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Essential Skills and Apprenticeship

Using Essential Skills: On the Job with an Automotive Service Technician

Are you starting an apprenticeship in automotive service or are you thinking about a career in this trade? Pursuing a career as an automotive service technician requires strong essential skills such as reading, document use, numeracy and critical thinking.

Use this booklet to:

- learn how automotive service technicians use essential skills;
- follow the daily routine of an automotive service technician; and
- find out how your essential skills compare to those of a journeyperson in automotive service.

How automotive service technicians use essential skills

Automotive service technicians use essential skills to perform a variety of job-related tasks, for example:

- **document use** to read work orders, record repair and service information, and fill out vehicle inspection forms and job estimates;
- **oral communication** to discuss with supervisors and co-workers what jobs need to be done and who needs to do them; and
- **problem solving** to be able to troubleshoot, determine the logical cause of the problem and figure out how to resolve it.

Automotive Service Technician

Essential Skills

Reading
Document Use
Numeracy
Writing
Oral Communication
Working with Others
Thinking
Computer Use
Continuous Learning

Automotive service technicians inspect, diagnose, repair and service the mechanical, electrical and electronic systems of passenger vehicles. They work for car dealerships, garages and service stations, as well as automotive specialty shops and stores that have automotive service centres. They may also be self-employed.

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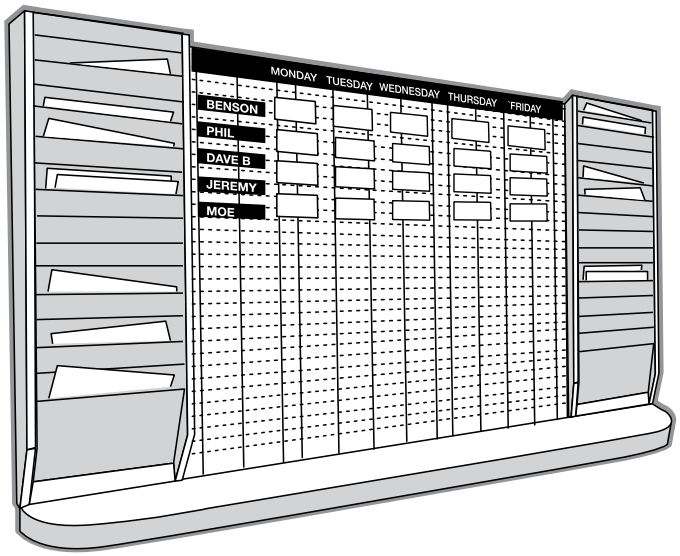
Canada

A day in the life of an automotive service technician: Phil's story

Reading a work order

Phil is an automotive service technician in the service department of a car dealership. When he arrives for his shift, Phil looks at the work order board to see the tasks he has been assigned for the day *(document use)*. Before getting started, he asks his supervisor if there are any "waiters"— jobs where the customer waits at the dealership while the technician performs the repair or service *(oral communication)*. These jobs must be done first. Phil's supervisor answers that there are no waiters at the moment and tells Phil he can start on his first work order.



Phil punches in with his time card to record the start time for this particular job. He then reads over the work order, which tells him to do a pre-owned vehicle inspection and fill out a vehicle safety inspection form *(document use)*. The estimated time for this job is two hours, so Phil will have to plan his time carefully *(numeracy)*. He gets the car keys from the key box, finds the car in the lot and takes it out for a road test.

Completing a road test

Every automotive service technician has a different way of doing things. Phil prefers to do a road test first when he is inspecting a car. He listens to the engine to check for rattling or other unusual noises; changes gears to make sure that the shift is smooth; tests the brakes, including the parking brake; and makes sure that the steering is aligned. He also tests the lights, signals, windshield wipers, heater and air conditioner to make sure the electrical system is in working order *(thinking skills – critical thinking)*. When the road test is finished, he drives the car back to the dealership, puts it on a hoist to lift it off the ground and checks off the items he just tested on the inspection form *(document use)*.

Checking the wheels and tires

In the shop, Phil uses a tire tread depth gauge to measure the tread remaining on all four tires. He pushes down on the plunger, inserts the needle into the tire groove, pushes down on the gauge and checks the gauge reading. Most new tires have a reading of $^{10}/_{32}$". Tires need to be replaced when the tread depth is under $^{2}/_{32}$". The gauge reads $^{9}/_{32}$", so the tire is safe *(numeracy)*. He enters this information on the inspection form and continues to check the tires for cracks, cuts or bulges in the sidewall *(document use)*. He also looks for uneven wear, which is a sign of a wheel alignment or suspension problem *(thinking skills – problem solving)*. He inspects the spare tire and makes sure all the tires have enough air. When he has finished this part of the inspection, Phil fills out the relevant sections of the inspection form *(document use)*.

Checking the fluids

Next, Phil checks the car's fluids to make sure they are topped up and that there are no leaks. When he checks the master cylinder for the brake fluid, he notices that the fluid level is low. He will need to find out why it is low, and he makes a note of this on the work order *(writing)*. He also reads the reservoir cap on the master cylinder to find out what grade of brake fluid the car takes so that he can top it up *(reading)*.

Checking the brakes

When the brake fluid is low, it could be a sign of a problem such as a leak or brake pad wear. Phil removes the wheels and inspects the brakes to make sure there are no fluid leaks. He checks the brake hoses and lines and looks at the condition of the rotors and brake pads. Any discolouration, cracking or unevenness may be a sign of damage. Phil uses a manual brake gauge to find out how much brake pad is left; he places each gauge against the pad to find the gauge that matches the thickness of the pad *(numeracy)*. He checks the vehicle specifications and finds that front brake pads under 3 mm and rear brake pads under 2 mm are considered unsafe. Phil finds that the front brake pad has 6 mm left, so it does not need to be changed. However, the rear brake pad has only 2 mm left, so it will need to be replaced *(thinking skills – decision making)*.

Next, Phil uses a digital vernier caliper to measure the thickness of the rotors. The rotors can be measured in either inches or millimetres *(numeracy)*. He checks the vehicle specifications on a computer to determine minimum rotor thickness *(computer use)*. For this vehicle, rotors under 9 mm are considered unsafe and must be replaced. The front rotor is 25.03 mm and is in very good condition. The rear rotor is 9.93 mm, which is still good, but since it is slightly warped, Phil decides that it should be replaced. He makes a note of this on the back of the work order *(writing)*.

Vehicle inspection:

- Checked fluid levels. Noticed that brake fluid is low. Further diagnosis is needed.
- Checked brake hoses and brake lines. No sign of leaks.
- Checked brake pads. Front brakes are 6 mm and rear brakes are 2 mm.
- Recommended replacing rear brake pads and rear rotors.

Solving problems

Phil is about to start the next part of the inspection when his supervisor tells him that there is a waiter and the customer wants to speak to the technician. Phil punches out to indicate that he is stopping work on the current job and punches in to record the start time for this new job. He talks with the customer and finds out that the hood of his car is not latching closed properly *(oral communication)*. Phil opens the hood and inspects the latch; he finds that it is loose. He tightens the latch retaining bolt with a wrench, but the hood still doesn't close properly. After further investigation, he finds that the latch is slightly bent. It will need to be replaced *(thinking skills – decision making)*. He explains the problem and the solution to the customer and writes a repair order telling the parts department to order a hood latch assembly *(document use)*. He reports to the supervisor about what he did in this job *(oral communication)*. Phil punches out to stop the clock for the waiter and then in again to restart the clock for his first work order.

Do you have the essential skills to be an automotive service technician?

Complete the following questions to see how your skills compare to those of a journeyperson in automotive service. (Answers on page 7.)

1. Reading a work order

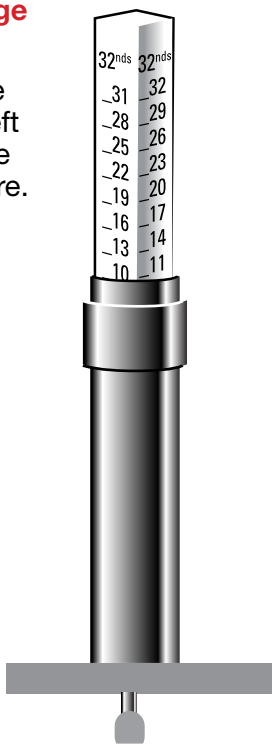
Automotive service technicians read work orders to find out what needs to be done on a vehicle.

Look at the work order below and list the type of work to be done on this car.

SERVICE		
CUSTOMER INFORMATION		
YEAR, MAKE, MODEL		LICENSE NO.
03 / HONDA / ACCORD / 4DSDN		
VEHICLE ID NO.	DELIVERY KM	DATE RECEIVED
72631A801096	134,061	02/13
		DATE PROMISED
AUTO PARK PLAZA LTD. 798 STEEL PLACE RICHMOND, B.C. V5J 1T5		02/18 05:30PM
		PHONE NO.
		604-123-4567
SERVICE INFORMATION		
USED CAR CHECK		
PERFORM PRE-OWNED CHECK OVER		
USED CAR CLEAN UP		
PERFORM USED CAR CLEAN UP FILL OUT FORM		
RECONDITIONING		
N/A		

2. Reading a tire tread depth gauge

Automotive service technicians use a tire tread depth gauge to measure approximately how much tread is left on each tire. The automotive service technician measures the front left tire. What is the remaining tread on this tire, in 32nds of an inch?



3. Looking up specifications

Automotive service technicians need to find the specifications for tire pressure.

What is the cold tire pressure for the rear tires?

Tire and Loading Information

Seating Capacity	Total: 5	Front: 2	Rear: 3
The combined weight of occupants and cargo should never exceed 385 kg or 850 lbs.			
TIRE	SIZE		COLD TIRE PRESSURE
FRONT	P205 / 5OR17		220 kPa, 32 psi
REAR	P205 / 5OR17		220 kPa, 32 psi
SPARE	T125 / 7OD16		420 kPa, 60 psi

4. Completing an inspection form

When inspecting a vehicle, automotive service technicians fill out an inspection form to indicate what is satisfactory (S) and what needs attention (N). The automotive service technician measures the brake pads and finds that the front brake pads have about 8 mm left and the rear brake pads have about 1.5 mm left. Based on this information, complete the inspection form below.

Hint: You can find information to help you with this task on page 4.

BRAKES		
	S	N
Lines/Hoses	✔	
Front approx. _____mm		
Rear approx. _____mm		
Fluid Level/Condition	✔	
Fluid	✔	

BRAKES		
	S	N
Lines/Hoses	✓	
Front approx. 8 mm	✓	
Rear approx. 1.5 mm		✓
Fluid Level/Condition	✓	
Fluid	✓	

4. **Completing an inspection form** *(document use)*

The cold tire pressure for the rear tires is 220 kPa, 32 psi.

3. **Looking up specifications** *(document use)*

The remaining front left tire tread is $^{10}/_{32}$".

2. **Reading a tire tread depth gauge** *(numeracy)*

- Perform used car clean up; fill out form.
- Perform pre-owned check over.

1. **Reading a work order** *(document use)*

Answers

For more information on essential skills and to provide us with your feedback, visit

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