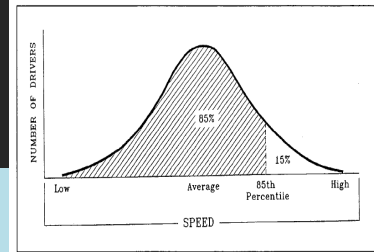


Civil P.E. Exam Review

***Speed, Distance, Time, and Acceleration Relationships*****Other Types of Speed**

**85<sup>th</sup> Percentile Speed** - The speed at or below which 85 percent of drivers are operating their vehicles.

**Posted Speed** - The maximum speed limit posted on a section of highway using the regulatory sign. The Texas DOT procedure for establishing speed zones: “posted speed should be based primarily on 85<sup>th</sup> percentile speed when adequate speed samples can be secured.”

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Civil P.E. Exam Review

***Speed, Distance, Time, and Acceleration Relationships*****85<sup>th</sup> Percentile Speed.****Exceptions to 85<sup>th</sup> Percentile Rule:**

1. On sections of highway with high accident experience, the posted speed may be as much as 7 mph lower than the 85<sup>th</sup> percentile speed.
2. National or state maximum speed limits prohibit higher posted speeds, even when the 85<sup>th</sup> percentile speed is higher.

The posted speed (shown in 5 mph increments) is generally obtained by rounding the 85<sup>th</sup> percentile speed to the nearest speed (mph).

Source: SPEED – Understanding design, operating, and posted speed, Report NO. 1465-1, Texas DOT, Texas Transportation Institute.

<http://d2dtl5nnlpfr0r.cloudfront.net/tti.tamu.edu/documents/1465-1.pdf>

Civil P.E. Exam Review

***Speed, Distance, Time, and Acceleration Relationships*****Exercise - 85<sup>th</sup> Percentile Speed.****EXERCISE:**

A speed study concludes that the 85<sup>th</sup> percentile speed of free flowing traffic is 56.2 mph. Which of the following posted speed limit signs most nearly meets the guidance for speed limits signs?

- (A) 50 mph, 55 mph, 60 mph, 65 mph
- (B) 50 mph, 55 mph
- (C) 55 mph, 60 mph
- (D) 60 mph, 65 mph

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Civil P.E. Exam Review

***Speed, Distance, Time, and Acceleration Relationships*****Exercise - 85<sup>th</sup> Percentile Speed.****SOLUTION:**

When a speed limit is to be posted, it should be within 5 mph of the 85<sup>th</sup> percentile speed of the free flowing traffic. – MUTCD, Sec. 2B.13. 12

$$\left. \begin{array}{l} 56.2 + 5 \text{ mph} = 61.2 \\ 56.2 - 5 \text{ mph} = 51.2 \end{array} \right\} 55 \text{ or } 60 \text{ mph}$$

**THE CORRECT ANSWER IS: (C)****17**