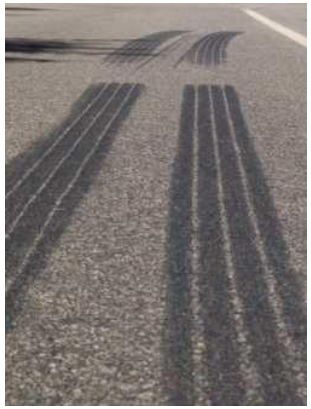
THREE KINDS OF IMPRESSIONS



i. **Patent** impressions
   1. Visible, **two**-dimensional marks formed from soil, dust, paint, blood, ink, etc.

ii. **Latent** impressions
   1. Hidden to the naked eye but can be visualized through the use of **dusting** or electrostatic techniques.
   2. Like latent fingerprints, they are often caused by **oils** or microscopic dirt particles depositing on a surface.

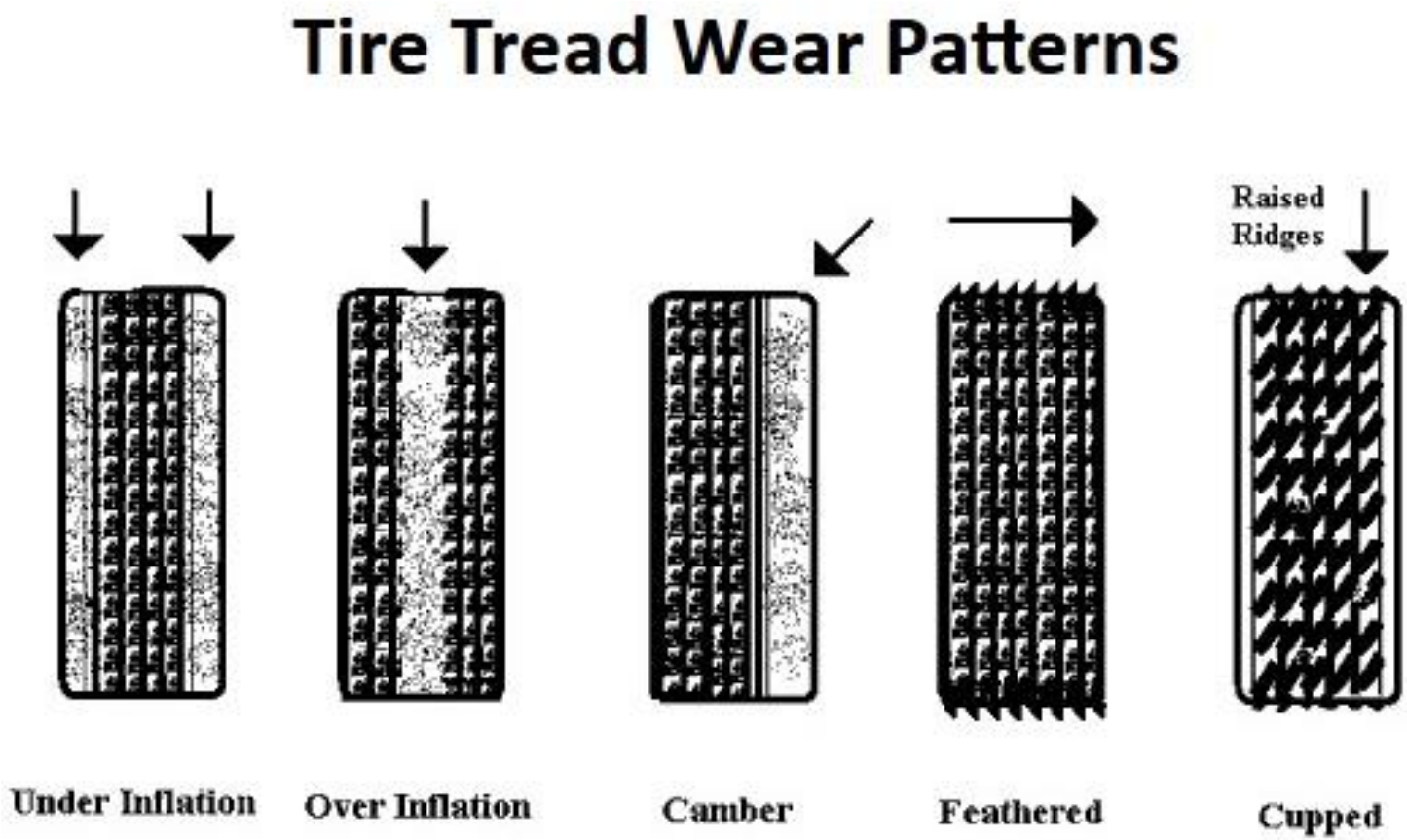
iii. **Plastic** impressions
   1. **Three**-dimensional imprints left in pliable materials such as **snow**, mud, soil, or soap.
   2. As a result of the soft substrate, these prints can often be **lost** (melt or blow away) and should be photographed immediately.

TIRE IMPRESSIONS

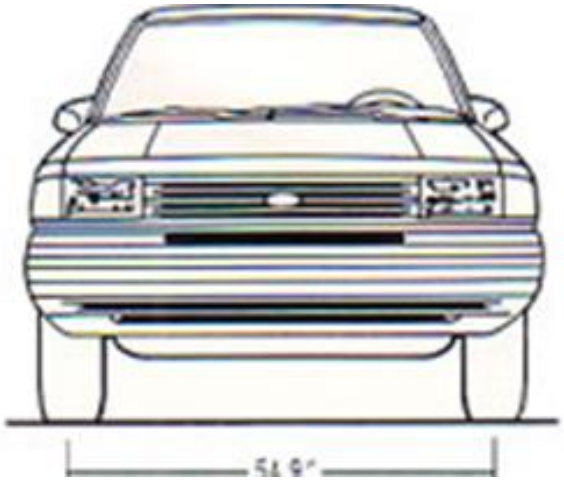
a. Tire evidence can be used to link a suspect to a crime scene and also to help the crime scene investigators reconstruct the crime.
b. Like other impressions, tire marks may leave patent, latent, and plastic markings.
    i. Patent impressions occur when a car travels over a **liquid** such as paint, blood, or tar.
    ii. Latent tracks can be deposited from the **oil** used to soften tires.
    iii. Plastic impressions can be made when a vehicle drives on **mud**, **sand**, or **snow**.

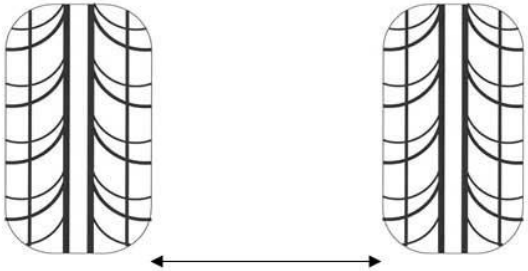
c. Tire treads are ridges and **grooves** that channel **water** away from the wheel and provide **traction** for the vehicle.

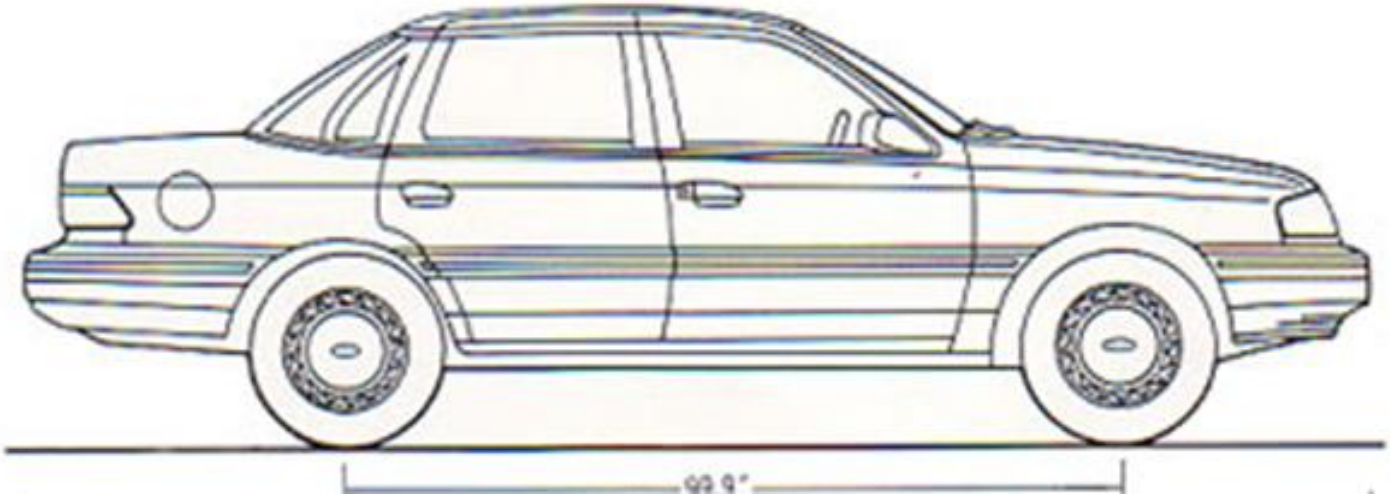
i. Tread patterns can be measured and used to identify the type of tire, and sometimes even the make and model of the vehicle that left the mark.



d. To help identify a vehicle, investigators measure track **widths**, wheelbase **lengths**, and turning **diameter** and check them against a vehicle database.







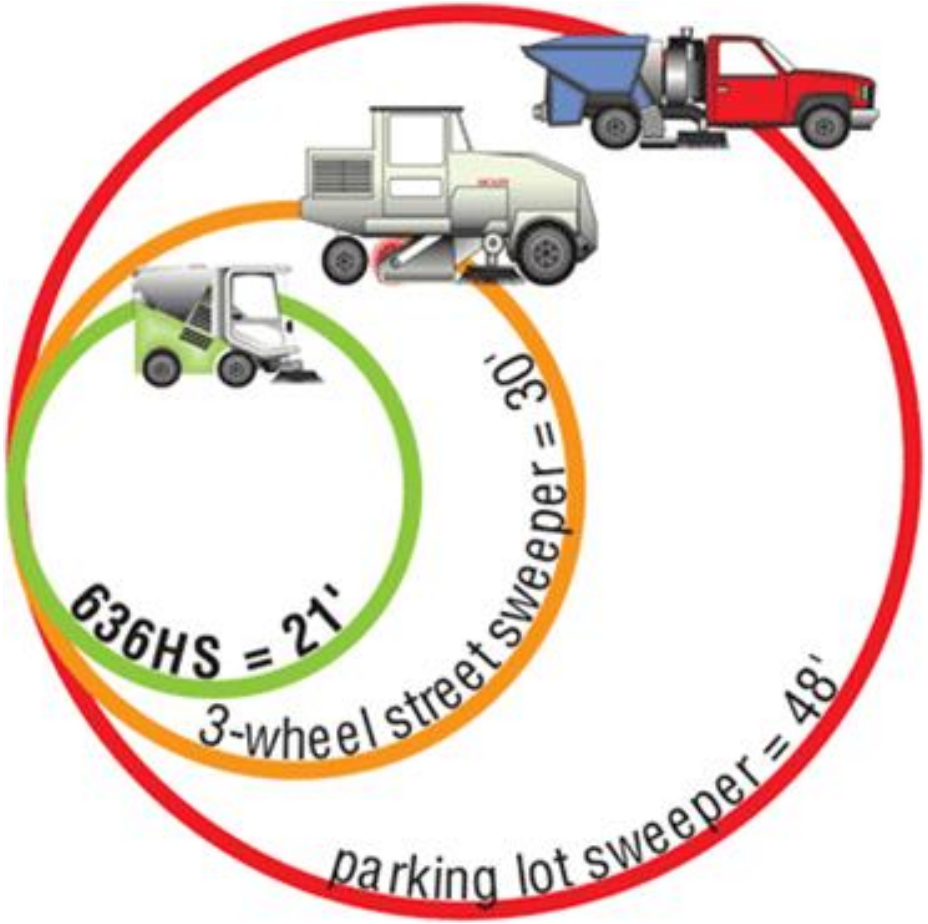
CRIME SCENE DO NOT CROSS

i. Track width- the distance from the **center** of one tire to the center of the other tire.

1. Front and rear track widths may **differ** so both should be measured.

ii. Wheelbase- the distance from the center of the front **axle** to the center of the rear axle.

ii. Turning diameter- the amount of space required for the car to make a **sharp** U-turn.



CRIME SCENE DO NOT CROSS

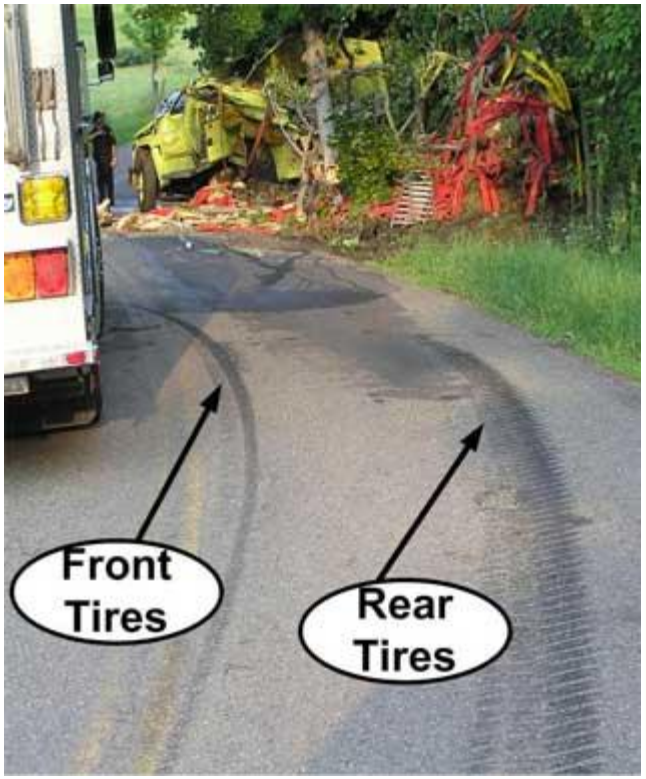
e. Tire marks can also give clues to **speed** and **direction** of the vehicle.

i. Skid marks

1. Form when a driver slams on the breaks suddenly.
2. Skid marks show the distance he vehicle traveled after the brakes were applied.
3. Skid marks can help calculate the speed of the vehicle.

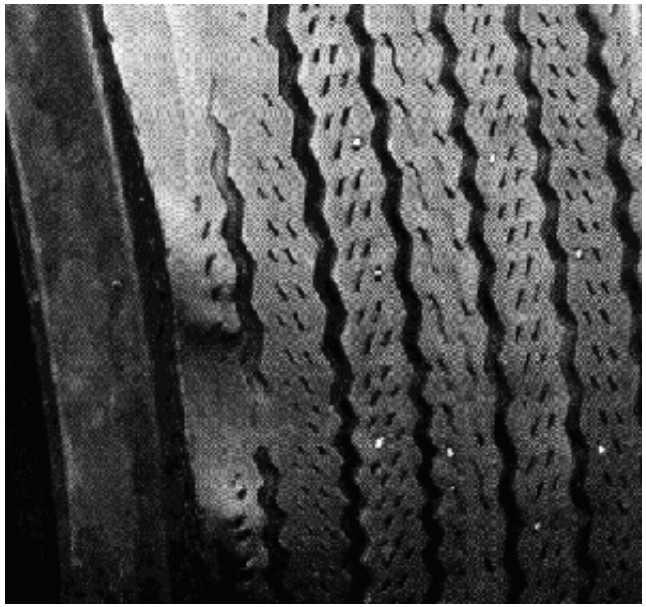
ii. **Yaw** marks

1. Sideways skid marks, produced when a vehicle turns faster than it can handle.
2. Often accompanied by smoke and squealing sounds.



iii. Tire **scrubs**

1. Damage to tires can show the area of impact.



Video Clip

CRIME SCENE DO NOT CROSS

e. Investigators will use information provided by evidence to try to reconstruct an accident. Their overall goals are to determine:

i. What happened? When did it happen? Why? How? Who was involved? How fast were the vehicles travelling? Who is at **fault**?