

And back to straights using no grip.

~~2~~

2 Load Sensitivity in Tyres.

→ Why Doubling vertical load doesn't double grip?

↳ Increasing vehicle load

1. Contact patch gets larger
2. Pressure inside increases.
3. Pressure distribution becomes uneven.

So the patches reach saturation earlier.

Additional load - Diminishing results.

↳ Grip comes from rubber deforming in ~~in~~ ~~surround~~ ~~surface~~ rough surface.

↳ Higher load results:

1. Harder compress on rubber
2. Increased internal decomposition
3. Shear stress doesn't scale linearly.

At a point rubber can't produce force proportional.

→ Why total grip reduces with load transfer?

↳ Equally split weight, won't affect grip as the grip can be scaled linear.

↳ Imbalanced weight split, each tyre receives different force hence:

1. Heavy loaded tyre - less efficient
2. Lightly loaded tyre - under-utilised.

↳ Balanced distribution - keeps tyres operating in efficient load range - independent ~~wear~~ wear.

Minimum load sensitivity

Maximum total ~~axle~~ axle grip.

3 Load Transfer:

→ What is weight transfer?

↳ Acceleration
Brake
Left
Right

} when car moves in one of the direction weight/load moves to the opposite direction.

- ↳ Only thing that holds car to road is the vertical load
- ↳ Total weight of the car is not changing, but the distribution

1).

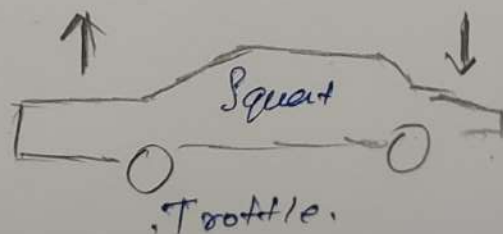
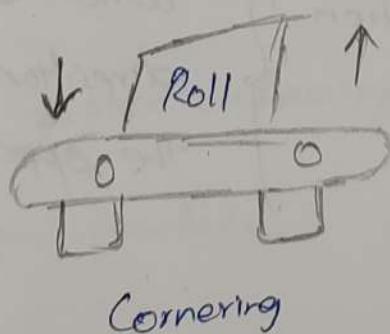
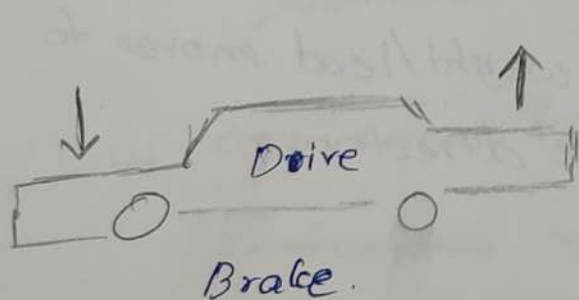
↳ Cars across the circuit does the lot below 3:

1. Drive
2. Roll
3. Squat

Drive - The front of the car goes down or front suspension compresses - ~~not~~ happens when braking.

Roll - As the car turns the corner, weights move from front ~~to rear~~ and to the ~~the~~ outside tyre. - As it approaches the apex the weight b/w front and rear is equally distributed on one side.

Squat - As the car gets off the corner and the weight moves from outside to the rear - the rear sits down.

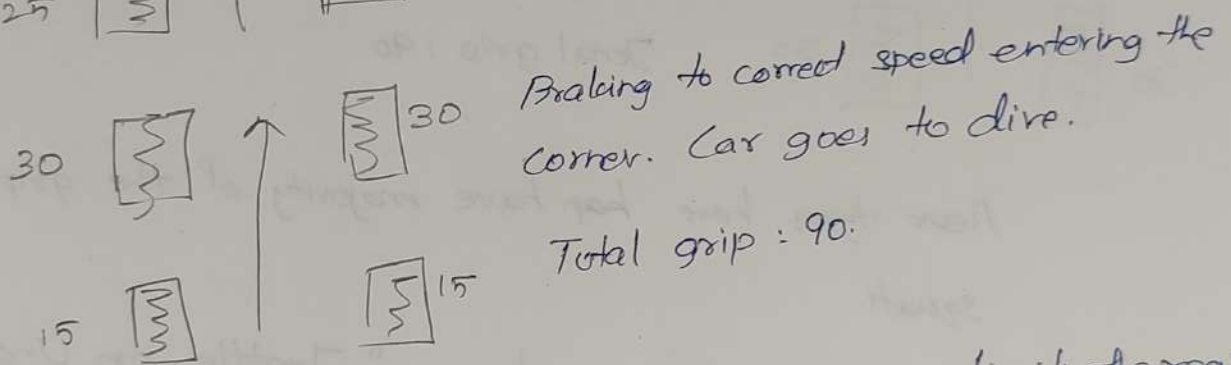
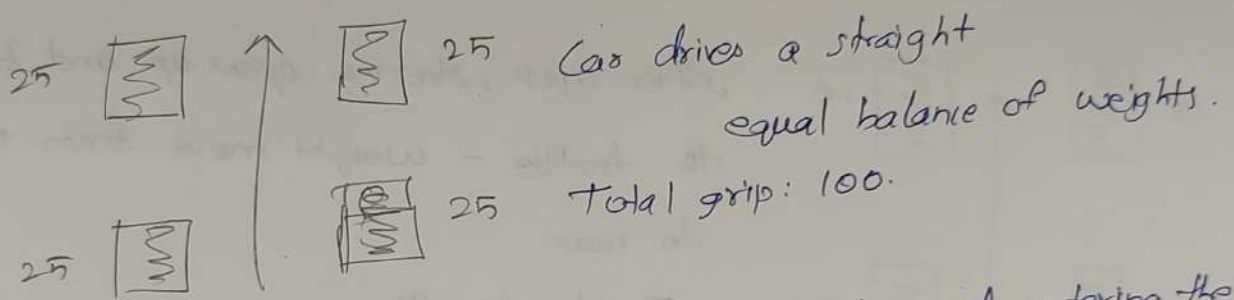


→ How weight transfer affects grip?

↳ More weight that the car has over one area, ~~of the~~ ~~car~~ as it dives, rolls or squats more grip the region has.

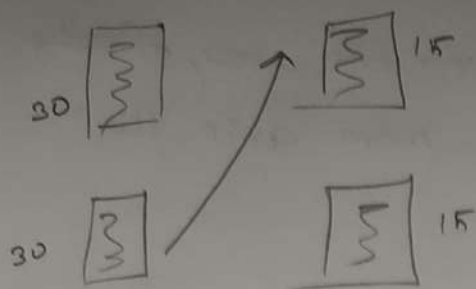
↳ Transfer of grip to one area takes away the grip of the opposite area.

↳ Example execution of weight transfer at play.



Entering the corner in such a way limits the rear grip. Rear traction breaks before front - limiting speed to take into corner.

- Smooth technique is to release brakes shifting weight to balance again - more units of grip on rear - faster corner entry.

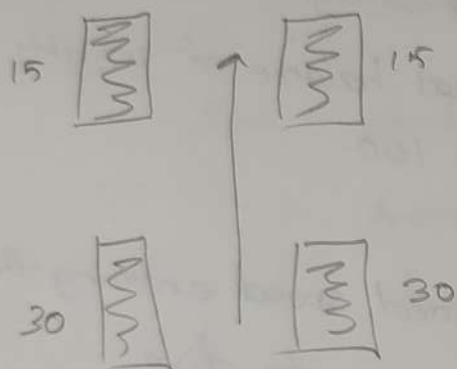


Car coming into apex - even weights in front and rear, rolled over to the outside.

Total grip: 90.

Inside has much less grip, this is why ~~running~~ running over curbs is possible to get away.

- Outside tyres does the work to turn.



After apex, steering opens up and back to throttle - weight move from outside to rear.

Total grip: 90

Rear tyres here have majority of the grip. Car squats.

- A problem occurs here "Throttle-on Understeer" front tyre slides as you exit the corner.
- No driving technique based handling for this type of understeer. Only option is with set-up change.

→ Maintaining Balance.

↳ Whenever there is a ~~use~~ load transfer the grip level reduces.

↳ Making the inputs (turning, acceleration, ~~braking~~ braking) smooth than sharp transfers less weight maintaining high grip levels all the time.