



Pearson New International Edition

Automotive Technology
James D. Halderman
Fourth Edition

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CAREERS IN THE AUTOMOTIVE SERVICE INDUSTRY

CAREERS IN THE AUTOMOTIVE SERVICE INDUSTRY

OBJECTIVES: After studying this chapter, the reader will be able to:

- Describe automotive service-related positions.
- Discuss the level of training and experience needed for each position.
- Describe the technical skills needed for each position.
- Explain the relationship of the service manager to others in a shop and company.

KEY TERMS: Entrepreneur • On-the-job training (OJT) • Parts counter person • Service advisor • Service consultant • Service manager • Service writer • Shop foreman • Team leader • Technician (tech) • VIN • Work order

THE NEED FOR AUTOMOTIVE TECHNICIANS

The need for trained and skilled automotive **technicians** is greater than ever for several reasons, including:

- Vehicles are becoming more complex and require a higher level of knowledge and skills.
- Electrical and electronic components and sensors are included throughout the vehicle.
- Construction of parts and materials being used has changed over the last few years, meaning that all service work must be done to specified procedures to help avoid damage being done to the vehicle.
- Increasing numbers of different types of lubricants and coolants make even routine service challenging.

All of the above issues require proper training and the ability to follow factory specified procedures to ensure customer satisfaction. The number of service technicians needed is increasing due to more vehicles on the road. A good service technician can find work in almost any city or town in the country, making the career as a professional service technician an excellent choice.

THE NEED FOR CONTINUOUS VEHICLE SERVICE

Vehicles are lasting longer due to improved materials and more exacting tolerances. Every year, vehicles are being driven farther than ever before. It used to be (in the 1950s) that the life of a vehicle was considered to be 100,000 miles or 10 years. Now achieving 200,000 miles without a major repair is common with proper maintenance and routine service. However, even the amount of needed routine service has been reduced due to changes in the vehicles, such as radial tires that now last 40,000 miles instead of older tires which were worn out and needed to be replaced every 15,000 miles.

WARRANTIES A warranty is a guarantee to the purchaser of a vehicle that it will function as specified. The warranty covers the quality and performance of the product and states the conditions under which the warranty will be honored. Vehicle warranties vary but all warranties indicate a time and mileage restriction. The expressed warranties often include the following areas:

- New vehicle limited warranty that covers most components and is commonly called a bumper-to-bumper policy.

- Powertrain warranty covers the engine, transmission/transaxle, and final drive units. This coverage usually is longer than the bumper-to-bumper coverage.
- Sheet metal rust through warranty is usually longer than the bumper-to-bumper and powertrain warranty and covers rust if a hole occurs starting from inside the outer metal surface of the body.
- Emission control device warranties depend on the emission rating, the warranty coverage of the powertrain control module (PCM), and the catalytic converter and are covered for 8 years and 80,000 miles up to 10 years and 150,000 miles.

Vehicle warranties, unless an emergency repair, must be performed at a dealership, which is certified by the vehicle manufacturer to perform the repairs. At the dealership, the technician performing the repair must also be certified by the vehicle manufacturer.

All technicians should be familiar with what may be covered by the factory warranties to help ensure that the customer does not have to pay for a repair that may be covered. While warranties do cover many components of the vehicle, wear and service items are not covered by a warranty in most cases and therefore, offer excellent opportunity for additional service work for trained automotive technicians.



FIGURE 1 A service technician checking for a noise of a vehicle in a new-vehicle dealership service department.

INCREASING AGE OF A VEHICLE The average age of a vehicle on the road today has increased to older than nine years. This trend means that more vehicles than ever are not covered by a factory warranty and are often in need of repair. Aftermarket warranties also can be used at most repair facilities, making it very convenient for vehicle owners.



FIGURE 2 A typical independent service facility. Independent garages often work on a variety of vehicles and perform many different types of vehicle repairs and service. Some independent garages specialize in just one or two areas of service work or in just one or two makes of vehicles.

TECHNICIAN WORK SITES

Service technician work takes place in a variety of work sites including:

NEW VEHICLE DEALERSHIPS Most dealerships handle one or more brands of vehicle, and the technician employed at dealerships usually has to meet minimum training standards. The training is usually provided at no cost online or at regional training centers. The dealer usually pays the service technician for the day(s) spent in training as well as provides or pays for transportation, meals, and lodging. Most dealerships offer in-house on-line training with minimum off-site training. ● **SEE FIGURE 1.**

INDEPENDENT SERVICE FACILITIES These small- to medium-size repair facilities usually work on a variety of vehicles. Technicians employed at independent service facilities usually have to depend on aftermarket manufacturers' seminars or the local vocational school or college to keep technically up-to-date. ● **SEE FIGURE 2.**

MASS MERCHANDISER Large national chains of vehicle repair facilities are common in most medium- and large-size cities. Some examples of these chains include Sears, Goodyear, Firestone, and NAPA, as shown in ● **SEE FIGURE 3.** Technicians employed by these chains usually work on a wide variety of vehicles. Many of the companies have their own local or regional training sites designed to train beginning service technicians and to provide update training for existing technicians.



FIGURE 3 This NAPA parts store also performs service work from the garage area on the side of the building.

SPECIALTY SERVICE FACILITIES Specialty service facilities usually limit their service work to selected systems or components of the vehicle and/or to a particular brand of vehicle. Examples of specialty service facilities include Midas, Speedy, and AAMCO Transmissions. Many of the franchised specialty facilities have their own technician training for both beginning and advanced technicians. ● **SEE FIGURE 4.**

FLEET FACILITIES Many city, county, and state governments have their own vehicle service facilities for the maintenance and

repair of their vehicles. Service technicians are usually employees of the city, county, or state and are usually paid by the hour rather than on a commission basis. ● **SEE FIGURE 5.**

TECHNICIAN JOB CLASSIFICATIONS

There are many positions and jobs in the vehicle service industry. In smaller service facilities (shops), the duties of many positions may be combined in one job. A large city dealership may have all of the following vehicle service positions. A technician is often referred to as a tech.



FIGURE 4 Midas is considered to be a specialty service shop.

LUBE TECH/QUICK SERVICE TECHNICIAN A lubrication technician should be trained in the proper use of hand tools and instructed how to properly service various types of vehicles. The training could be **on-the-job (OTJ)** or could be the result of high school or college automotive training. Some larger companies provide in-house training for new technicians and as a result they are trained to perform according to a specified standard. It is important that the lubrication technician double-check the work to be certain that the correct viscosity oil has been installed and to the specified level. The oil plug and oil filter must also be checked for leakage.

Lubrication technicians are trained to perform routine services including:

- Oil and oil filter change
- Chassis lubrication
- Fluids check and refill
- Tire inflation checks
- Accessory drive belt inspection
- Air filter check and replacement
- Cabin filter replacement
- Windshield wiper blade replacement

As a result of these tasks the lubrication technician should be skilled in hoisting the vehicle and able to handle the tasks efficiently and in minimum time.

NEW VEHICLE PREPARATION FOR DELIVERY A new entry-level position at a dealership often includes preparing new vehicles for delivery to the customer. This is often referred to as “new car prep.” The duties performed for new vehicle preparation are generally learned on the job. The vehicle manufacturer publishes guidelines that should be followed and it is the responsibility of the



FIGURE 5 A school bus garage is a typical fleet operation shop that needs skilled service technicians.

new vehicle preparation person to see that all items are checked and serviced, and all associated paperwork is completed. The activities normally associated with preparing a new vehicle for delivery include:

- Installing wheel center caps or wheel covers (if used)
- Installing roof racks, running boards, and other dealer-installed options
- Checking and correcting tire pressures

NOTE: Many vehicle manufacturers ship the vehicles to the dealer with the tires overinflated to help prevent movement of the vehicle during shipping.

- Checking all fluids
- Checking that everything works including the remote key fob and all accessories
- Ordering any parts found to be broken, missing, and damaged in transit
- Removing all protective covering and plastic from the seats, carpet, and steering wheel
- Washing the vehicle

GENERAL SERVICE TECHNICIAN A general service technician usually has training as an automotive technician either in one or more of the following:

- High school—Technical or vocational school or a comprehensive high school that has an Automotive Youth Education System (AYES) program or NATEF certification.
- College or technical school—Usually a two-year program that can earn the student an associate's degree.
- Career college or institute—Usually a 6-month to 12-month program earning the graduate a certificate.

Automotive service technicians perform preventative maintenance, diagnose faults, and repair automotive vehicles and light trucks.

Automotive service technicians adjust, test, and repair engines, steering systems, braking systems, drivetrains, vehicle suspensions, electrical systems and air-conditioning systems, and perform wheel alignments. In large shops, some technicians specialize in repairing, rebuilding, and servicing specific parts, such as braking systems, suspension, and steering systems. In smaller shops, automotive service technicians may work on a wider variety of repair jobs.

Automotive service technicians begin by reading the work order and examining the vehicle. To locate the cause of faulty operation and repair it, a technician will:

- Verify customer concern
- Use testing equipment, take the vehicle for a test-drive, and/or refer to manufacturer's specifications and manuals
- Dismantle faulty assemblies, repair, or replace worn or damaged parts
- Reassemble, adjust, and test the repaired mechanism

Automotive service technicians also may:

- Perform scheduled maintenance services, such as oil changes, lubrications, and filter replacement
- Advise customers on work performed, general vehicle conditions, and future repair requirements

WORKING CONDITIONS Most automotive service technicians work a 40-hour, five-day week. Some evening, weekend, or holiday work



FREQUENTLY ASKED QUESTION

Why Is the Work Order Important?

The **work order** is a legal document that includes the description of the vehicle and the work requested by the customer. The customer then signs the work order authorizing that the stated work be performed. If there are additional faults found then the shop must notify the customer and get permission to change the amount or extent of the work originally authorized. As work is performed on the vehicle, the parts used and the labor operation performed are added. This creates a complete file on the repair. This means that the vehicle has to be properly identified by including the **vehicle identification number (VIN)** on the work order. There is only one vehicle with that VIN, yet there may be many "white Chevrolet pickup trucks."

The work order is the paper trail that shows all operations, labor times, and parts used when the vehicle was in control of the shop. A work order is often required even when the technician is working on his or her own vehicle.

may be required. The work is sometimes noisy and dirty. There is some risk of injury involved in working with power tools and near exhaust gases.

SKILLS AND ABILITIES The work is most rewarding for those who enjoy doing precise work that is varied and challenging. Also, technicians usually achieve job security and a feeling of independence.

To be successful in the trade, automotive service technicians need:

- Good hearing, eyesight, and manual dexterity (ability to work with hands)
- Mechanical aptitude and interest
- The ability to lift between 25 and 50 pounds (11 and 25 kilograms)
- The willingness to keep up-to-date with changing technology

A working knowledge of electricity, electronics, and computers is also required for many service procedures.

EMPLOYMENT AND ADVANCEMENT. Automotive service technicians are employed by automotive repair shops, specialty repair shops, service facilities, car and truck dealerships, and by large organizations that own fleets of vehicles.

Experienced automotive service technicians may advance to service manager or shop foreman. Some automotive service technicians open their own repair facilities.

Many technicians can also start work in a shop or dealership and learn on the job. Most technicians keep up-to-date by attending update seminars or training classes on specific topics throughout the year.

Specific tasks performed by a general service technician can include the following:

- All of the tasks performed by the lubrication technician.
- Engine repairs including intake manifold gasket replacement; cylinder head replacement; and oil and water pump replacement plus other engine-related tasks.
- Brake system service and repair including disc brakes; drum brakes; parking brake; and antilock brake (ABS) diagnosis and service.

- Suspension-related service including tire inspection and replacement; shock and strut replacement; servicing or replacing wheel bearings; performing steering component inspection and parts replacement; and performing wheel alignment and vibration diagnosis.
- Electrical-related diagnosis and repair including starting and charging problems; correcting lighting and accessory faults; and general service such as light bulb replacement and key fob reprogramming.
- Heating, ventilation and air conditioning work usually involves the use of diagnostic and service equipment that requires special training and certification if working with refrigerants.
- Engine performance-related diagnosis and repair including replacing fuel pumps and filters; cleaning or replacing fuel injectors; service ignition system components; solving emissions-related failures; and determining the cause and correcting "Check Engine" lights.
- Manual transmission service and repairs including replacing clutches; adjusting, or replacing clutch linkage; and performing four-wheel-drive diagnosis and service procedures.
- Automatic transmission service and repairs including performing routine automatic transmission service; removing and replacing automatic transmissions; servicing differentials, transmissions/transaxles and performing diagnosis and service checks including fluid pressure and scan tool diagnosis.

The vehicle is then driven by the service technician to verify the repair.

TECHNICIAN TEAM LEADER A **team leader** is an experienced service technician who is capable of performing most if not all of the work that the shop normally handles. The team leader then assigns work to others in the group based on the experience or competency of the technician. The team leader then checks the work after it has been completed to be sure that it has been correctly performed. The number of hours of labor for each member of the team is totaled each pay period. Each member of the team is paid an equal share of the time but at different rates. The team leader gets a higher per hour rate than the others on the team. The rate of pay per hour is based on the level of training and experience. A beginning technician may or may not be paid as part of the total team hours depending on how the team system is organized. While some shops do not use teams, many large shops or dealerships have two or more teams. The advantage of a team-type organization is that everyone on the team looks out and helps each other if needed because they are all paid based on the number of hours the team generates. The team leader performs the duties of a shop foreman but only for those members on the team and not the entire shop. The team leader is under the direction and control of the service manager.

SHOP FOREMAN A **shop foreman** (usually employed in larger dealerships and vehicle repair facilities) is an experienced service technician who is usually paid a salary (so much a week, month, or year). A shop foreman is a knowledgeable and experienced service technician who keeps up-to-date with the latest vehicle systems, tools, and equipment. Typical shop foreman's duties include:

- Test-driving the customer's vehicle to verify the customer concern (complaint)
- Assigning work to the service technicians
- Assisting the service technicians
- Helps maintain the shop and shop equipment

- Assisting the service manager
- Verifying that the repair is completed satisfactorily

The shop foreman is under the direction and control of the service manager.

SERVICE ADVISOR A **service advisor**, also called a **service writer** or **service consultant**, is the person at the dealership or shop designated to communicate the needs of the customer and accurately complete a work order.

A service advisor should:

- Have a professional appearance
- Be able to speak clearly
- Be able to listen carefully to the customer
- Write neatly and/or type accurately
- Be familiar with industry and shop standards and procedures

Most service advisors would benefit from taking a short course on service advising skill development and interpersonal relationship building. A service advisor should be familiar with the operation of the vehicle, but not to the same level as a service technician. A service advisor should not diagnose the problem, but rather state clearly on the work order what, when, and where the problem occurs so that the service technician has all the needed information to make an accurate diagnosis. ● **SEE FIGURE 6** for an example of a typical work order.

The service advisor's duties include:

1. Recording the vehicle identification number (VIN) of the vehicle on the work order
2. Recording the make, model, year, and mileage on the work order
3. Carefully recording what the customer's complaint (concern) is so that the service technician can verify the complaint and make the proper repair
4. Reviewing the customer's vehicle history file and identifying additional required service
5. Keeping the customer informed as to the progress of the service work

A service advisor must be at the shop early in the morning to greet the customers and often needs to stay after the shop closes for business to be available when the customer returns at the end of the day.

SERVICE MANAGER The **service manager** rarely works on a vehicle but instead organizes the service facility and keeps it operating smoothly. A service manager can be a former service technician or in many larger dealerships, a business major graduate who is skilled at organization and record keeping. The service manager typically handles all of the paperwork associated with operating a service department.

NOTE: In a small shop, the shop owner usually performs all of the duties of a shop foreman and service manager, as well as the lead technician in many cases.

Typical duties of a service manager include:

- Establishing guidelines to determine the technicians' efficiency
- Supervising any warranty claims submitted to the vehicle manufacturer or independent insurer
- Evaluating and budgeting for shop tools and equipment
- Establishing service department hours of operation and employee schedules