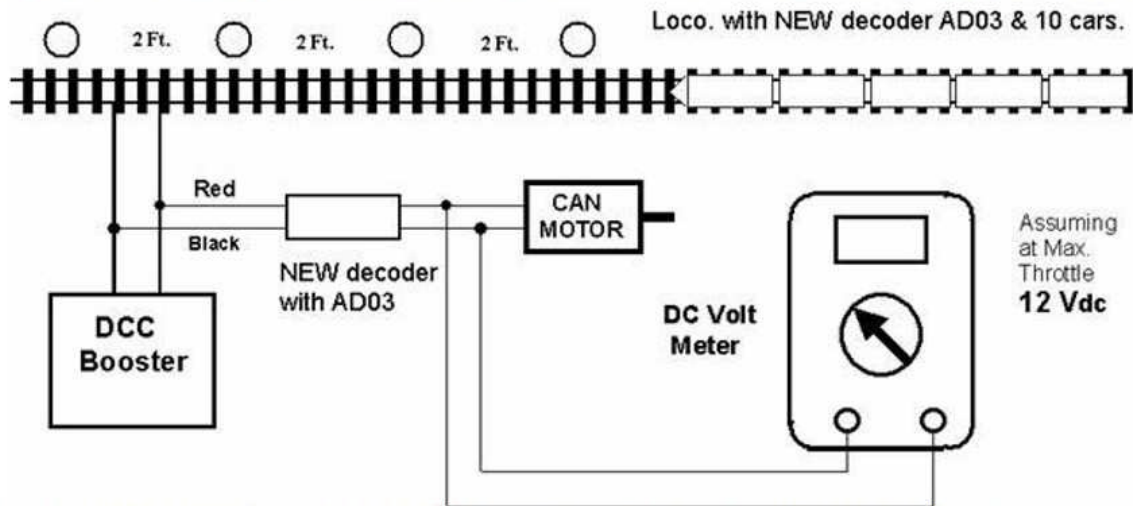


A simple way to measure a Low Mph speed, and make an estimate for the **Start CV2**.
A coin every 2 feet by level track. (In HO scale, 60 MPH is 1 ft./sec or 6 feet in 6 seconds.)



Low Voltage and Top Voltage:

With a DCC decoder connected to a stationary DC motor, the voltage at the motor terminals can be measure. This can simulate the DC motor in a running locomotive by using the same address number. Run your 10 car train at a reasonable **Low** speed. Record the **Low** Voltage and Mph speed. Turn your throttle to full speed and record the **Top** Voltage and Mph speed.

In HO a 60 Mph Speed Trap is about 6 Feet in Six seconds.
 Measured **Mph** speed = (6 sec. / measure time, sec.) X 60 Mph.
 Example: measured time = **4.6** sec. then (6 / **4.6**) X 60 = 78 Mph.

In HO a 10 Mph Speed Trap is about 1 Foot in Six seconds
 Measured **Mph** speed = (6 sec. / measure time, sec.) X 10 Mph.
 Example: measured time = **4.3** sec. then (6 / **4.3**) X 10= 14 Mph.

Say $V_{Low} = 3.15$ VDC and $V_{Top} = 12.6$ VDC
 Then: $(3.15 / 12.6) = 0.25$ or the Low running point is 25% of the Top throttle range.
 Since when CV = 255 it is at the Top of throttle range, Then $CV2 = 0.25 \times 255 = 64$

| | | | |
|-------|-----------|-------|--------|
| Top | 255 | (99%) | 78Mph |
| Max. | CV5 = 214 | (84%) | 60 Mph |
| Mid. | CV6 = 127 | (50%) | 35 Mph |
| Low | 64 | (25%) | 14 Mph |
| Start | CV2 = 36 | (14%) | 4 Mph |

Draw a straight from the Top speed point to the Low speed point, project to the Start.

