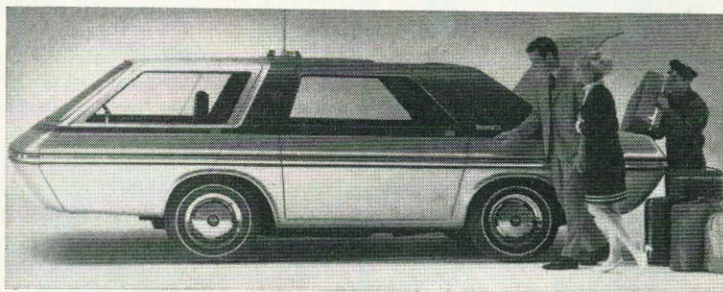
"Well, Mr. Wilson," said the Councilman, "it appears that you and your associate do not have a monopoly on mistakes. Please accept my apologies."

Brenner reached into his briefcase and removed what looked like a long strip of paper. He handed it to Gus.

"However," he added, "there is one more fact I must bring to your attention. As you know, the municipal elections will be held next month. Your diagnosis just knocked out one of my important campaign arguments—that letting town contracts to private firms like yours is inefficient—so in return I think it only fair that you place that 'Brenner for Councilman' sticker on your tow truck." E 3

## New taxi design—safe and sensible

This experimental taxicab, designed by U.S. Steel as a demonstration, is full of common sense. It has a short wheelbase for maneuverability in tight traffic and extra-large rear doors to make it easier for passengers to get in and out. The body has a built-in guard-rail around its perimeter, built-in roll bars, and



many other safety items. The car has a V-8 engine in front and conventional drive to the rear axle.