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CHANGING *with the times*

THE EVOLUTION OF A FAMILY BUSINESS

- Servicing extreme-condition vehicles
- Success tips for one-man shops
- Understanding modern drivelines



Repair Basics

Repair flexibility

The trick to being able to fix any make or model of vehicle lies in understanding the basics.

By Richard Goulet

I feel lucky to have grown up in an era that permitted me to indulge my passion for cars.

Safety and emission inspections did not exist and insurance rates for young male drivers were very reasonable. As a result, I was more involved in cars at an early age than kids are today.

By the time I turned 16, I had driven more kinds of cars than I can count, and I had acquired a wide variety of my own vehicles: a 1938 Dodge pickup, 1939 Chevrolet coupe, 1955 Ford steel-side wagon, 1961 Ford Falcon, 1938 Jaguar, and a 1963 Pontiac Laurentian – all but the Jaguar in good running condition.

It was quite an array of vehicles for a teenager. And they taught me that under their metal skins, the engine and powertrain technology was fairly similar. I came to understand that by studying the technology, I could diagnose and solve any mechanical problem that arose. The fact that I enjoyed this kind of pursuit was an early indication of my passion for diagnostics.

Perhaps even more challenging than learning how to fix the cars was learning how to do it with next to no income. Being still in high school at the time, I had only the limited resources afforded me by a part-time job, so I frequently turned to the local dump and scrap yard for used parts.

I remember driving down the highway one time in my 1961 Ford Falcon, a two-door coupe powered by a 170-cubic-inch and a two-speed automatic transmission, when I heard a loud bang from the

engine compartment. I was immediately confronted by a total loss of power. I pulled over, took out my tool box and opened the hood. It didn't take long to figure out that I had a broken push rod on my hands.

There I was, stranded in the middle of nowhere, 30 miles from home, with no On-Star button to push, and no auto club to rescue me.



Under their metal skins, most engines are fairly similar.

In the distance I could see a solid-waste dump, where I knew I'd find some rusted out cars, so I headed over. Scavenging through the old relics, I came upon a 1962 Pontiac with a six-cylinder Blue Flame engine. That old beast saved the day. I quickly removed a pushrod and made my way back to my car. When I got there, I realized that the Blue Flame pushrod was far too long for the Ford 170 cid engine, but, not to be beaten, I got out a hacksaw and cut the Pontiac pushrod to length. Because I didn't have a file, I rounded the bottom by scraping

the rod on the pavement. This removed the burrs and sharp edges and allowed me to install it into the engine. I started the motor, adjusted the lifter, re-installed the valve cover, and got myself home without further problem. I never did go back in and replace the Blue Flame pushrod with an original Ford unit because the vehicle ran fine.

As I look back on incidents like that, I realize how valuable it was to work on a variety of cars produced by several different manufacturers. I learned that the principles of engine and powertrain technology were virtually the same in most cars – they were just applied differently. My ability to effectively diagnose and resolve problems is based on the lessons I learned in my earliest years as a mechanic. I had to approach problems from the stand-point of technology, not just from a particular manufacturer's perspective.

Modern-day vehicles and the problems they experience are far more complex than I experienced as a budding mechanic. However they still don't differ radically from one manufacturer to another. Today a technician must apply a combination of electrical, electronic, physical, and chemical theory to diagnose vehicle problems. True flexibility of diagnostic ability comes with understanding the technology behind the application.

Learn the basics and the details tend to fall into place a lot easier! 🚗

Richard Goulet is a veteran car enthusiast with more than 30 years experience fixing vehicles and selling parts.