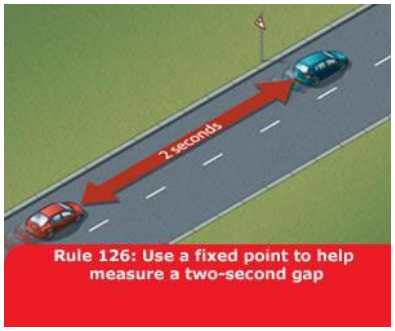
Why do we leave a 3 second gap on a dry road surface?

Highway Code Rule 126 embodies the well-known phrase:

Only a fool breaks the two second rule!

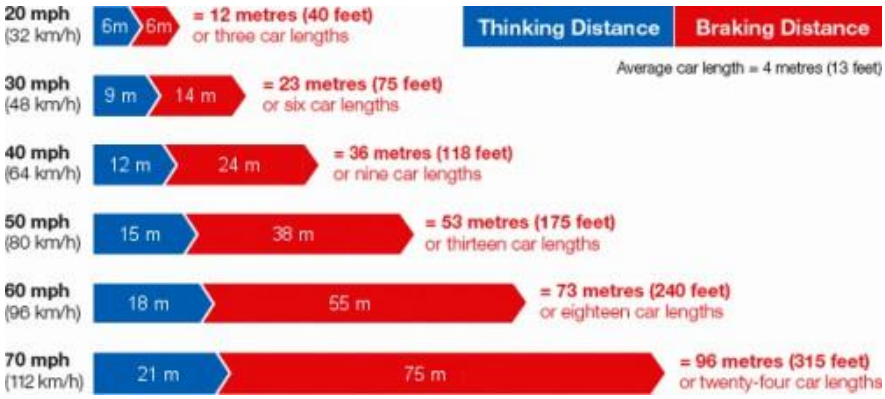


Rule 126: Use a fixed point to help measure a two-second gap

Why then do Advanced Drivers leave a 3 second gap when driving in dry conditions?

The simple answer is that the '2 second' gap is a minimum following distance; therefore, if you have a 3 second gap you are complying with HC Rule 126, but with a greater safety margin. However, there is more to it than that!

HC Rule 126 gives a Table showing Thinking Distance; Braking Distance and Overall Stopping Distance for speeds up to the legal maximum speed of 70mph.



Thinking Distance is the distance travelled by the driver during the time it takes to react and before applying the brakes. It increases linearly with speed and assumes that **Reaction Time** will be the same irrespective of the speed at which you are travelling. Everyone is different and our Reaction Times can vary from day to day, but the Table assumes an average Reaction Time of 0.675 seconds, which is reasonable for the population of drivers in general.

Braking Distance is the distance travelled during the braking period.

Overall Stopping Distance is the sum of the Thinking Distance and the Braking Distance and is therefore the overall distance travelled between the driver recognising the need to brake and the vehicle coming to rest.

It is often said that since this Table was produced, car brakes have improved significantly therefore there is an argument for reducing the Braking Distance and the associated Overall Stopping Distance.

It is true that brake technology and effectiveness have improved significantly with the advent of Anti-Lock Brakes (ABS); Traction Control (TC); Electronic Stability Control (ESC) and Electronic Brake Assist, however, there are three points to consider.

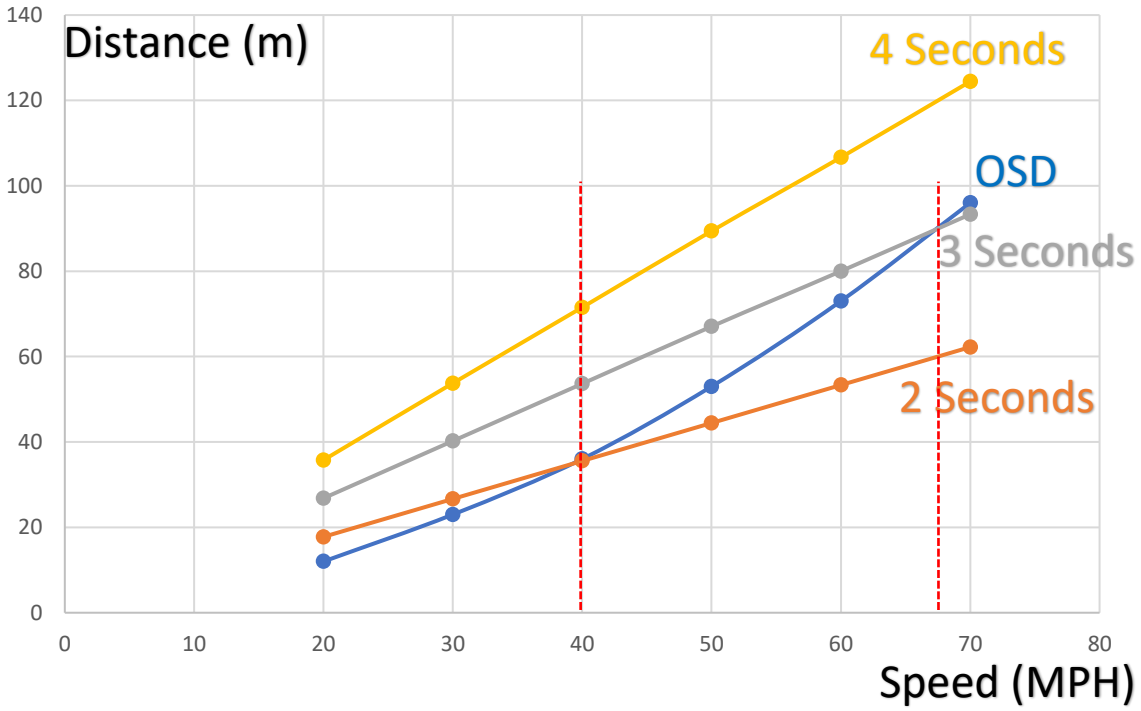
- First, the Table in HC Rule 126 assumes that **Response Time** is zero! In other words, it assumes that the driver responds to the hazard as soon as it appears; they then react and apply the brakes. This assumes that every driver has 100% concentration with zero distraction! Response Times can be significant, and drivers cannot respond to a hazard they have not yet identified as being one that requires them to brake.

- Second, although modern braking systems have greatly improved in recent years, human Reaction Times have remained the same!
- Third, HC Rule 126 is contradictory as it proposes a 2 second gap on dry roads, whilst also proposing that you should not get closer to the vehicle ahead than the Overall Stopping Distance. Unfortunately, it is impossible to achieve both proposals, for speeds greater than 40mph!

It is this 'third' point that leads us to adopt a 3 second rather than a 2 second gap when driving on a dry road surface.

The following diagram is the HC Rule 126 Table shown as a graph of Speed in miles per hour against Distance in metres, where:

- The Overall Stopping Distance for speeds between 20 and 70 mph is shown in blue;
- The distance travelled at speeds between 20 and 70 mph in a 2 second period is in brown;
- The distance travelled at speeds between 20 and 70 mph in a 3 second period is in grey;
- The distance travelled at speeds between 20 and 70 mph in a 4 second period is in yellow;



For speeds below 40mph, a 2 second gap gives a following distance which is more than the Overall Stopping Distance from the vehicle ahead, in compliance with HC Rule 126.

For speeds above 40mph, a 2 second gap gives you ***less than*** than the Overall Stopping Distance from the vehicle ahead and the discrepancy increases with speed. ***The 2 second rule does not comply with HC Rule 126, for speeds above 40mph!***

A 3 second gap is always greater than the Overall Stopping Distance from the vehicle ahead at speeds up to 60mph and just short of it at 70mph.

For that reason, Advanced Drivers use a 3 second minimum gap to the vehicle ahead.

We also use a 4 second minimum gap on a wet road surface.

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