

# VOCABULARY

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It's a growing list of words you will need to know along the way. By test time, you should know them ALL quite well. Sometimes you will meet a word while reading and you will have to look it up on your own. When you read a word that you don't know, you MUST look it up and learn it. There is no other way to learn.

Give me a BREAK [not Brake]

I find this mistake all too often. First of all - Cars have **brakes**, not breaks. If a car, or part of a car, breaks, that is not good. When you **brake**, you slow or stop the car. “Brake” and “Break” are actually First Grade words, therefore **written work will NOT be accepted with this error.**

Cars have Front Brakes, Rear Brakes and a Parking Brake [Also called “Emergency Brake,” but it is only used in an emergency under special circumstances, and in a special way. It is not designed to, and cannot, stop a runaway car where the **accelerator** [gas pedal] is stuck. We will learn more when we get to the topic of “Emergencies.”

On long drives, it is well known that a good practice is to take a **break** every two hours. Stretch, use the restroom, get a drink. If you are tired, take a short nap.

## Alternator

Simplified Description: [Do not try to use this to impress a mechanic. This is so you understand what the mechanic might be talking about when you have a problem, or your Dashboard Indicator Light comes on.] It is a very important part of the car's electrical systems. Like a generator, it supplies electricity to charge the car battery. The alternator, which resembles an electric motor, is held in place by a bracket attached to the outside of the engine. It has a pulley which is turned by a rubber belt that runs over another pulley that is turned by the engine. So, the engine must be running for the alternator to generate power. Therefore, you really can't operate a car on just the alternator. That is why there is a big battery to store the electricity, so there will be electrical power to use when the engine is off.

That way, even with the engine turned off, you can have lights and radio on, and even start the car! If your alternator stops working, depending on how much electricity you use, your battery will soon be drained of power, and the car will not run. Power windows have electric motors. With lights on and blower blowing, the battery will run down sooner than if there were nothing using electricity. It is just like “standby” time is a lot longer than “talk” time! However, starting the car uses up lots of power, and even running the engine, which is powered by spark plugs that use electricity, uses up power. So, if your warning light comes on, take it in and get it fixed at your earliest inconvenience, before you are stuck somewhere - and you WILL be stuck somewhere!

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## **Radiator**

The automotive radiator is defined as a device that gives off [radiates] heat very fast. It also cools the engine coolant as it flows from one end to the next. The automotive radiator is part of a closed cooling system under high pressure. The radiator consists of a tank on top and bottom, a pressure cap, a core composed of small tubes that the coolant flows through, and fins that help it give off heat, and a petcock [valve] to drain it for maintenance when needed.

[The middle of the radiator works like the back of a home air conditioner, and looks quite similar.]

The engine burns fuel, usually gasoline, and gets very hot. The coolant is pushed by a water pump that sends it through small holes and passages in the engine, where it picks up heat from the engine. The coolant, still being pushed by the pump, then flows into the radiator, where it flows through the thin tubing and gives up its heat to the air that flows around the tubing and fins. Air flows through the radiator by being pushed by a fan, and/or the forward movement of the vehicle. This continuous process of closed system coolant and outside airflow allows the heat, which the coolant absorbed while circulating through the engine, to be transferred to the air, [atmosphere] and the cooler coolant now goes back to the engine to cool it, over and over again as long as the engine is running. The water pump and fan are powered by a belt and pulley system attached to the engine. Some fans are operated by electric motors, and will run even after the engine is off, so that it still gets cooled down.

## **Perception Time**

The amount of time it takes from when the driver perceives the need to act to the point where the driver initiates the action through braking, steering, or acceleration to change speed or position. It is dependent upon, and varies with, the condition of the driver. Impaired drivers lag in their perception time.

## **Reaction Distance**

Based on the Reaction Time, it is the Distance the vehicle travels from the point the driver perceives the need to act and the point where the driver takes that action through braking, steering, or acceleration. There is ALWAYS some delay. However, it is dependent upon, and varies with, the condition of the driver. Impaired drivers lag significantly in their perception time. They do not pick up on clues, such as lane weaving, oncoming traffic headlights flashing, horns honking, etc.

Reaction Distance is the Distance your vehicle travels until the driver perceives the need to change speed or position. This is always at the full speed while the driver is [or is not] realizing/perceiving there is a problem or conflict ahead, and before they apply the brake. New drivers, with less experience, take longer to perceive or realize or figure out that there is a problem ahead, than experienced drivers. Distracted drivers who are busy with other tasks, are late to perceive problems and are traveling at full speed, going quite a distance, before they do realize it, or it is just too late to do anything and they crash. Any impairment will delay the reaction, while going at full speed.

## **Braking Distance**

Once the brakes are applied, it is how far the car travels, until it stops completely. Braking distance varies with conditions. There are accepted standards for braking distance for the average car with good tires, good brakes on a good, paved, dry road.. See also: Stopping Distance.

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## **Stopping Distance**

This is the TOTAL distance traveled from when a problem is perceived, the brakes are applied, and the brakes actually stop the car completely. Stopping distance varies with the condition of the driver, the condition of the tires, the condition of the brakes and the conditions on the roadway. It is the sum of the Perception, Reaction and Braking distances. In bad conditions the distance is tremendous.

## **Scanning** [Searching]

Keeping the eyes moving from 15 – 30 seconds ahead in the path of travel as well as side to side, the rearview and side view mirrors, vehicle reference to lane position, and the instrument panel [less often, but to notice warning lights or speed issues] toward the target area as the driver travels ahead. The target area is constantly ahead, like the end of a rainbow, as the vehicle is constantly moving in that direction and traffic is always moving toward the driver and is always changing around the driver. Therefore, the driver must always scan while in the car, exiting the car, entering the car, approaching the car, just as a pedestrian must be aware of their surroundings. Scanning is related to: **Visual Lead Distance//Eye-Lead Time:** [15 – 30 Seconds Ahead ] By looking far ahead of where the driver will be within the next 15 – 30 Seconds Ahead (Scanning/Searching) – the driver can Identify objects [vehicles, pedestrians, traffic signs, signals, etc.] that require a change in speed or direction, even before the brake lights on the cars ahead light up! If there are no cars in front, then the driver just maintains their awareness. Being surprised when driving is bad.

## **Traffic Control Devices**

Devices used to control the movement of traffic, such as, traffic signals, signs and roadway markings.

## **Highway Hypnosis**

It is NOT the same as fatigued or drowsy driving. Click the link.