Metre gauge modules : module 1

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METRE GAUGE MODULES
Module 1

INTRODUCTION

In 1998 a gathering of European narrow gauge enthusiasts in the San Francisco Bay Area convened to form a module group for HO scale, metre gauge. The group consists of over 10 members at this time, several of whom belong to the Swiss Railways Society. SRS member Tobias Giles initially led the effort, hosting meetings and providing an agenda. The group hammered out a set of design parameters for the modules. Within a year the group had constructed several modules. In the last two years several more modules have been built, and the group meets about 5-6 times a year to set up the modules and run trains. In this article I hope to convey our basic design principles and operating experience.

GOALS

The group designed a basic set of standards that provide a consistent and reliable basis for operation and scenery but also give the module builder considerable freedom in implementation. The key design parameters are :

- single track mainline, to run as the real trains do
- different module end profiles, for terrain variety
- elevation changes, because we're modelling mountain trains
- Fremo style (no fixed geometry), point to point running
- scenery consistency where the modules meet
- conservative trackwork, so all trains can run

IMPLEMENTATION

The following sections describe some of the key implementation details of the modules.

Dimensions

The module width at the ends is 16", with the track down the centre. The module shape can be anything in between the ends, as long as curvature constraints are followed.

Elevation Changes

The modules can change elevation in 1" increments end to end. The legs supporting the modules are required to put the module top at 48" height, plus or minus 6" in 1" increments. In order to keep the trains from straining too hard, we limited the slope to 5% maximum. That means for each elevation change of 1", the run must be at least 20" long. We have built modules with 1", 2" and 4" elevation changes, and the slopes really add to the operational interest and scenic variety.

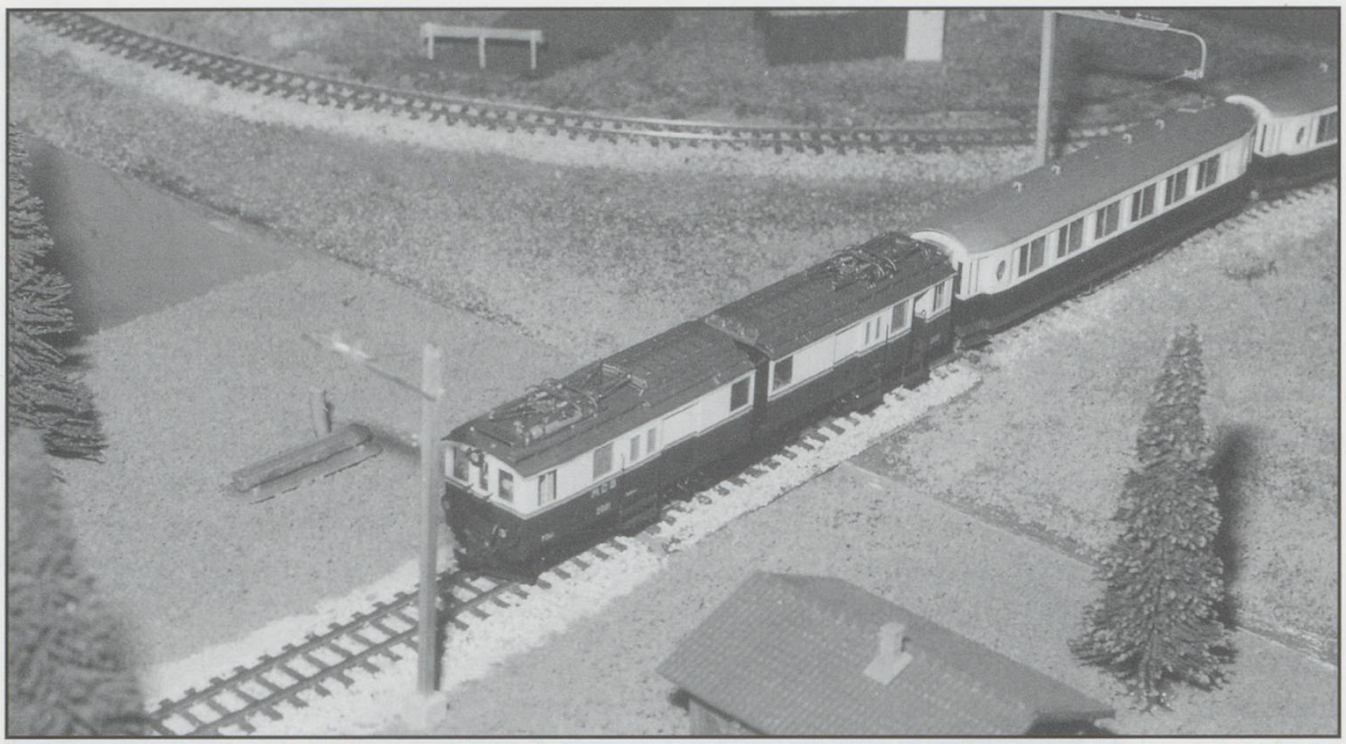
Curvature

We based our minimum curvature on some empirical observations. Bemo R1 sectional track (330mm radius) is clearly too sharp for longer coaches and railcars. Bemo R2 (376mm) was chosen as the minimum radius. We have found, in practice, that 18" (457mm) would be better. Detail parts like end hoses and diaphragms on the Bemo coaches tend to interfere with each other on tighter curves. Also, we run other manufacturers' trains such as Ferro Suisse and Lemaco, some of which seem to require generous curves.

Trackwork

We chose Peco flex track as the connector between modules, and for the first few inches of track on the module. In the middle of the module the builder can use any track he wants, and our modules collectively have Bemo and Shinohara track on them as well as the Peco. Bemo and Shinohara track require a little shimming to match rail tops with the Peco sections at the ends. Although the ties (sleepers) are different sizes, when they are all painted and the track is ballasted, the discontinuity in track types is visually not too blatant.

Since one doesn't know whether the neighbouring module might curve left or right, or



1. *Two A profiles meet.*

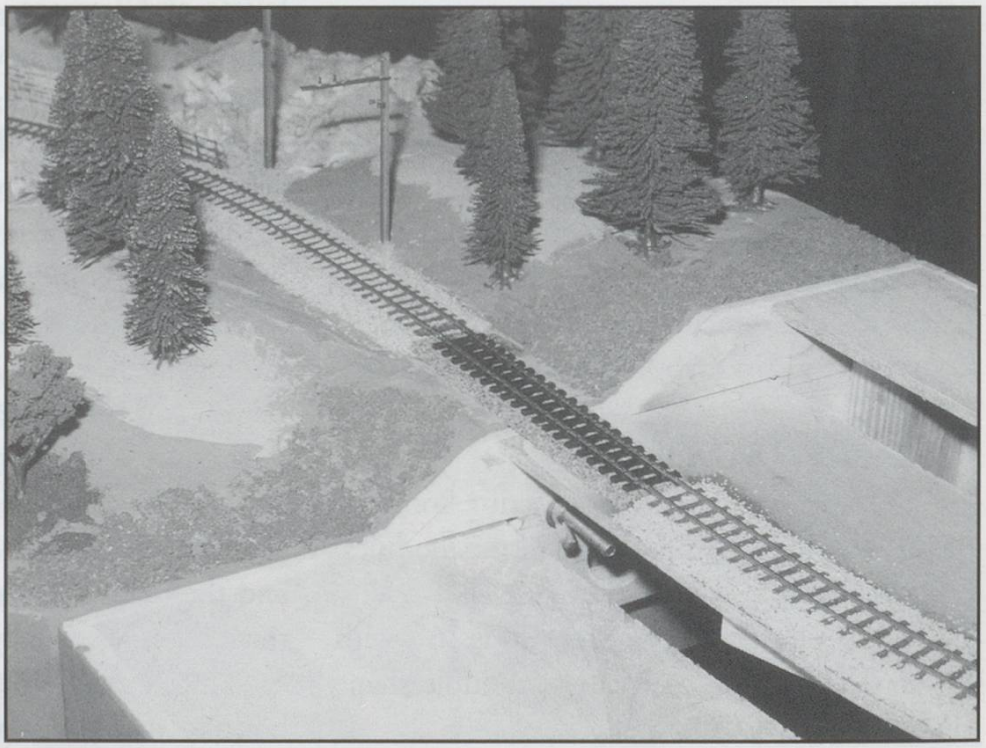
ascend or descend, the track is kept level and straight for 6" from the module end. This gives a flat 12" distance between any reverse curves. We have observed that the longest coaches and railcars are around 9" long.

We use cork roadbed. Although Bemo does make an HOm cork, it is far easier and cheaper to obtain N scale cork. N scale cork is not wide enough, however, so we insert a strip of HO cork cut lengthwise. In other words, the height of the HO cork (about 3/16") is a good width to put between the two N scale halves. A balsawood cutting tool is used to slice up the HO cork into the strips needed.

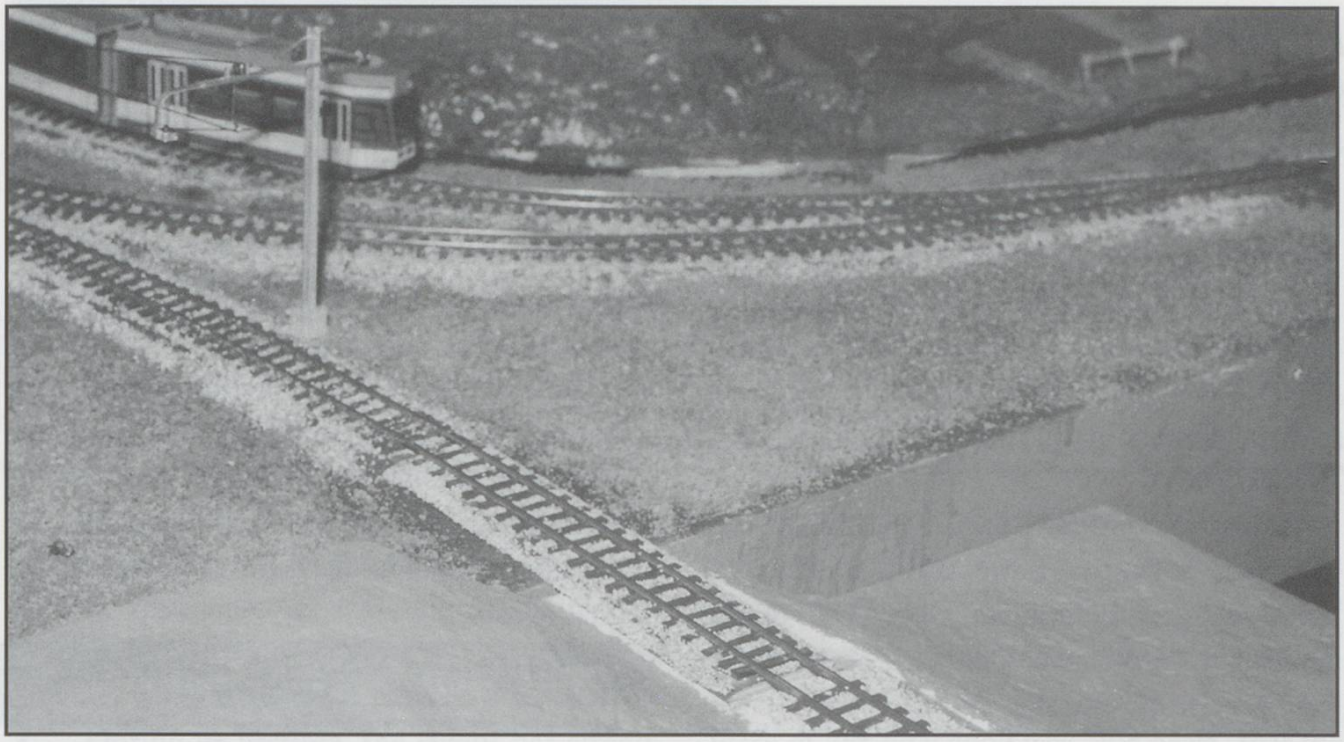
The mainline track does not have any rack segments. RhB snowploughs on the Bemo equipment can hang low enough to snag on the protruding rack teeth of Bemo's rack track. Module builders may put rack segments on branch lines if they wish.

End Profiles

We have designated 3 different end profiles where the modules meet. An A profile is flat and 16" wide (picture ***1***). The B profile (picture ***2***) has a drop-off on one side of the track, and a hill on the other side of the track. The C profile is even higher above and lower below the track level. The A and B profiles share the same loca-



2. *Two B profiles meet (open baseboard visible).*



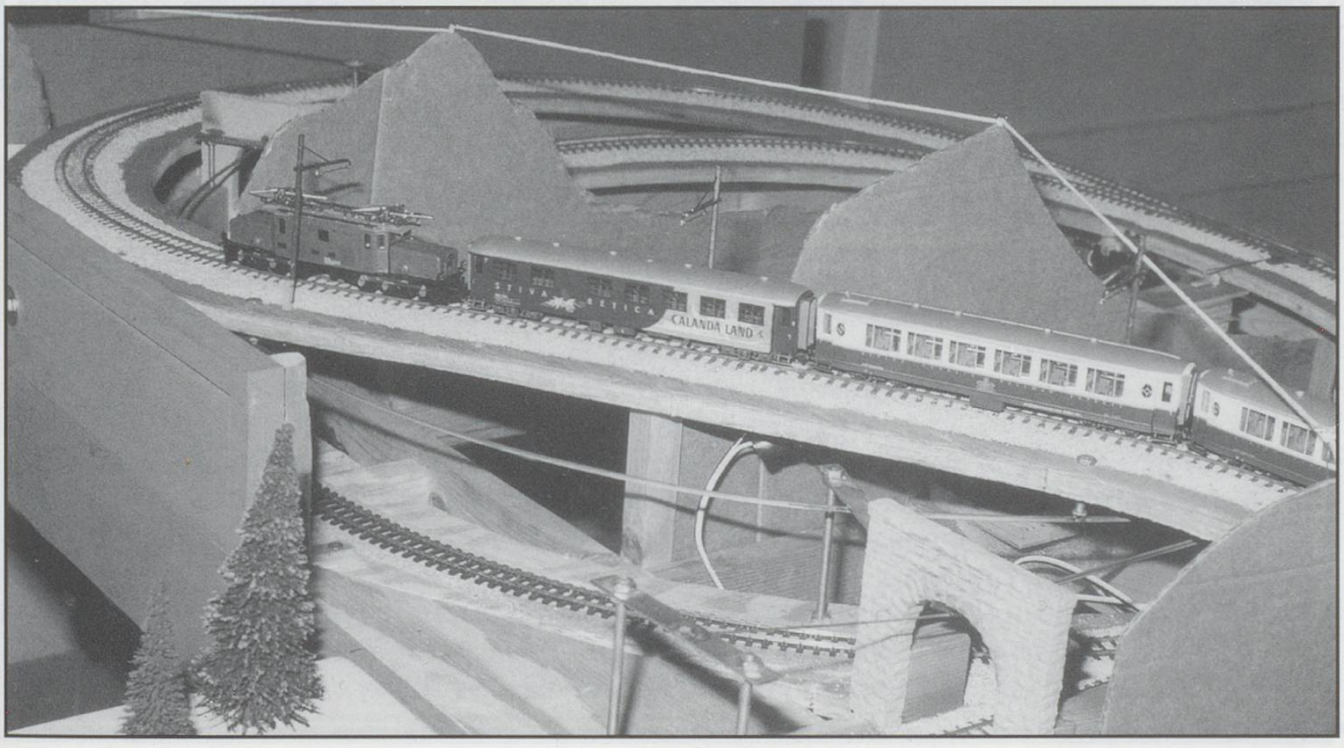
3. *A & B profiles meet.*

tion of bolt holes in the end plates so that an A profile can couple to a B profile (picture ***3***). The scenery is not continuous but the track does align. This is handy when the modules that show up for a meet do not accommodate perfect hillside matching. The C profile is too steep for its end plate holes to match the locations of the A and B profile holes.

4. *An RhB Croc. descends a loop module.*

Catenary

We use Sommerfeldt catenary. The pole type is not standardized, but the majority of people are using RhB poles and spans, and some use FO poles. The first pole from the module end is at a fixed distance of 180mm. That allows us to use a standard piece of 360mm catenary to connect between modules. If the neighbouring module does not have catenary, such as an FO pole only using a contact wire, then a contact wire can be used between modules.



Within the module, the builder chooses the catenary lengths. The recommended zigzag for HOm is 8mm, which dictates pole spacing on the curves.

The catenary is not wired for power pick-up. Reversing loop modules would make it difficult to feed locomotive power through the catenary and one rail. Using steam and diesel locomotives precludes using both rails as the electrical return path from the catenary.

Electrical

Since the modules are single tracked with the track down the centre, it is possible to orient each module in two ways, 180 degrees apart. Electrically, we could not have plugs of one gender on one side and the opposite gender on the other end, as that would fix the orientation. We use both genders of plugs at each end. We found a plug type that allows for easy mating and uncoupling. Many connectors are very solid once mated, but very difficult to separate. The Amp MATE-N-LOK II connectors contact and release nicely, and they are easy to disassemble for servicing.

We chose to keep the number of connector circuits limited, for simplicity. We have two conductors for the track power, two for AC power for accessories, and four signalling. We have not yet standardized on the usage of the signal wires.

Metre Gauge Modules continues in the next Swiss Express

A SWISS LAYOUT AT THE NEC WARLEY SHOW

One of the highlights, for most of us anyway, was the layout brought from Switzerland by members of the Modelleisenbahnclub Rapperswil - Jona. *Hombrechtikon* was recently featured in Continental Modeller and is a delightful diorama of a Swiss rural backwater near to Zürich.

The club celebrated their 20th Anniversary in 2000 and at the NEC became renowned for their handouts which were freely available to anyone who stood for more than 10 seconds or so watching. They returned home having made a reputation for good humour and a great deal of smiling. One of our regular correspondents saw them on the Severn Valley on the Monday after the exhibition and they confirmed to him how much they had enjoyed their visit. We all look forward to seeing them again on the future.

One of the club members is Roland Born, owner of the wonderful Rapperswil Modellbaustudio Born. This mecca, for many years Dave Howsam's real spiritual home, is a must if you are near Rapperswil. Roland also had a selection of his models in a side display case at the NEC.