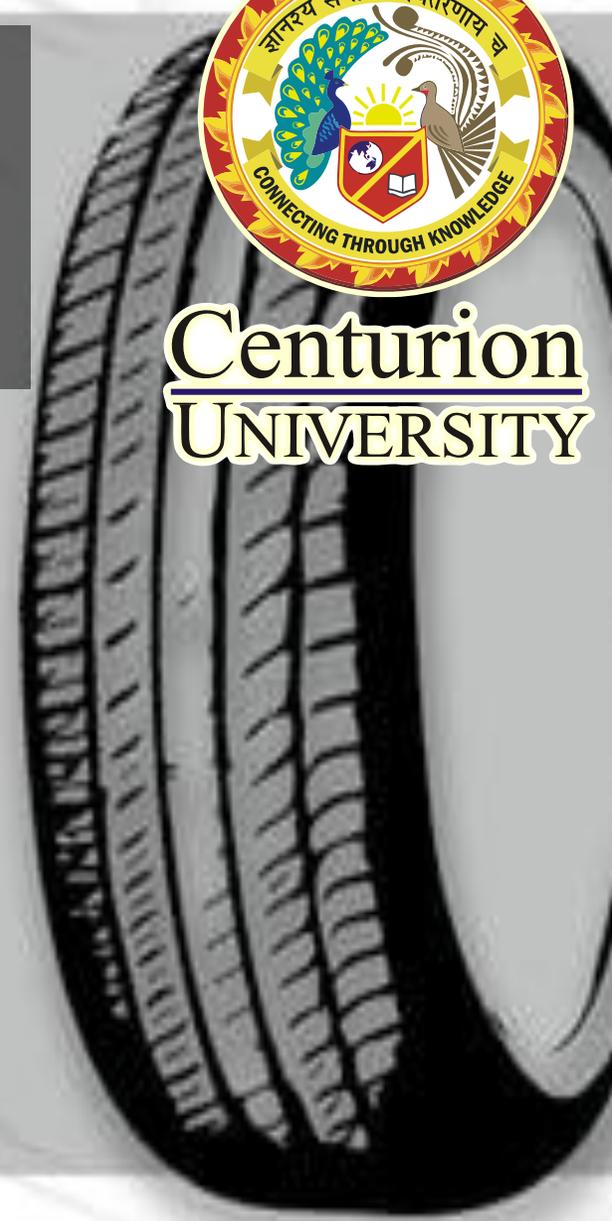


# COLLECTION AND PRESERVATION OF TYRE IMPRESSION



**Centurion**  
**UNIVERSITY**



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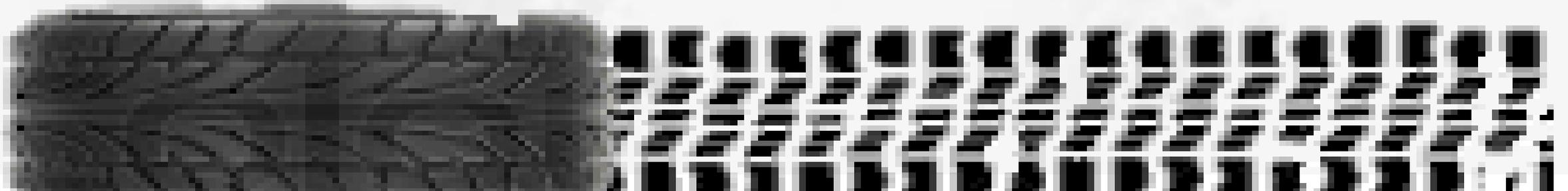
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# INTRODUCTION TO TYRE MARKS

- As we know from Locard's exchange principle, that whenever two objects come in contact, a transfer of material occurs.
- Tire tracks are the impressions left by tires on the surface onto which a vehicle drove.
- But tires don't leave impressions on every surface.
- If the surface is soft or semi-soft, such as mud, dirt, or snow, the tire will leave an imprint under the weight of the vehicle.
- And if the surface is hard, such as road pavement, the tire might still leave a trace, if dirt or dust will be there.



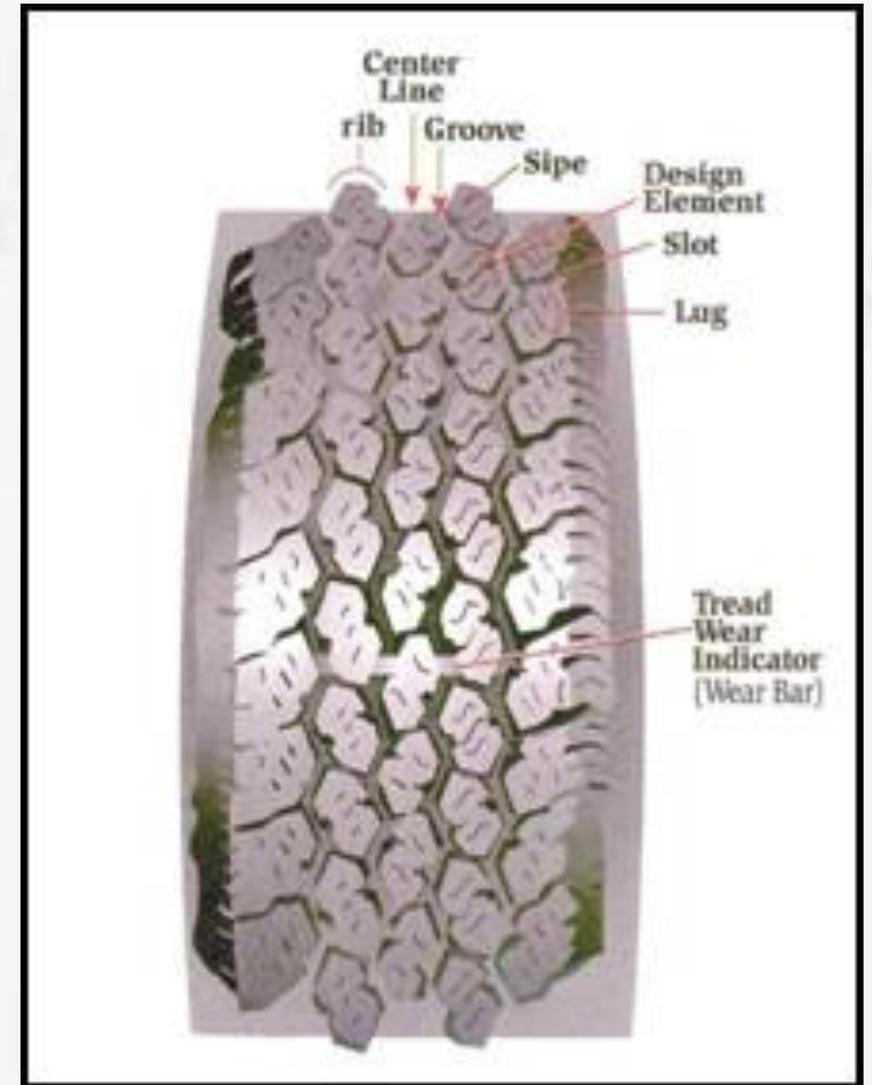
# CHARACTERISTICS OF TYRES

- Tyres are made of semi-hard rubber and are characterized by class and individual characteristics.
- Class characteristics includes size and general patterns.
- Whereas Individual characteristics includes regular wear and tear as well as accidental cuts or holes.
- These characteristics may be reproduced in the tracks left by the tire, depending on the surface and the circumstances under which the track occurred .
- There are two kinds of tires present.
  - \*Original Equipment Tire (OET) which are preinstalled to the vehicle at the factory. In this case all the four tire track will have same mark.
  - \*Replacement Tyres are the tyres that are purchased to replace the OE tires  
Not necessary that all the four marks will be same.



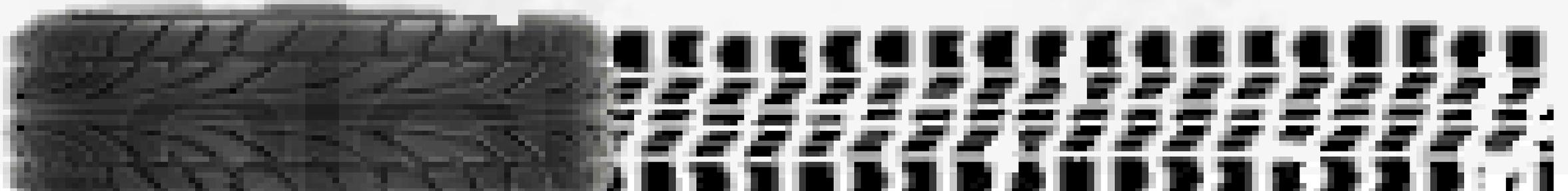
# CONTD.

- Grooves are those which are present around the tire.
- Slot are those which present across the tire.
- Sipe marks are the small grooves present.
- Tread wear are the small marks on the design.



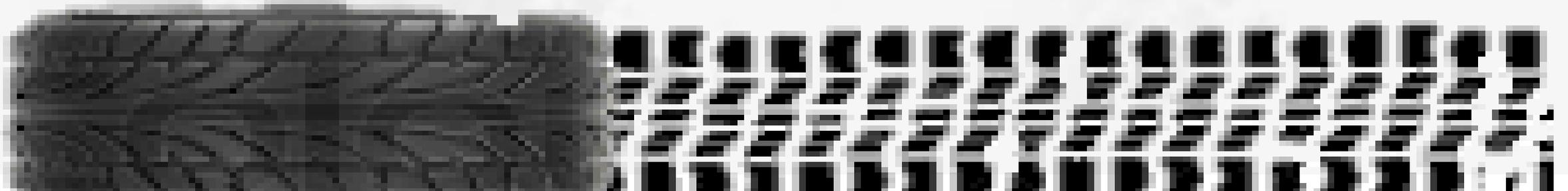
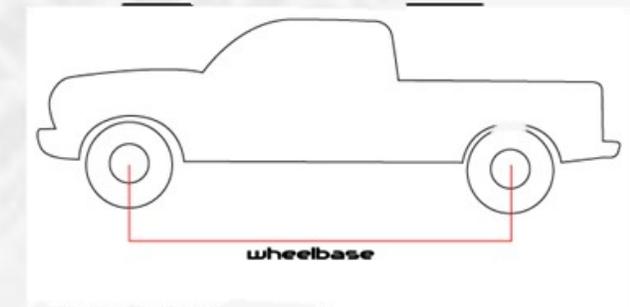
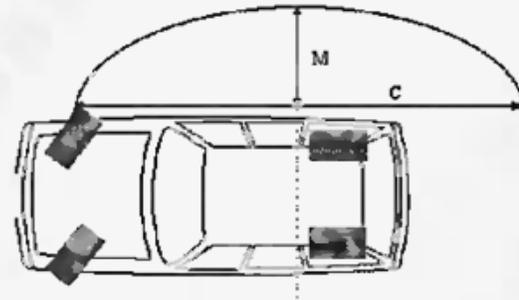
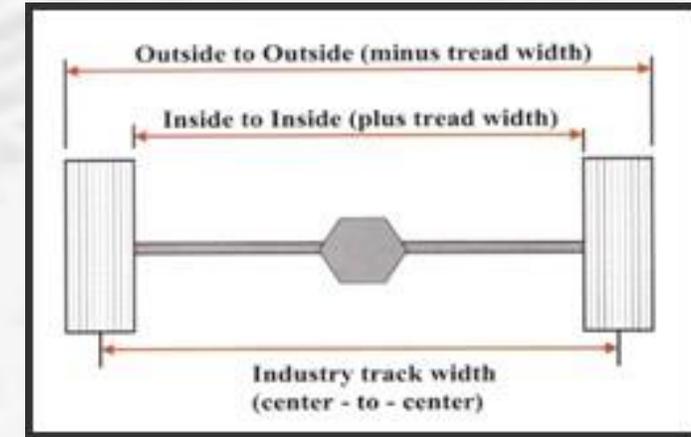
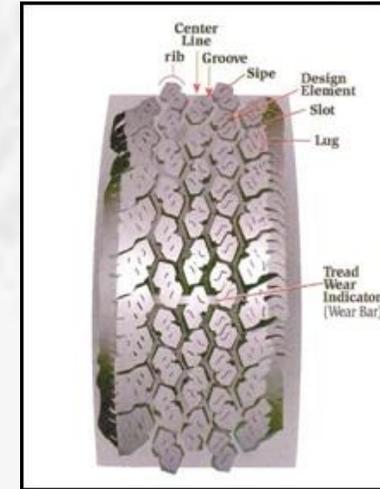
# WHY TYRE MARK IS IMPORTANT?

- Just like fingerprint, shoe print or any other print, the tire tracks are also an unavoidable part of crime scene investigations to enable identification of the vehicle that left them.
- Tire tracks are usually found in road accident scenes or in the access and escape routes of other crime scenes.
- By going with proper investigation it is easy to find the vehicle used to commit the crime or else which vehicle was used for the getaway or to dump the body or to dump any evidence.
- We can also get sure about the suspect by matching the tire marks found on the scene with the one taken from the vehicle.



# TIRE MARK EVIDENCES

- The most common evidence is the tire pattern like Grooves, Slot, Sipe, Tread etc. that can be matched with the suspect car's mark.
- Track width should be measure from Left center to the right center.
- Wheel base should be measured from front center to back center.
- Turning diameter is observed on the basis of diameter Of the circle made when wheels are fully turned.



# COLLECTION OF TYRE MARKS

- When tire tracks are present at a crime scene or in the immediate vicinity, one must properly observe and record them. First, they need to be photographed at a 90-degree angle. This allows for a permanent record of their class and individual characteristics.
- The measurements like tire width, track width, wheel base and turning radius should be taken carefully. If the length is long than multiple measurements should be taken for the shake of confirmation.
- If a tire leaves rubber residues on the surface, as is the case with skid marks, crime scene investigators can collect these traces and compare them with the tires from a suspected vehicle.
- The result of this analysis is not powerful as all the tires made on one batch carries the same chemical composition.



# CONTD.

- Examiners use several methods for collecting tire track evidence depending on the type of impression found.
- For impressions in soil, snow or other soft surfaces, casting is the most commonly used collection method.
- For imprints, examiners generally try to collect the entire object containing the imprint, such as a whole sheet of paper or cloth having the tire print.



# PRESERVATION OF TYRE MARKS

- Photography is the most prior method to preserve the marks if they are completely visible.
- For impressions in soil, snow or other soft surfaces, casting is the most commonly used collection method for 3D prints.
- Than different lifting techniques are there used for 2D prints.



# THANK YOU...

FOR LISTENING...

