L-Gauge Modular Standard

The following is a list of requirements for modules to be used in group layouts. Modules must meet the minimum requirements set forth in this standard.

1.0 Introduction

1.1 The objective is to provide a platform for realistic group layouts. LGMS is not intended to replace LUG layouts or render them obsolete. LGMS was created for the sole purpose of group layouts, particularly in a convention setting. The goal is for a number of people to arrive at a show with various modules and be able to put together a coherent, reliable, and plausible layout suitable for realistic operations and switching but also loop running.

2.0 Definitions

2.1 Track – An assembly consisting of two rails and cross ties.

2.2 Rail – Protrusion from the track assembly on with the tires of a train wheel sits.

2.3 Baseplate – A thin, semi-flexible, plastic sheet of building studs and lacking anti-studs beneath, commonly used as the foundation of larger builds. Sizes are typically, but not exclusively, found in sizes of multiples of 16 (16x16 studs, 16x32, 32x32, 48x48, etc.).

2.4 MILS – Modular Integrated Landscaping System. More information can be found at: http://www.abellon.net/MILS/

2.5 Mainline – One of two independent tracks to be used for loop running. Any LGMS layout will have a mainline at the least.

2.6 Branchline – A track route which branches away from the mainline. Branchlines may have a terminus or reconnect to the mainline at another point.

2.7 Switch – An installation on a track that is used to guide a train from one track to another.

2.8 Crossover – A pair of switches that connects two parallel tracks.

2.9 Ballast – Plates on which the track sits.

2.10 Benchwork – The table used to display the module, which may be custom-built or a folding table.

2.11 Front of Module – The side of a module which will be viewed by the public.

2.12 Rear of Module – The side opposite the front where operators shall run the layout.

3.0 Module Dimensions

3.1 Modules shall have a depth of 30”, or three (3) 32x32 baseplates. The minimum length of a module is 30”, or three (3) 32x32 baseplates. Therefore, the minimum size of a module is 30” x 30”.

3.2 The length of a module may be increased in increments of 30” or three (3) baseplates squared.

4.0 Rail Height

4.1 The rail height (measured from floor to top of the rail) shall be 32 3/16”.

4.2 Tables of lower height (example: tables for a river module or trestle) are allowed as long as the rail height is maintained.

4.3 Folding tables may be used as long as the rail height is correct.

5.0 Mainline Modules

5.1 Any modules added to the layout must include two mainlines at a minimum.

5.2 Mainlines shall enter from one side of the module and exit the opposite side of the module.

5.2.1 Each mainline track shall start with 36 studs between the edge of the track tie and the outside edge of a 30 inch module.

5.3 Tracks placed in close juxtaposition shall at no point have fewer than eight (8) studs of separation, except:

5.3.1 At diverging segments from switches, turnouts, or slips;

5.3.2 As occurs at a cross or other intersections.

5.4 There shall be no gradient on any mainline track.

5.5 4.5V and 12V rails shall not be used for mainlines.

5.6 Any mainline turnout or crossover must have a minimum radius of R104.

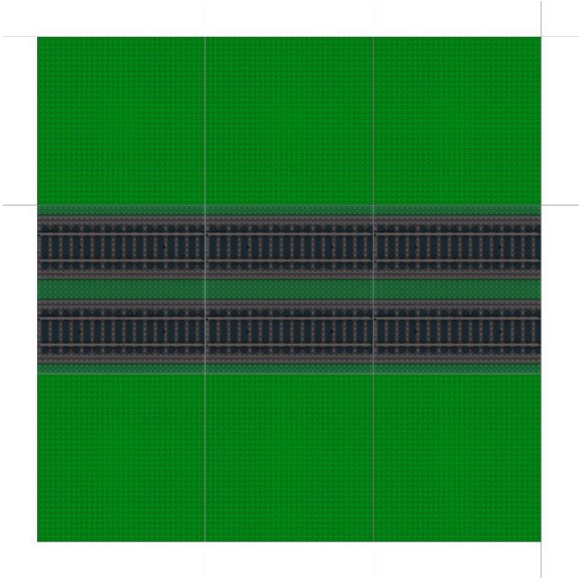

Figure 1: An example of a minimal mainline module.

6.0 Corner Modules

6.1 Corner modules shall be used to complete the mainline loop of the layout.

6.2 The minimum radius for curved track on a mainline corner module shall be R104.

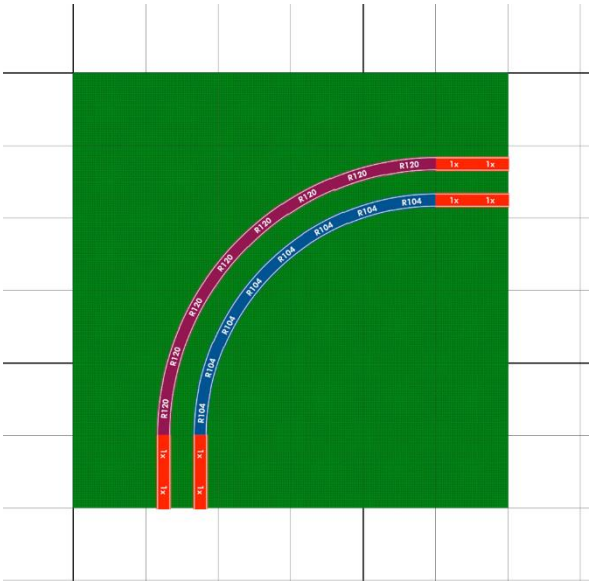

Figure 2: An example of a minimal corner module.

7.0 Branchline Modules

7.1 Branchline modules are allowed. They should connect to the builder's own mainline modules, except through coordination with another participant.

7.2 Branchline modules must meet the requirements listed in Sections 2.0 and 3.0 but do not need a mainline.

7.3 There is no minimum radius established for branchline modules.

7.4 The maximum gradient for branchline modules shall be one plate in height per 16 studs in length.

8.0 Additional Modules

8.1 Additional modules may be added to the operating side of mainline modules only. In essence, there shall be no modules outside of the footprint of floor space reserved for the layout. Railyards parallel to the mainline, sidings for industries, buildings, and more fall into this category.

8.2 Additional modules must meet the requirements listed in Sections 2.0 and 3.0 but do not need a mainline.

8.3 Additional modules should connect to the builder's own mainline modules, except through coordination with another participant.

9.0 Switches and Turnouts

9.1 Switches and turnouts may be hand-thrown or controlled remotely.

9.2 Any motorized switches shall be self-contained within the module.

9.3 Any motorized switch mechanism shall be included in such a way that they do not foul any locomotive or car.

10.0 Scenery

10.1 All track shall be ballasted.

10.2 Scenery shall cover any table or benchwork.

10.3 The ends of all modules shall be flat to prevent any unwanted "cliffs".

10.4 Scenery within four studs of the outside edge of any crosstie must be kept below the height of the rail.

11.0 Recommended Practice

11.1 Mainline switches and crossovers should allow for large locomotives to be moved onto and off of the mainline without touching the locomotive, if possible.

11.2 Rail height is 37 3/16". The recommended method to achieve this height is by using a standard MILS module (one baseplate, one brick, one plate) with standard "PennLUG" ballasted track (2 plates, then track) sitting on a 36" high table.

11.3 Tunnels and overpasses are recommended to be 18 bricks above the railhead, but must be 16 bricks at minimum.

12.0 Operation

12.1 Mainline trains shall be run in a manner that replicates driving in the United States. In essence, trains running on the outer mainline (closest to viewers) shall run counterclockwise, and trains running on the inner mainline (closest to the inside of the layout) shall run clockwise.

13.0 Collaboration

13.1 Layouts shall be designed by the participants in that event or show before arrival at the venue. Collaboration groups shall be open to outside and first-time participants who may bring their own LGMS compliant modules.

13.2 Layouts shall be coordinated and designed by the Layout Chief. The Layout Chief is in charge of that layout for the duration of that show or event, including setup and teardown.

13.3 The Layout Chief is responsible for maintaining a low Bonahoom factor at appropriate shows. This includes arranging any branch modules in a neat and orderly fashion.

14.0 Miscellaneous

14.1 There shall be no defined scale for the trains used on the modules.

14.2 Modules shall be intended for use with battery powered trains only.

14.3 Plexiglass is not a requirement but may be utilized. If used, it shall not exceed 3" above the height of the table. It shall be fastened to the fascia of the module.

15.0 Revision History

V1.0 : January 30, 2019 – Compiled and published

V1.1: February 12, 2019 - Changed wording in 1.1 ("Our" to "The"), added sections 4.5 (mainline gradients), 6.4 (branchline gradients), 7.2 (discussion of additional modules), 10.2 (Table + MILS + PennLUG ballast), 12.3 (Bonahoom factor), removed section 3.1 (table height), 13.4 (maximum grade). Changed wording in 11.1 ("mirrors" to "replicates". Removed red asterisks from sections 4.3, 6.1, 6.2, 6.3, 8.1, 8.2, 8.3, 8.4, 9.1, 9.2, 9.3, 9.4, 10.1, 11.1, 12.1, 12.2, 13.2.

V1.1.1 : February 14, 2019 – Removed "convention" from 3.5. Convention tables are not allowed to be used for displaying modules, updated section 7.1 to disallow extra modules outside the given floor space reserved for the layout (subject to change following Brickworld Chicago 2019).

V1.2 : Added Definition of Terms, now section 2.0. Clarified section 3.1 (module dimensions), added section 3.2 (increasing a module size), removed "or three feet" from 4.1, removed section 4.4 (MILS Modules), removed "custom tables are not required" from 4.5, inserted "two mainlines" in 5.1, clarified 5.2 (mainlines), added 5.2.1, clarified section 5.3 (space between mainline tracks), added 5.3.1 and 5.3.2, removed 5.4 (crossovers on mainlines), added 5.5 (restriction on track), removed requirement for R104 and R120 placement from 6.1, added 6.2 (minimum radius for mainline corner), split section 8.1 (additional modules) into 8.1, 8.2, 8.3, 8.5, changes "should" to "shall" in 10.1 and 10.2. Name changed from "Stud-Mo" to "LGMS". Changes in this revision are from Scott Hoffemeyer's comments and do not affect the requirements.

V1.3 : Updated rail height from 37 3/16" to 32 2/16", added 5.6, removed 8.4, 8.5, removed 9.1, added link to PennLUG ballast instructions, removed Bonahoom factor requirements and definition.

V1.4: Added 11.3 defining minimum and recommended tunnel and overpass heights.