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Stopping Distances and Following Distances

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Stopping Distances

An article by Eddie Wren

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With the advent of better brakes, vehicle stopping distances have reduced somewhat over the years but it has to be remembered that, no matter how good the brakes and tires, the laws of physics don't change.

The most important point for any driver to remember is that if you double your speed -- say from 30mph to 60mph -- your braking distance does not become twice as long, it becomes *four times* as far.

Because there are differences between various vehicles, the following tables are for guidance only. The biggest factor in stopping distances is the speed at which a driver reacts to seeing the hazard in question. Under ordinary driving conditions, very few drivers indeed can get onto the brakes within half a second, and two-thirds of a second to a full second is more typical.[2]

Most frighteningly, Australian research has shown that the very people we expect to have the fastest reactions -- young drivers -- are particularly prone to effectively 'freeze up' with fear, at the sight of an unexpected hazard ahead, and their reaction time can therefore exceed two seconds.

Lastly, don't forget that when you read the 60-0mph figures in literature for new cars, the automaker is giving you only the braking distance, *not* the overall stopping distance.

Stopping Distances for *Dry* Pavement/Road [1]

Speed	Thinking Distance [2]	Braking Distance	Overall Stopping Distance	Comparisons

20 mph	20 feet	20 feet	40 feet	
30 mph	30 feet	45 feet	75 feet	Full length of tractor/semi-trailer or articulated wagon
40 mph	40 feet	80 feet	120 feet	
50 mph	50 feet	125 feet	175 feet	
60 mph	60 feet	180 feet	240 feet	
70 mph	70 feet	245 feet	315 feet	*(USA = "Touchdown !")*
80 mph	80 feet	320 feet	400 feet	About **six** semi-trailer or articulated wagon lengths 3

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Stopping Distances for *Wet* Pavement/Road 1

Speed	Thinking Distance 2	Possible Braking Distance	Overall Stopping Distance Can Be:	Comparisons
20 mph	20 feet	40 feet	60 feet	
30 mph	30 feet	90 feet	120 feet	
40 mph	40 feet	160 feet	200 feet	
50 mph	50 feet	250 feet	300 feet	*(USA = Touchdown !)*
60 mph	60 feet	360 feet	420 feet	
70 mph	70 feet	490 feet	560 feet	
80 mph	80 feet	640 feet	720 feet	Almost two and a half American Football fields 3

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Remember - 1: When the road is icy or covered with compacted snow, or diesel fuel has been spilled (which is a particular risk near certain gas stations) *the 'braking distance' for your vehicle can be as much as ten times further* than for dry roads/pavement.

Remember - 2: .....***Any fool can drive fast enough to be dangerous!***

Notes

1 For non-US readers, 'pavement' is the American word for the road surface. We are not referring to the British meaning of the word, which is the same as the American 'sidewalk'.

2 The 'thinking distances' shown allow for two-thirds of a second reaction time. This varies from one driver to another and for individuals who are ill, tired or simply not concentrating, it can be much longer.

3 The 80mph examples are not here to condone breaking any speed limits, rather to illustrate the extra dangers faced by, and caused by, those people who exceed the usual highway limits.

Click here to read about Safe Following Distances

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