



YOYO

Aim: Introduction to Tire Treads

January 2, 2018

HAPPY
NEW
YEAR



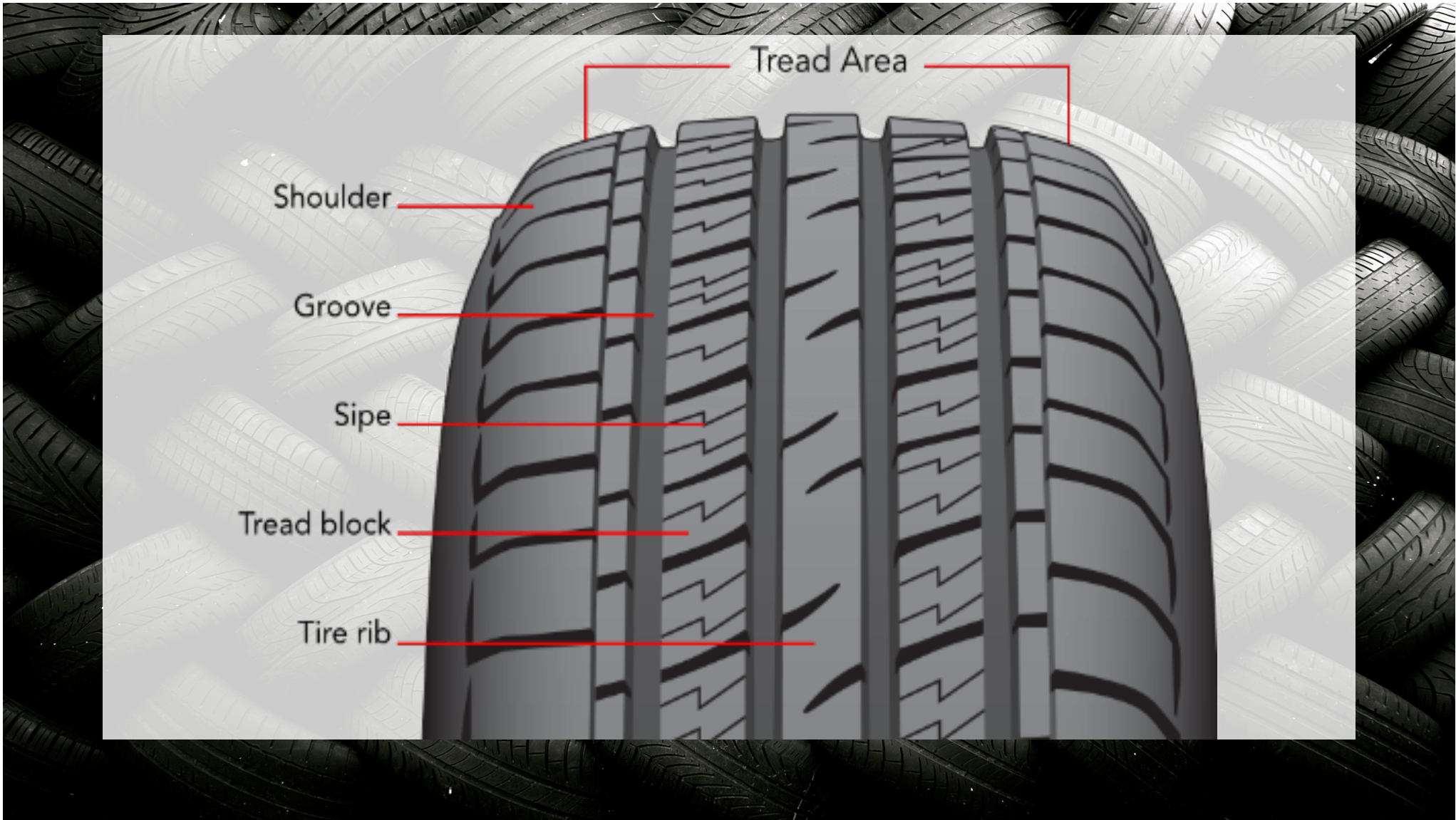
Tire Treads and Impressions

- Tire treads
 - ridges and grooves channel water away and provide traction
- Made of Ribs and Grooves
 - **Ribs** – the “ridges”
 - **Groove** – the “valleys”



Tire Treads and Impressions

- **Can be Patent, Latent, or Plastic**
- Tread patterns can indicate the type of vehicle that left the mark
- Link a suspect or victim to a crime scene
- Reveal events that took place at the scene



Tread Area

Shoulder

Groove

Sipe

Tread block

Tire rib



Recording Tread Impressions

- Count ridges and grooves across the tire width
- Note unique characteristics—wear or pebbles embedded in the grooves
- Create a print of the suspect's tire impressions through one revolution
- Compare impressions from the crime scene and suspect's tire

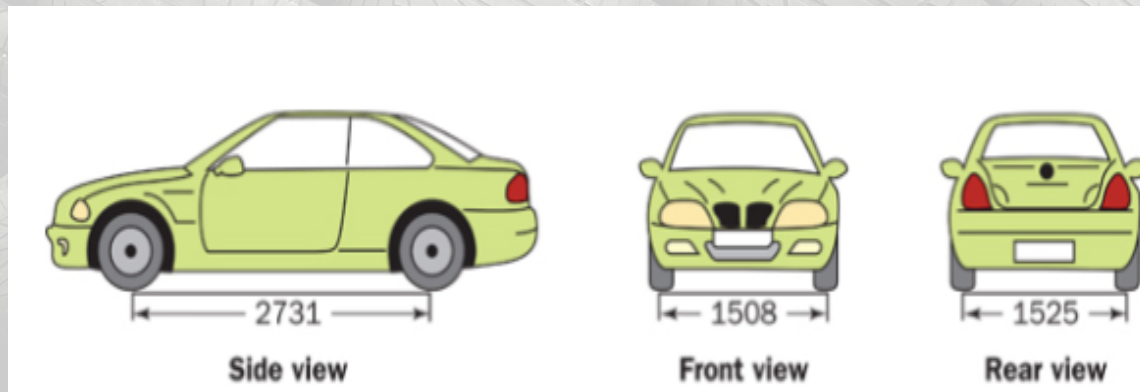
Identifying a Vehicle

- **Track width**

- From center of tire to center of tire

- **Wheelbase length**

- From center of front axle to center of rear axle



Identifying a Vehicle

- Turning diameter
 - The space needed to turn the car in a complete circle

Figure 16-12 Tread marks revealing turning diameter can help identify a vehicle. Which of these vehicles has the smallest turning diameter?

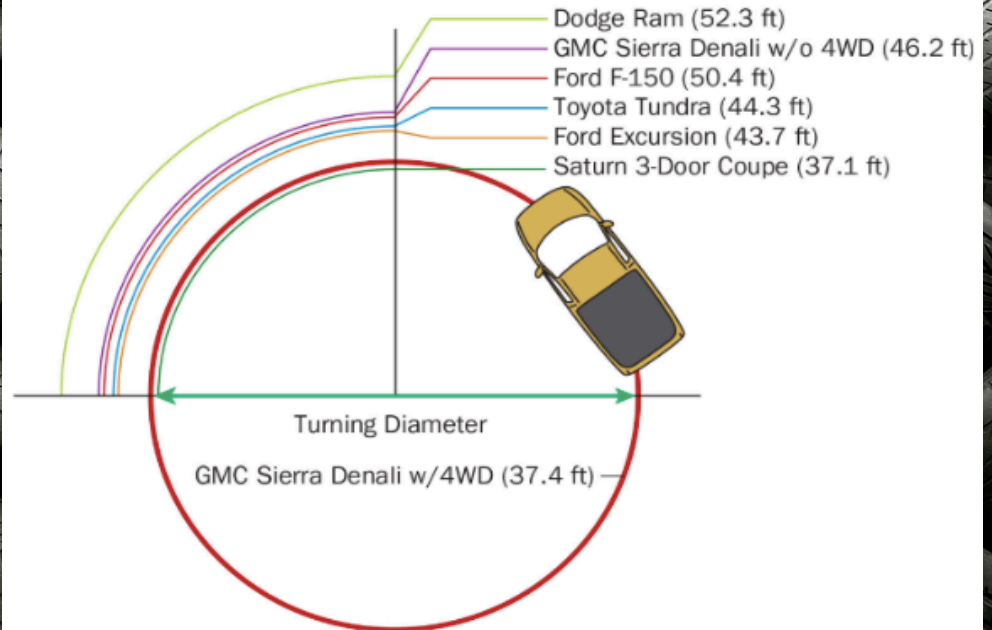
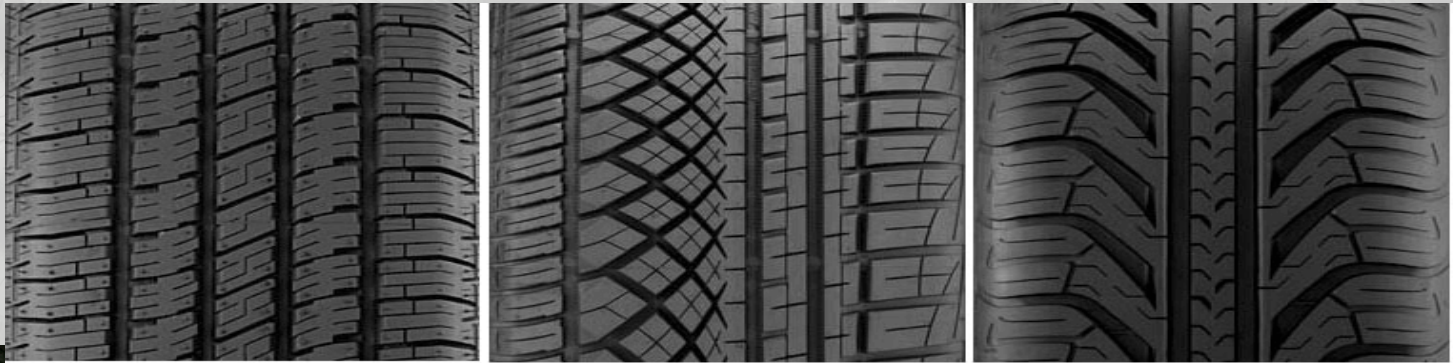


Figure 16-13 Examples from a database of automobile statistics by make and model.

Make	Model	Wheelbase (mm)	Turning Diameter (mm)	Tire Size (mm)	Tire Make
ALFA ROMEO	Alfa 156	2,595	11,600	185	Michelin Energy XH-1
AUDI	A4	2,617	11,100	195	Michelin Energy MXT
AUDI	A8	2,882	12,300	225	Michelin Pilot CX
BMW	3 series	2,725	10,500	225	Michelin Pilot HX
CADILLAC	Seville	2,850	12,340	235	Goodyear Eagle Touring
CHEVROLET	Blazer	3,122	12,600	205	Uniroyal Tiger Paws
CHEVROLET	Corvette	2,444	12,200	285	Goodyear
CHRYSLER	Grand Voyager	3,030	12,500	215	Goodyear NCT2 Touring
CHRYSLER	Neon	2,642	10,800	175	Goodyear Eagle NCT2
DODGE	Viper	2,444	12,300	335	Michelin Pilot SX MXX3
FERRARI	550	2,500	11,600	295	Pirelli P Zero
FORD	Escort	2,525	10,000	185	Michelin MXV2
FORD	Focus	2,615	10,900	185	Pirelli P6000
FORD	Galaxy	2,835	11,700	215	Conti Sport Contact
HONDA	Accord	2,720	11,000	185	Pirelli P4000
HONDA	Civic	2,620	10,200	175	Dunlop SP9
HONDA	Prelude	2,585	9,400	205	Yokohama Ao85
HYUNDAI	Excel	2,400	9,700	175	Hankook Radial 884
INFINITI	J 30 t	2,761	11,000	215	Dunlop SP Sport D31
JEEP	Grand Cherokee	2,691	11,100	245	Goodyear Wrangler HP
LEXUS	GS 300	2,780	11,800	275	Yokohama
MERCEDES	A	2,423	10,300	175	Goodyear GT

Types of Treads

- **Symmetrical**– most common design
- **Asymmetrical**– better traction in wet and wintery weather but wears unevenly
- **Directional**– moves water and slush away efficiently if put on correctly



Need New Tires? Ask Abe

- **The Penny Test**

- In the United States, tire tread depth is measured in **32nds** of an inch
- New tires typically come with **10/32**" or **11/32**" tread depths
 - Some truck, SUV and winter tires may have deeper tread depths than other models
- The U.S. Department of Transportation recommends replacing tires when they reach **2/32**", and many states legally require tires to be replaced at this depth.

Need New Tires? Ask Abe



Tired Tires

- Just like shoes, the wear patterns can tell you a lot about the tire





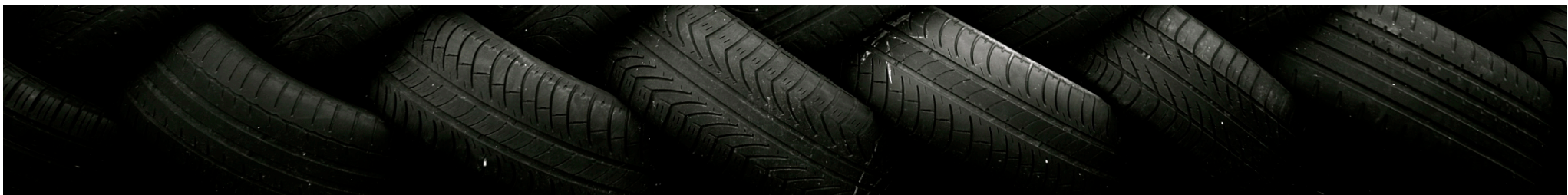
Performance /
summer

All-weather

Wet weather

All-terrain

Mud



All Season

Year-round traction for wet, dry and icy conditions



Winter

Enhanced traction for snowy and icy conditions



Performance

Increased traction and comfort at higher speeds



High Performance

Superior handling and dry road grip at high speeds



Light Truck

Designed for heavy loads and off road traction and comfort



Touring

Designed for a smooth, quiet comfortable ride.





SUMMER

RIB: Part of the tire tread pattern created by grooves that run circumferentially around the tire.

Sipe: Slits or small cuts in the surface of the tread improve traction.



WINTER

Groove: Circumferential channels between the ribs of a tire tread enhance water evacuation.



ALL-SEASON

Shoulder Block: Raised rubber compound segments on the part of the tire tread nearest the sidewall.

Block: Part of the tire tread pattern made of raised rubber compound segments.

