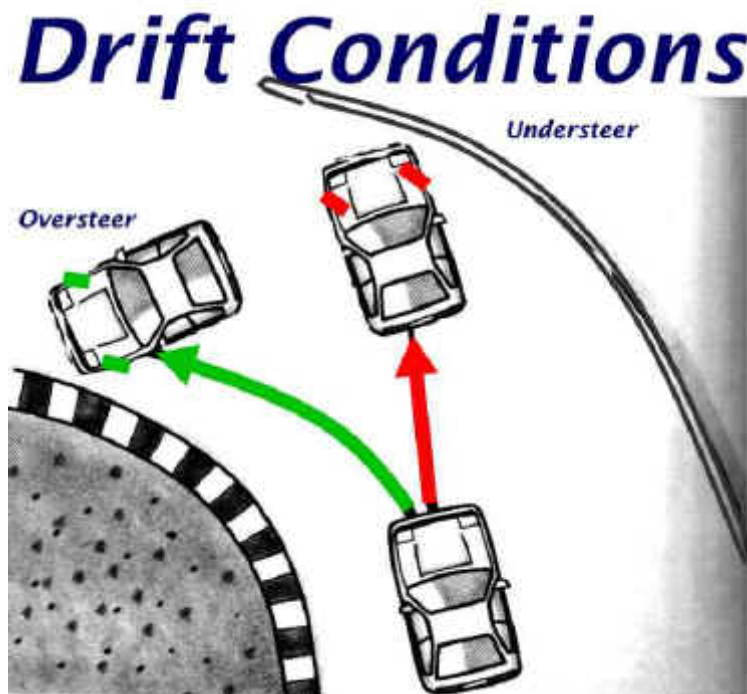


DRIFTING FOR REAL [HTML](#)

Understeer, Oversteer... the basics of sport driving.

A "drift" is a condition of a car, when pushed beyond the tire's limit of adhesion, exhibits a lateral slip. Or simply put, a car that has gone sideways. There are many instances where this might happen, and generally speaking, all of these conditions describe a drifting condition. Speeds required to induce such condition need not be high. Some of us have experienced speeding into a turn on a rainy day and felt the car slide sideways a bit. And some others might have tried to turn an intersection on icy road and felt it not turn. The loss of traction can be either front tires, rear tires, or both. An "understeer" is described as loss of traction at the front wheels, and "oversteer" at the rear tires. A "four wheel drift" is a condition of both of the above. In racing, all forms of drift are used consistently to shift a car's behavior, but generally speaking, excessive drift is undesirable when running a car against the clock. But to many, recovering from an excessive drift is a thrill and is a skill that is useful in all fields of racing. In short, it's the ability to recover control of a car that has been pushed too far. We will cover on this page, all different drift patterns, it's principles and techniques.

The understeer drift is usually the most common drift that most of us have experienced. This is because most production cars as well as race cars exhibit this behavior when the steering input is greater than the front tire's ability to hold onto the road. It is common because most of us have encountered a situation where we try to avoid a collision with an unanticipated obstruction in the road. We turn the steering wheel suddenly, and the front loses grip. Then we notice the car hasn't turned in that direction very well



so we cut the steering some more, still to no response. What happened? Well, a tire has to be rolling in order to turn in the steered direction, thus front tires locked up with the brakes will only move toward the vector (direction) of the car's momentum... In this case, nearly straight. Second, the tires can only turn with enough force provided by the front tire's grip, and beyond that steering more will not help the car turn as the front tires slide in the vector of travel. However, production cars are usually set up with a strong tendency to do so. Why? Well this condition is very easy to correct...by slowing down and more drivers can recover from an understeer. Many race drivers prefer a mild understeer setup also so small mistakes won't affect overall outcome of the race.

This brings us to the next form of drift...an oversteer. It is a rear tire's loss of traction. It's called oversteer because the car turns more than the steering input due to the rears sliding outwards...pointing the car toward the inside of the turn. To recover from this condition, one must "counter-steer," or turn the steering in the opposite direction, precisely and maintain control of the attitude. Too much correction will cause a sudden oversteer the opposite direction and not enough will slide your car out of desired path.

Understeer:

- Too much brakes-locked front wheels
- Not enough braking-no weight transfer
- Need to decrease speed and gain traction to stay on the road
- Cannot accelerate until understeer stops
- Requires driver to wait until front gains traction
- No FUN

Oversteer

- Too much weight transfer to front
- Needs counter steer to stay on road
- Can accelerate moderately
- Requires precise driver input
- Really FUN

The fun drift...

Most of us see drifting as fun because seeing controlled tail-slide cornering is indeed exciting. In World Rally Championships and other low-traction surface racing, we see cars slide from side to side, and it is this form of excessive oversteer that we have come to love. In many countries (except the USA for some reason) there are competitions in drift control. Contrary to popular belief, almost any car can do these drifts. Also, a car need not be going very fast to exhibit this behavior. How? read on...

So you wanna drift....

OK let's go back into the physics a bit more. A tire will grip better when the car's weight is loaded on it. So braking into a turn with front suspension loaded, will turn the car more aggressively. Thus the first step is to initiate a high 'g' cornering force without over-applying the brakes. (Just enough braking to not lose the front) During this phase, the rear tires have very little traction, and small inputs to break the traction will cause an oversteer as long as there's enough centrifugal force from the turn. Let's look into some ways the rear tires are broken loose, or slid out.

Many drift contestants will use the hand brakes to break the rear. This method is popularly called the "side-turn" or "e-braking" (referring to emergency brakes as side brakes are called in some communities). This is widely used in autocross and it's more technical counterpart, the gymkhana, to get around a very low speed turns and u-turns. It's also a good way for novice drifters to experience oversteer without high speeds.

The more advanced form of drift is the yaw-moment drift. The rear tires break free because of the sheer cornering force and driver's ability to distribute the car's weight precisely. This is the technique used in rallying where a car will slide from higher speed into a corner to point the car correctly for the exit of the turn. Often the car is completely sideways even before entering the turn. And at other times, the car will appear to be turning in the opposite direction, and then it's whipped back to create a larger drift angle, using counter-rotating force. In this case, the car is rocked from one side to the other creating enough yawing motion to break the rear tire's traction. These yaw moment drift requires higher speeds and more accurate controls as driver is required to sense and correct weight shifts and steer angles at a much faster pace. The higher the grip of the surface, the more abrupt and sudden the changes will be and more challenging due to higher speeds. Also the higher the grip there's more tire wear and loss of speed while drifting. (This is the reason, you don't see massive drift angles in road races and tarmac stage events, it's both tricky and not a very efficient use of tires) But nevertheless, the weight shift and drift are always a part of running a car to it's full potential.



Wanna know more?

The only true way to understand and experience the fun of drifting is to practice yourself. There are local autocross and gymkhana, as well as track sessions where you can really gain knowledge and practice safely. It's a risky and potentially hazardous deal to practice on public road... Remember? You are trying to lose control of a car...so you can practice getting back in control. Why would you want to practice it where you might hit something...or someone...

In the USA, SCCA hosts local events anyone can enjoy for as little as \$20 per day! And for those wanting more speed, there are organizations hosting open track days at numerous race courses with full safety support and coaching...for about \$100. For those of you thinking that's expensive... consider this. How much did you pay for that last speeding ticket? Or, that accident and resulting insurance premium? \$100 to run as much as 50 laps in a small racetrack is cheap!...

One more thing to note... Club 4AG has now assistance of www.speedtrialusa.com to bring you track time... You can take your daily driven cars off the road and on to a race track. It's much safe than running from the police and dodging canyon walls and cliffs as well as opposing drivers... The details are there...

The best events to go to for drifting is the Buttonwillow Raceway Events and also Streets of Willow Springs events, hosted by Speed Trial USA... Go there