

Data sheet

Speed Check

The 1865 Locomotive Act (the 'Red Flag' Act) required horseless (motorised) vehicles to have three drivers - two to travel in the vehicle and one to walk in front with a red flag. The speed limits were 4 mph in the open country and 2mph in towns. This act was repealed in 1896. The familiar 30mph speed limit in built-up areas did not appear until 1934, along with the driving test and pedestrian crossings.

National speed limits

We now have a range of speed limits for motorised vehicles, as shown in the table below.

National Speed Limits (mph) - UK					
Vehicle type		Built up areas	Open areas single carriageways	Open areas dual carriageways	Motorways
A	Cars	30	60	70	70
B	Cars towing caravans or trailers	30	50	60	60
C	Buses and coaches	30	50	60	70
D	Goods vehicles - under 7.5 tonnes loaded	30	50	60	70
E	Goods vehicles - over 7.5 tonnes loaded	30	40	50	60



Passing a road sign showing a black stripe on a white background does not mean you can travel as fast as you like or that you can now go at 70mph, wherever you are. It indicates the end of a special speed restriction (for example, for road works) and that one of the National speed limits now applies, as shown in the table.

Speed cameras

One way to enforce speed limits is through the use of cameras. The camera is usually at the side of the road and is triggered by a sensor in the road or radar in the camera box as a speeding car passes. It then takes two photographs half a second apart. These show two positions of the car and the speed can be calculated from markings on the road.

The two photos here show the position of a car at two moments, half a second apart. The white markings on the side of the road are 5 feet apart.

The car has travelled 12 five-foot gaps in half a second. This means it is travelling at an average speed of 60 feet in half a second = 120 feet per second.

There are 3600 seconds in an hour.

This is $120 \times 3,600$ feet per hour
= 423,000 feet per hour.

1 mile = 5280 feet

So the speed of the car is

$423,000 \div 5280$ mph
= 82mph.

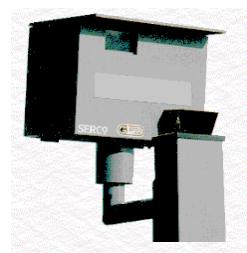


photos from West Midlands Police

Being prosecuted for speeding

Generally speeding motorists are only prosecuted if their speed is measured at 10% above the road limit + 2mph. So, in a 50mph speed limit zone, the speed at which the Police are likely to prosecute for speeding is:

$$50 + (10\% \text{ of } 50) + 2\text{mph} = 57\text{mph}$$



Questions

Speed check

1

Which vehicles are **not** allowed to travel at 70mph on a motorway?

2

On which types of road is a car allowed a higher maximum speed than a bus?

3

Some people argue that the car speed limit of 70mph on a motorway should be raised to 80mph.

If this were done, what is the speed at which the Police would be likely to prosecute a motorway car driver for speeding?

4

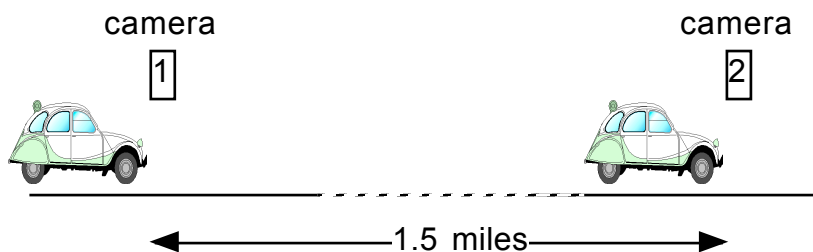
A car driver is charged with travelling at more than 60mph in a 40mph-speed-limit zone. The evidence is two photographs taken half a second apart, that show the car has moved 45 feet in the half second.

Show how the photograph measurements confirm that she was travelling at more than 60mph.

5

Another way to check for speeding is to use two cameras - one to take a photo at the start of a speed restricted section of road (eg road works) and the other to take a photo at the end. These can then be compared to work out the average speed over the section of road.

A section of motorway has road works and a 50mph speed limit for 1.5 miles.



A car passes camera no.1 and then passes camera no.2 after 1minute 30 secs.

Has the driver broken the 50mph speed limit? **Yes / No**

Explain your answer

