

Bogied Locomotive Cornering Considerations.

While it is true that a bogied vehicle will take corners better than a rigid wheelbase -there does come a point at which the bogie will de-rail... This is caused by the wheel, "climbing the rail", this occurs when the diameter of the wheel is not sufficiently small enough proportionally, to stop the flanges on the other side from contacting the top of the rail. The resulting friction then provides enough upward thrust to lift the wheel clear of the flanges.

This situation is less of a problem with smaller wheels than larger wheels -thus smaller wheels appear to corner better than larger ones.

In the file "DEGT loco data.doc" you will find the wheels sizes of the locomotives alongside the bogie axle separation distance. Consulting the tables below will give you the minimum cornering radius for that bogie.

For the purposes of the calculations:

Wheels between **3 feet** and **3 feet 6 inches**, will be considered to be **3 feet 3 inches**.

Wheels between **3 feet 7 inches** and **3 feet 9 inches**, will be considered to be **3 feet 8 inches**.

Wheels between **3 feet 10 inches** and **4 feet**, will considered to be **4 feet**.

For A1A-A1A use C0-C0 and Driver Wheel size.

For 1C0-C01 use C0-C0.

For Asymmetric axle spaced C0-C0, use largest axle spacing.

All curves are considered to be gauge widened by 1mm and the central axle has 2mm of side float

B0-B0	3 feet 3 inches	3 feet 8 inches	4 feet
6' 6"	1.735m	1.957m	2.135m
8' 6"	2.040m	2.302m	2.511m
8' 9"	2.094m	2.362m	2.577m
9'	2.104m	2.373m	2.589m
10'	2.106m	2.375m	2.591m
10' 6"	2.106m	2.375m	2.591m
11'	2.106m	2.375m	2.591m

C0-C0	3 feet 3 inches	3 feet 8 inches	4 feet
6'	1.753m	1.977m	2.187m
6' 9"	2.219m	2.503m	2.730m
7'	2.479m	2.796m	3.050m
7' 3"	2.739m	3.090m	3.370m
7' 6"	2.811m	3.171m	3.459m
7' 9"	3.005m	3.390m	3.698m
8'	3.199m	3.609m	3.937m