Steve Hales explains how his group's American layout representing an actual location was developed in the light of operating and exhibition experience.
Photographs by the author, or as credited.

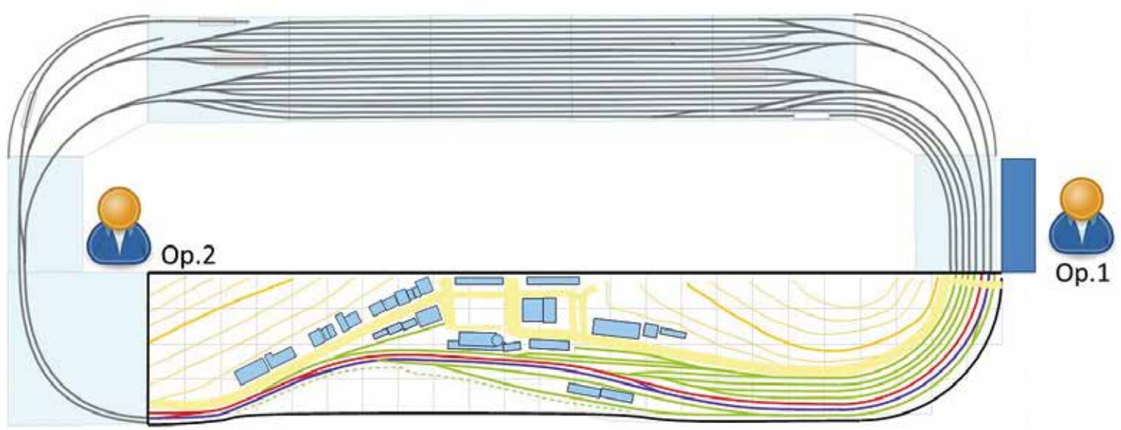
Mauch Chunk, PA

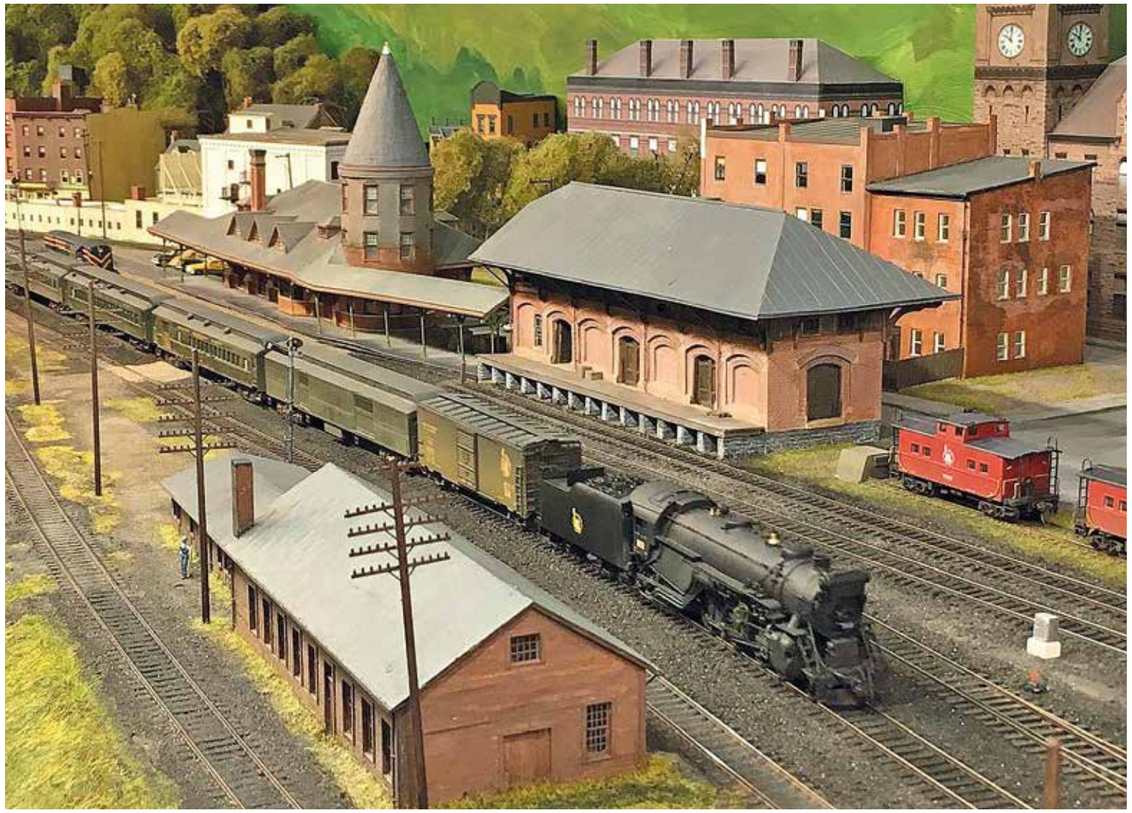
Part 2 – potential realised

Left
Visitors viewing the layout at Model Rail Scotland 2019.

At the very end of 2016, the scenic front boards of *Mauch Chunk, PA* were moved to the Barrowmore Model Railway Group clubrooms, the home of *Mostyn* and *Johnstown Road* – both exceptional and impressive layouts made with great care and precision. *Mostyn* is probably the only S4 layout that can support scale length trains running at a scale 90mph without risk of derailing. The standard of modelling offered a great opportunity to realise the potential of *Mauch Chunk, PA*.

Pretty much the whole team (Richard Oldfield, Gavin Liddiard, Dave Faulkner, Mike Rapson, Phil Sutton, Dave Millward, and Gareth Evans, were involved in the rebuild and also helped to exhibit.





Key to the rebuild was Gavin, a professional joiner, who was to build a legged trestle to support the original scenic boards, two new narrow scenic 'orphan' boards, two cross boards, four corner boards (one with scenery), and five fiddle yard boards. All had legs rather than trestles with height adjustable feet. These were built with plywood throughout to avoid warping. The front boards were slightly extended and shaped at the front to allow another track to be added at the right hand (yard) end and for a more gentle curve at the left end.

The total size of the reconstructed layout was now 28' x 11'6".

Above
Pacific G3s #813 pulling an express west to Scranton past Mauch Chunk depot.

Left
The new fiddle yard boards under construction in the Barrowmore MRG clubroom.

Above
Richard Oldfield and Steve Hales wiring a new fiddle yard board.

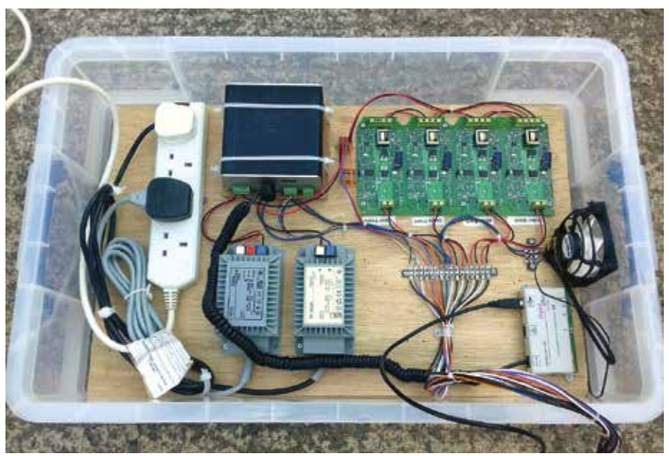
Below right
The MP-1 point motors and Digikeijs decoders fitted to provide reliable switching in the fiddle yard.

Below
All the Lenz and associated control units fitted in a "Really Useful Box". The fan was added after overheating at exhibitions. Control is via a USB cable to a laptop PC.

Track was carefully laid (mainly by Richard, Dave, and me on a cork base, held down with superglue. Peco code 75 was again used with long pointwork. As before, Peco point motors and MERG boards were (initially) used in the fiddle yard.

The new fiddle yard has nineteen tracks – the extra track to accommodate through coal trains leading to the front yard tracks. Pointwork was designed with AnyRail software to provide the maximum length on each track. A through track on one end takes trains from the river track, and a couple of small sidings on the other end store short terminating passenger trains to run in to and out of the platform track.

In the scenic area, new track was laid where required and all Peco point motors here were replaced with Tortoise motors and a different type of MERG board. I had the pleasure of doing the re-wiring with Richard, with considerable help from Gavin and Dave. The approach used on *Mostyn* was followed, with East and West pairs of track busses, and frequent doubled-up droppers to the track. Two separate pairs of buses took the power and the digital signal to the point accessory decoders. A further four wires took the signal for a Lenz control system round the layout and sockets were installed in multiple locations. The Lenz control system was mounted in a "Really Useful Box" to keep it all safely in one place for transit – and with a computer fan to keep it cool. The track diagram in Big Bear was modified to the new track layout and worked pretty much first time.



A completely new lighting system was planned and built. This was based on using Chris Bennett's original design of 'scaffold' shaped supports allowing the legs to stand at the back of the 4' wide boards and carry the fascia at the front. In a design prepared by Gavin, the fascia incorporated the lighting. This time, with the development of low power LED spotlights (4W GU10), mains current could be used although the rectangles and simple MR16 light sockets were retained. To ensure safety with mains power, all wiring was hidden 'inside' the fascia making a very neat and safe finish. It worked a treat and was easy to transport.

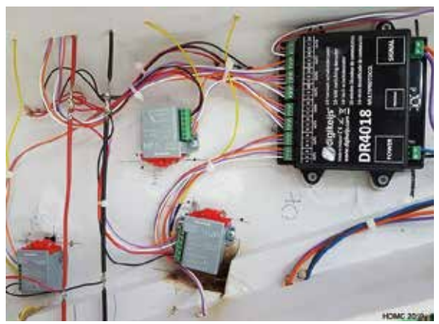
This was a major piece of work carried out at an impressive rate which allowed the layout to be taken to a 'friendly' exhibition at Chatham in June 2017. Apart from work to the front of the scenic boards where track had been added, no scenic changes had been made by this time.

No significant work had been carried out on the locomotive stock before the Chatham exhibition and so Richard and Gavin spent much of the time at the exhibition fettling and cleaning. This planned activity resulted in almost 100% working stock and transformed the operating possibilities.

On the return to the clubroom, the next stage was a complete (well, about 97%) relaying of the track in the scenic section with new, hand-built pointwork as some of the points had proved unreliable at Chatham. This of course had to be painted and ballasted again with coal dust.

The backscene was moved back 4" to reclaim the narrow strip of board that had not been used in the previous extension. This meant that a rearward extension to the bicycle shop was needed, and this was done to perfection by Mike Rapson. The two photographic backscene buildings were rebuilt by Gavin to accommodate greater depth.

So that it could be extended to fill the new space rearward and sideways, the left-hand hill (or mountain) was extended and raised to over 2' above baseboard level. The right-hand hill was completely demolished and rebuilt, with polystyrene, plaster, etc. Both hillsides were grassed with carpet underlay as before and then planted with nature-derived trees.



Right
The layout under construction, showing Chris Bennett's 'scaffold' design lighting gantries and the back of the fascia, incorporating the main spotlights.

A new roadway running up to the bridge was built including a new road wall/cliff face. The latter was carved from plaster to match photographs of the prototype as closely as possible. The bridge itself, originally built by Chris Bennett, was extended to cross the extra tracks.

Signals

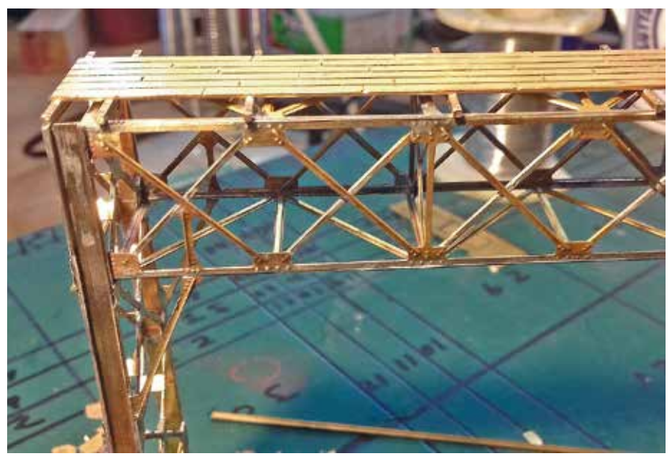
An ambition had always been held to reproduce the prototype three-track signal gantry at the west (right-hand) end of the station, ideally with working signals. Although the CNJ gantry style is also used on other north-east railroads, there was/is nothing remotely similar available commercially in HO. The only alternative was to produce our own etches for Richard to build. A lot of research using photos of the gantry and similar CNJ gantries was carried out. The artwork was done in PowerPoint (!) – which I find makes lining up, spacing, and producing multiple copies (relatively) easy. After some experimentation and a prototype, a full A3 brass etch was produced which included the semaphore arms. Richard then used this to build the three-dimensional bridge and, with a suitable mechanism and control via a Tortoise motor, the three position signal was made to work. Of the two signals, the lower one for the yard track was permanently set, as in the prototype. Some airbrushing and weathering and the signal was complete. The prototype was used to control access to the Nesquehoning yard and so operation was relatively easy with stop, proceed-with-caution, and go options.

Slightly later, a working cantilever signal gantry was also modelled in a similar manner to sit over the engine terminal track. This, however, was controlled with a servo motor via a Tam Valley Depot dual servo decoder for three-aspect semaphores – the intention being eventually to also use this for the first gantry. This proved easy to integrate into the Big Bear control system which was a major advantage.

Stock

By this stage we had a substantial collection of locomotives, including enough (if everything was working) to run steam or diesel periods.

Some diesel stock, such as EMD F3A cab units and Alco RS3 and RSD4/5 road switchers, were readily available in CNJ green with yellow lines ("toothpaste tube") livery. Fairbanks Morse H15-44 road switchers were a less usual presence. A range of yard switchers in CNJ all green livery were also available, and a selection was obtained – some were detailed All of these were plastic.



Above right
The road wall under construction, showing stones cut into DAS modelling clay and rocks carved into plaster. This was based on prototype photographs (actually video screengrabs from a passing tourist train).

Right
The etched brass signal gantry under construction.

Above
Mikado M3as #909 (unweathered) heading a loaded coal train east alongside the Lehigh River.

Harder to obtain – and only available as Overland Model Imports brass models – were Baldwin 'babyface' DR-4-4-1500 cab units. A very fortunate eBay purchase was made! Also from OMI came a Baldwin 'double ender' DRX 6-4-2000 cab unit – this has a particularly long wheelbase and a requires large radius curves. These are also available from Red Ball. With the new, wider curves, double enders could now run on all routes.

The steam locomotive types used by the CNJ were all unique – arising from the use of cheap anthracite coal (the CNJ were always short of money) requiring a wide firebox. This was provided by a Wootten firebox, at the rear on their Mikados and Pacifics or behind central cabs on the 'camelbacks' (see CM January 2018). An exception is the M1 Mikado, based on a USRA type, of which there were very few. As a result, steam locos could only be special purchases in brass or kit-bashed. Our experience of these brass old timers, some manufactured in the 1950s and 1960s, is that they were good runners and often better that the newer plastic diesels.

Before he became ill, Chris and I started to adapt a couple of Broadway Limited Imports M1 Mikados to add Wootten fireboxes and other details. Having a brass version to emulate helped enormously. Although Chris was never able to finish this, I took the project to the nearby Barrowmore MRG in 2015 where I was encouraged to complete them, providing us with four Mikados in total.

Exhibitions

In 2018 we attended the Chiltern MRA exhibition in Stevenage and overall all went smoothly. Despite the apparent complexity of DCC and computer control, this aspect has always behaved well and reliability was further improved by using wired (as opposed to wi-fi) connections between the main and subsidiary laptops that control the turnouts. This is mainly because the wireless environment in exhibition halls can be complex, with multiple competing networks, and this caused problems in setting up our own wi-fi network – that's my theory, anyhow!

The stock was less reliable, probably because of the age of some of the locos and general items and required almost constant fettling and cleaning by (mainly) Gavin, but also Richard and Dave.

One area that invariably caused a failure, panic (mine), and subsequent repair was the Peco point motors in the fiddle yard. I freely confess this was likely to be my poor positioning of them, but that can be quite hard as they can be very sensitive. The satisfying sound they make is, of course, indicative of considerable force being expended each time they switch, and this can cause them to shift over a long weekend of constant operation – especially the end fiddle

Below left
Baldwin DR6-4-2000 double-ender #2001 taking a passenger express east to the coast.

Below
All four of the Mikados – two brass and two adapted – observed in the area of the finished signal gantry.

Right
Mikado M3s #918 hauling a loaded coal train east past a pair of Budd railcars waiting in the Mauch Chunk station road to return to Allentown and Jersey City.

yard points which are in constant use. In order to reduce the risk from this source of disruption, it was decided to replace the motors in the whole yard. There was insufficient depth under the boards to use Tortoise motors, so we selected MTB MP-1 motors from DCC Train Automation. These are easy to mount and easy to adjust for perfect positioning. They also have slow and silent operation like the Tortoise motors. With DCC control provided by Digikeijs DR4018 sixteen channel switch decoders, each of which gives control for eight points, these were successfully integrated into the Big Bear computer control and gave faultless service.

In 2019, its final exhibition year (to date), Mauch Chunk PA was shown at Model Rail Scotland, Glasgow, in February and the Warley National Model Railway Exhibition, at the NEC, Birmingham, in November. At both events it ran well – as far as the public were concerned – and was well liked. It also won the first prize in the non-Association layout category in Glasgow and the CONTINENTAL MODELLER 'best overseas layout' award at the NEC. Plans for further exhibitions in 2020 and onwards were, unfortunately, cancelled because of COVID and plans for the future are currently under review.

Space constraints in the Barrowmore clubhouse initiated a layout move to Yorkshire and we are currently looking to find another club (or individual) who would be interested in taking over ownership of *Mauch Chunk, PA* for exhibition and modelling. Please contact the author if interested via steve@homauchchunk.co.uk

Above right
Two K1as 4-8-0 'camelbacks' waiting in the yard near the Mauch Chunk ironworks.

Right
Behind the scenes at Model Rail Scotland in Glasgow in 2019.