

# CHAPTER 1

## Careers in the Automotive Industry

### CHAPTER OVERVIEW

This chapter examines the automotive industry today and points out the changes that are occurring. Professional service provided by a properly trained technician is critical because of the technology used in today's vehicles. A detailed description is given of what it takes to be a professional technician. Included are descriptions of career opportunities, job classifications, and the various automotive education programs that are available in Canada. Automotive Service Technician Interprovincial Standards and ASE certification requirements are also provided.

### LEARNING OUTCOMES

- Describe the reasons why today's automotive industry is considered a global industry.
- Explain how computer technology has changed the way vehicles are built and serviced.
- Explain why the need for qualified automotive technicians is increasing.
- Describe the major types of businesses that employ automotive technicians.
- List some of the many job opportunities available to people with a background in automotive technology.
- Describe the different ways a student can gain work experience while attending classes.
- Describe the requirements for Red Seal certification of automotive technicians.

### INSTRUCTIONAL OUTLINE WITH TEACHING HINTS

- I. Servicing Today's Vehicles
  - A. The Importance of Automotive Technicians
  - B. The Need for Quality Service
  - C. The Need for Ongoing Service
    1. Warranties
    2. Increased Vehicle Age  
*Hint:* Discuss the need for repairs as cars become older and what opportunities this need presents to a qualified technician.
  - D. Career Opportunities
    1. Dealerships
    2. Independent Service Shops
    3. Franchise Repair Shop
    4. Store-Associated Shops
    5. Fleet Service and Maintenance  
*Hint:* Discuss career opportunities in all areas of automotive service.
- II. Job Classifications
  - A. Service Technician

- B. Shop Foreman
- C. Service Adviser
- D. Service Manager
- E. Service Director
- F. Parts Counterperson
- G. Parts Manager

*Hint:* Discuss the various automotive shop positions and how they each relate to the technicians.

### III. Related Career Opportunities

- A. Parts Distribution
- B. Marketing and Sales
- C. Other Opportunities

### IV. Training for a Career in Automotive Service

- A. Student Work Experience
  - 1. Job Shadowing Program
  - 2. Mentoring Program
  - 3. Cooperative Education
  - 4. Part-Time Employment
- B. Canada's Automotive Apprenticeship Program
- C. The Need for Continuous Learning

### V. ASE Certification

*Hint:* Introduce the various programs in your area that are available to students.

## WHAT ARE COMMON STUDENT MISCONCEPTIONS AND STUMBLING BLOCKS?

- Without experience, students will struggle with understanding how an automotive shop functions.
- Possibly have a shop owner visit the class or arrange to take the students to observe a shop during operating hours.
- To help students understand a shop's different job classifications, place various students as the shop foreman or service writer and have them arrange the "workload" for the day's shop activities.
- Have the students refer to the job classification section of the chapter as a reference for these assignments. Refer to pages 8-12 of Chapter 1 for reference.

## SHOP ACTIVITIES AND CASE STUDIES

Here are some activities you can review in-class as a group, or ask students to complete individually or in pairs:

1. Research a vehicle of your choice. Visit the manufacturer or dealership website. Make a list of all of the systems in that vehicle that are controlled by electronics. If you are unsure of system, include its name on the list and talk to your instructor about it.

2. Look through the help-wanted section of the local newspaper or at online job websites such as [www.workopolis.com](http://www.workopolis.com), [www.careerbuilder.ca](http://www.careerbuilder.ca), [www.apprenticesearch.com](http://www.apprenticesearch.com), and [www.jobbank.gc.ca/home](http://www.jobbank.gc.ca/home). Clip out or print all of the employment opportunities available to someone trained in automotive technology. Do not limit your search to one or two job classifications; look through many.
3. Based on the ads found in the previous activity, put together a summary of the jobs that are currently available. Include in the summary the desired qualifications and the type of facilities in need of qualified technicians.

## ANSWERS TO TEXTBOOK REVIEW QUESTIONS

1. Electronics are widely used because they allow for rapid response to changes in operating conditions; they are inexpensive, lightweight, and very reliable.
2. To become a successful automotive technician, you must be able to master and keep up with the latest technologies, and you must possess the skills to work well with people.
3. There are a variety of types of businesses that employ automotive technicians.
  - a. Dealerships provide repair and maintenance on vehicles while they are under warranty and beyond. They offer the technician good technical support, special diagnostic equipment, an opportunity to specialize, and ongoing training. A disadvantage could be becoming limited to one or two particular model lines.
  - b. Independent repair shops service all types of vehicles, sometimes specializing in certain areas of repair, or in either import or domestic vehicles. This type of shop may present constant service and diagnostic challenges to the technician, providing an opportunity to gain a well-rounded technical background. Disadvantages may include having less sophisticated diagnostic equipment to work with and less dealership sponsored training.
  - c. Store-associated shops provide certain specialized services such as brakes, exhaust systems, and wheel and tire repair. An advantage to the technician is the ability to specialize in one area and product. A disadvantage is not becoming as well rounded in other areas of automotive service.
  - d. Specialty service shops provide repairs in specialized repair areas such as engine rebuilding, transmission/transaxle overhauling, brake, exhaust, emissions, or electrical systems. Technicians can become very skilled in the specialized area, but they can also limit themselves.
  - e. Fleet service and maintenance shops provide service and maintenance for a fleet of company-owned vehicles. Their technicians can become very familiar with a wide range of vehicles over an extended period of time.
4. There are many ways that you can gain work experience while you are a student. They include:
  - a. job shadowing, b. mentoring, c. cooperative education, d. apprenticeship, e. part-time employment.
5. d. During the on-the-job portion of an apprenticeship, the apprentice must complete a prescribed set of complete vehicle repair tasks.
6. b. While a vehicle is still under warranty, repairs are usually performed in dealership service departments.
7. c. Specialty shops perform work on one or more specific automotive systems.
8. d. The service adviser prepares cost estimates.
9. a. The vehicle's electronics have produced the greatest changes in today's automobiles. Electronics have affected the operation of almost every automotive system including improvements to engine performance, emission control, braking systems, and passenger comfort to name a few.

10. a. A successful technician must possess a good understanding of electronics.
11. d. Tire rotation would be performed under scheduled preventative maintenance. Water pump replacement and transmission overhaul would only be performed when a failure or signs of impending water pump or transmission failure occurs. Engine oil replacement is a regular maintenance item that does not necessarily have to be only performed during a preventative maintenance service.
12. b. The automobile manufacturer determines the new car warranty conditions for the automobile's engine and drive train systems.
13. d. The government mandates the length of time and amount of kilometres that emission control devices are to be covered under warranty.
14. d. To become a certified automotive technician in most Canadian provinces you must complete an automotive service technician apprenticeship.
15. b. Although each province may set a minimum grade to obtain a provincial certificate, a 70 percent grade must be achieved to obtain a Red Seal endorsement.
16. c. A prorated warranty decreases over time.
17. a. A prorated warranty is commonly provided on tires and batteries.
18. c. Wholesalers are commonly known in the automotive industry as jobbers. Jobbers sell aftermarket parts and supplies to automotive service shops and the general public.
19. a. The advantage of a Red Seal endorsement is that it allows an automotive service technician to work in most Canadian provinces without further testing because it is recognized as a high standard of achievement.
20. d. ASE testing in Canada is voluntary testing in various automotive technology areas.

## **CASE STUDY**

A customer brings in a 2013 Toyota Matrix equipped with a 1.8-litre in-line four-cylinder engine. The complaints are rough idle, poor fuel economy, and an engine miss at high speeds. After performing a visual inspection and diagnostics, the conclusion is that a cylinder leakage test must be performed. Thirty percent leakage was indicated on cylinder 2. The technician observed bubbles in the radiator while the leakage test was being performed on cylinder 2. What can be the cause?