

2.2 SPEED STUDIES

The actual speed of vehicles over a particular route may fluctuate widely depending on several factors such as geometric features, traffic conditions, time, place, environment and driver.

SPOT SPEED

Spot speed is the **instantaneous speed of a vehicle** at a specified location.

Uses:

Spot speed study may be useful in any of the following aspects of traffic.

1. Spot speed can be used to design the **geometry of road like horizontal and vertical curves, super elevation etc. Location and size of signs, design of signals, safe speed, and speed zone determination, require the spot speed data.**
2. **Accident analysis**, road maintenance, and congestion are the modern fields of traffic engineer, which uses spot speed data as the basic input.
3. To use in planning **traffic control** and in **traffic regulations**.

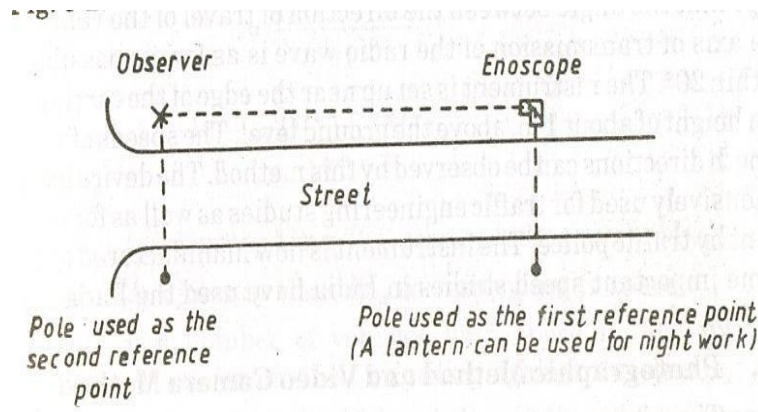
Spot speed can be measured using an **enoscope**, pressure contact tubes or direct timing procedure or radar speedometer or by time-lapse photographic methods.

Spot speed by enoscope method:

It is one of the simplest methods of finding spot speed is by using enoscope which is by using enoscope which is **just a mirror box supported on a tripod stand**.

In its simplest principle, the observer is stationed on one side of the road and starts a stopwatch when a vehicle crosses that section an enoscope is placed at a convenient distance of say 30m in such a way that the image of the vehicle is seen by the observer when the vehicle crosses the section where the enoscope is fixed and at this instant the stop watch is stopped.

The main advantage of this method is that it is a simple and cheap equipment and is easy to use. The greatest disadvantage is that the progress is so slow as it is difficult to spot out typical vehicles and the number of samples observed will be less. There is also a possibility of human error.



Spot Speed by Enoscope

Other equipment used:

Graphic recorder

Photo electric meter

Speed meter

Photographic method

radar

Running speed:

Running speed is the average speed maintained over a particular course while the vehicle is moving and is found by dividing the length of the course by the time duration the vehicle was in motion.(EXCLUDING DELAY)

Journey speed:

Journey speed is the effective speed of the vehicle on a journey between two points and is the distance between the two points divided by the total time taken for the vehicle to complete the journey including any stopped time.(INCLUDING DELAY)

Time mean speed:

Time mean speed is defined as the average speed of all the vehicles passing a point on a highway over some specified time period.

Space mean speed:

Space mean speed is defined as the average speed of all the vehicles occupying a given section of a highway over some specified time period.

The space mean speed is slightly **lower than** time mean speed under typical conditions on rural highways.

Average speed:

It is the average of the spot speeds of all vehicles passing a given point on the highway.

