

The Gauge One 3D Circle



Adrian Johnstone, July 12 2019

The Gauge One 3D circle is a discussion group for railway modellers working to a track gauge of 1 3/4 inches or 45mm who are interested in modern manufacturing technologies.

The group aims are

(I) to share expertise in all forms of Computer Aided Design and Manufacturing as applied to Gauge 1 modelling,

(II) to create a series of freely available high-quality parameterised 3D models of Gauge 1 items.

The group is affiliated to G1MRA – the Gauge One Model Railway Association and we encourage participants to join G1MRA.

Background

I had started to meet folk who have invested time and money in 3D printer technology but got stuck, usually because they found 3D computer aided design software too demanding. It seems that there may be a large number of 3D printers sitting idle because their owners cannot easily design things for them to print. It is a bit like the early days of home computers. A machine is bought and the cry goes up from family and friends: *but what can it do?* Well, not much without a well-designed CAD model to print.

There are plenty of free CAD models around for railway items, but they are typically designed for scales of around 2mm or 4mm to the foot. Simply scaling these up to our scales of around 10mm to the foot often doesn't generate pleasing results, since aspects such as wall thickness need to be overscale for small models, and may look too chunky when rescaled. Ideally, we need fully parameterised models which allow smooth scaling, but also allow detailing such as the chamfer on wagon planks to be independently set.

In addition, most current 3D printers are rather cantankerous beasts, and the learning curve for getting repeatedly good quality prints can itself be challenging even when the CAD software has been mastered.

At G1MRA's spring 2019 meeting, David Halfpenny encouraged me to take a table to show off some recent 3D modelling exercises. Somewhat to my surprise I was very busy all day, and collected an email distribution list comprising around 30 enthusiastic members. Subsequently I wrote a paper for the G1MRA committee suggesting a new 'virtual' local group dedicated to applications of 3D printing. The committee approved, and the group was formally launched in July 2019 with a moderated online discussion forum at

<https://groups.io/g/GaugeOne3DCircle>

and a static website containing technical notes, images and CAD models at

<http://www.cs.rhul.ac.uk/~adrian/GaugeOne3DCircle>

These sites are publicly visible, and all on-topic contributions are welcome.