

TAP IT!

Technical Assistance Program, Information Transfer
KY Local Technical Assistance Program

Setting Curve Advisory Speeds

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When a roadway has a curve and/or turn that requires motorists to slow down to safely negotiate it, advanced warning signs are used to identify the hazard to the roadway users. Central to proper signing is identifying the “safe” speed that a driver can negotiate the curve. This is called the “advisory speed.” When the posted or 85th percentile speed of the roadway is greater than 10 mph over the advisory speed, the MUTCD requires that an Advisory Speed Plaque is installed with the advanced warning sign. Several methods exist to set advisory speeds including 1) accelerometer, 2) design speed equations, and 3) a traditional ball-bank indicator. The ball bank indicator is the most common and quickest method to determine advisory speeds for a small number of curves.

Ball Bank Indicator

The ball bank indicator (BBI), shown to the right, measures the horizontal forces as a vehicle maneuvers through a curve. These forces are dependent upon the speed of the vehicle and the superelevation (or bank) of the roadway. Measurements are expressed in terms of degree of deflection with which the “ball” travels through the curve. Manual BBIs have been replaced by the digital Ball Bank Indicator which provide measurement based on the same principal.



Using a Ball Bank Indicator:

1. Mount the ball bank indicator in the vehicle when the vehicle is stopped on a level surface so that the BBI reads 0.
2. Drive through the curve at a consistent speed (e.g. 35, 30, 25, 20 mph). Perform test in each direction, and in each lane, multiple times, due to variations in path, pavement condition, etc.

| Speed (mph) | Degrees of Bank |
|-------------|-----------------|
| ≤20 mph | 16° |
| 25 - 30 mph | 14° |
| ≥35 mph | 12° |

Tests should be performed at 5 mph decreasing increments starting at the posted speed until the ball bank deflection remains within limits set in the table at left. When a run can be successfully completed without exceeding these values, this speed is chosen as the advisory speed.

Learn more in the Horizontal Alignment TapIT! Sheet.