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The Welsh Highland Railway Centenary

Further Developments and Thoughts

Nick Booker

Moel Tryfan **and train recently arrived at Snowdon Station in August 1922 - Charles Clinker - LGRP 9075**

As readers will be aware, the Welsh Highland Railway Heritage Group is working with The Ffestiniog Railway Company, Cymdeithas Rheilffordd Eryri, (WHR Society) and the Welsh Highland Heritage Railway to arrange a series of events and activities to celebrate the two forthcoming WHR Centenaries.

On the weekend of the 30th and 31st July, 2022, there will be a weekend of heritage trains operating between Dinas and Rhyd Ddu (formerly South Snowdon) to celebrate the centenary of the reopening of this section of line. A gathering of vintage cars at Dinas over the weekend is likely, as well as an evening event with a bar and food in the Goods Shed - and outside if the weather is good!

There will also be activities on the WHHR at Gelert's Farm. There is lot of thought and hard work going into suitable period appropriate rolling stock and locomotives, so keep a sharp eye on social media and the press for updates as to what might be emerging from Gelert's Farm to head north.

The main event to celebrate the 1923 opening through to Portmadoc will be in 2023 over the weekend of 23rd/24th/25th June. This will be based at the southern end of the railway and promises to be a splendid event involving all three railways and with some of the original locomotives operating on the line hopefully, given a fair wind, including a Hunslet and a Baldwin.

On the 6th August this year it will be 150 years since The North Wales Narrow Gauge Railways (Moel Tryfan Undertaking) was authorised by Act of Parliament in 1872. No formal celebratory activity has been announced but perhaps we might follow in the steps of the promoters who probably raised a glass of claret or something stronger to toast the passing of the Act.

The launch of the competition sponsored by Mortons Media (publisher of *The Railway Magazine* and sister title *Heritage Railway*) for the best piece of original research on the history of the WHR and its predecessors and the personalities, customers and associated activities has gone

James Spooner **at Beddgelert at about the time the complete railway opened. The Curly-roofed bogie brake next to the loco was what then was the only one of the three such vehicles surviving in its original form, F.R. Van No. 3. F.R. Bogie carriages are visible beyond; unfortunately 'staff' were standing in the wrong place, preventing identification! John Keylock collection. WHR 104**

well with several enquiries for the rules already received. The competition will be judged by historians Dr Dafydd Gwyn and Gareth Haulfryn Williams, and the winner will receive a cash prize of £500.

We continue to look for unpublished photographs of the reconstruction in 1922 and construction in 1923 with enquiries made directly to the Sir Robert McAlpine Company, to the University of Glasgow that holds the company archive and to others but so far with no results. If anyone has any suggestions please get in touch.

The FR is running a WHR100 Photo Competition based around displaying photographs in the Spooner's Restaurant at Harbour Station. It has received a lot of interest; however entries have primarily been contemporary pictures rather than any unknown or unpublished vintage photographs emerging.

Discussions are still taking place on a Legacy Project / 100 Club that would create a permanent and useful memorial project for the railway.

In the light of several enquiries for drawings of NWNGR and WHR buildings for modelling purposes, the WHR Heritage Group is considering suggesting a legacy project based on developing a library of scale drawings of all the buildings and associated structures of both railways. This could result in, say, a printed and / or digital publication and / or 3D modelling and possibly including track layouts. The potential scale of such a project is has been highlighted in a listing by Mike Hadley in his response to the original suggestion. It could include:

1) Dinas Part i): The Goods Shed, Station Building, Track Layout.

2) Dinas Part ii): The Carriage and Wagon Shop, the Loco Shed, The Signal Cabin.

3) Beddgelert: The Goods Shed, Station Waiting Room, Bookstall, Stores/Lamp Hut, Water Tower, Track Layout.

4) Portmadoc New: Booking Office, Refreshments, Crossing Box, Water Tower, Track Layout inc. Beddgelert Siding.

5) Tryfan Junction; Station Building, Signal Cabin, Track Layout.

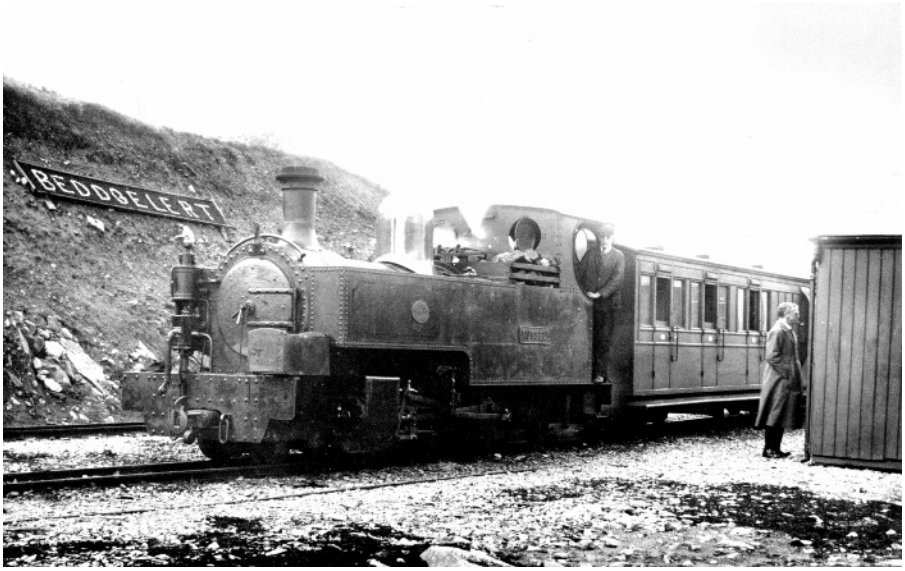
6) South Snowdon/Snowdon/Rhyd-ddu, Waenfawr, Bettws Garmon, Quellyn Lake, Rhostryfan, and Bryngwyn: Station Buildings and Track layout.

7) Minor Halts: Portmadoc New (North), Ynysfor, Croesor Jnct, Ynys Ferlas, Hafod Garregog, Hafod-y-llyn, Nantmor, Hafod Ruffydd, Pitt's Head, Plas-y-nant, Salem, also including Glanrafon Quarry (Weighbridge Building and track layout)

8) Bridges and other infrastructure.

Quite apart from resources and money required to prepare the drawings, this could be where digital technology and 'print on demand' triumphs as the demand for a complete book would probably be quite limited and uneconomic. Further discussion and consideration is clearly required. However, please let me know your thoughts pro or con and some suggestions of how we might go about such a project and to whom we might talk to on the subject. The likely cost would be an important consideration in going ahead.

Finally, both for the 2022 and 2023 events, the opportunity for chasing the trains using a vintage coach (or should that be charabanc?) may emerge – keep a look out and we all hope that should *Russell* put in an appearance it will be facing the right way!



Russell **at Beddgelert in the early days of the complete railway - note the absence of the coal siding (the turnout would have been visible below the locomotive) and the station sign on the rock face beyond the tracks (the Welsh 'mists' had yet to wreak their damage!) The loco was facing "the right way".**
Locomotive Publishing Company 70203 - WHR 104.

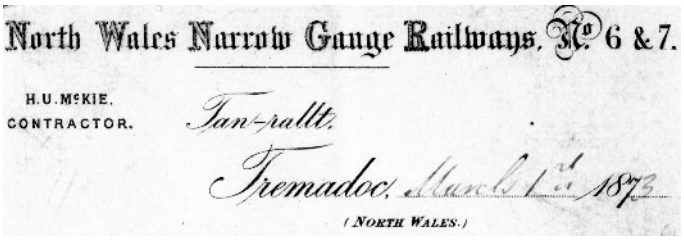
Slow Fairlies to Dinas

Chris Jones has been looking into the somewhat chequered history of the acquisition by the NWNGR of two single-Fairlie locomotives from the Vulcan Foundry in Lancashire.

The origins of the North Wales Narrow Gauge Railways Fairlie locomotives are normally skated over with the assumption that they were ordered, built and delivered in short order. However, looking at the remaining records in the Vulcan Archives shows that this was just not the case.

If one starts from the Royal Assent on the NWNGR Act on 6th August, 1872, it would be more than four years before the locomotives were delivered and in use. It took until 23rd December 1872 for the contractor chosen to build the line (H.U. McKie) to be appointed. The January 1873 prospectus stated that McKie had given surety for the completion of the Moel Tryfan line within 12 months and the Bettws Garmon line within 18 months from their commencement, therefore an early order for rolling stock was required. Hugh Beaver Roberts had agreed to lease the railway (originally based on an agreed completion date of November 1874, then altered so the lease started from the date of opening for traffic). Within the lease terms he had agreed to spend £10,000 (approx £1.2 million in today's money) on locomotives (based on Fairlie's patent) and rolling stock.

The first drawing of a Single Fairlie in the FR Archives [(1)] is dated 7th January 1873 (XD97/471078) and signed by G.P. Spooner himself. It is fully detailed including the coil main suspension and latest steam pipe developments. The design is for an 0-4-4 locomotive with a 5 ft coupled wheelbase and a height of 8 ft 6 ins.


North Wales Narrow Gauge Railways. Nos 6 & 7.

H.U. McKIE, CONTRACTOR.

Tan-yrallt,

Tremadoc, March 1st 1873

(NORTH WALES.)

Hugh McKie's Official letter head.

We have a single letter from McKie in the archives which suggests his mindset some two months later. He says "*It is of considerable importance in getting material to the ground to have a siding at Llanwnda at the Junction and as Mr Smith has succeeded Mr Lee I would be much obliged if you would write him, to try and get one as convenient and if the station was fixed and the site of the engine shed I would like to build it as soon as possible as I might have the use of it during the construction of the line.*

"Will the drawings be ready for the rolling stock soon? There is no time to lose in giving the order for it, to be got ready in time."

McKie is recorded as starting work in June 1873 and so the pressure was on to provide rolling stock. However, the Vulcan records show that it was not until 22nd December, 1873, that order No. 874 was placed for two Fairlie locomotives for the NWNGRys.

Specification and Order Book No. 4 gives the works numbers as 738 for *Moel Tryfan* and 739 for *Snowdon Ranger*. Some of the technical details given are:

Tractive force with 100 lbs effective pressure 3371 lbs
Heating Surface 336 (tubes)+30(fire box) = 366 sq ft
Tank capacity 303 gals
Coke space 26 cu ft
Tubes brass, 1.5 ins O.D., 8 ft 3 ins between tubeplates WG 14/12
Cylinders 8.5 ins dia x 14 ins long
Stephenson link motion
One Gresham & Craven injector No. 6
Cast steel driving wheels, 2ft 3 ins dia, with 3 ins tyre
Trailing Bogie Wheels Cast iron, 1ft 4.25 ins with 2.75 ins tyre
Driving axle springs:
8 spiral springs 6 ins long, 2 ins dia, 3/8 dia wire
Centre axle springs:
6 spiral springs, 4 ins long, 2 ins dia, 3/8 dia wire
Leading axle springs:
8 spiral springs, 6 ins long, 2 ins dia, 3/8 dia wire

The next drawing in the FR Archives (XD97/472014) appears to be the confirmatory design from Spooner & Co. engineering offices (the stamp says "North Wales Narrow Gauge Railways Engineering Office Portmadoc") to the Vulcan Foundry dated 12th January, 1874. This shows the familiar 0-6-4 wheel arrangement has been adopted, and is signed "*C.E. Spooner per G. Percival Spooner*". This may be Charles Edwin Spooner, whose CV for the Institute of Civil Engineers stated he was the Engineer for the NWNGRys from 1874 to 1876. He was the third son of Charles Easton Spooner and was only 21 at that time. It could be a mix of his youth and an under-performing contractor which led to the falling out with McKie that followed during 1874.

The Spooners' official Engineer's Office stamp - note that they perhaps were not as rigorous as those scholars who prefer accuracy as to the plurality of 'Railways' in the Company's title! As will be seen elsewhere in these notes, this was not unusual at that time.

Following on from the General Arrangement drawing, the FR Archives show component drawings being created between March and June 1874. The Vulcan Foundry General Arrangement Drawing 9407 is dated 12th October, 1874 and probably documents the final design as constructed. Therefore, it should be no surprise that the Vulcan brass plate sported by *Moel Tryfan* around the turn of the 20th century should have a date on it of 1874. It would appear that if normal process had been followed, the two locomotives should have been completed and delivered in 1875. However, it should not be forgotten that the FR placed their own order for *Taliesin* on June 16th, 1875, and it is possible, with common components, that Vulcan were pushed into completing all three locomotives together, thus putting back the NWNGR Fairlies. *Taliesin* was delivered first and started work on August 10th, 1876.

The first hint of an NWNGR problem occurs in February 1876 when Charles Easton Spooner put forward a proposal to the FRCo. Board that one of the small FR locomotives be loaned to the new contractor of the NWNGR, Mr Bray (probably a misquote from the Mr John Boys reported to a later NWNGR meeting). Spooner was probably in a quandary as to what to do with all four of his Small England locomotives because he only required three. Lord Penrhyn had asked for an engine for his line at exactly the same time; however Spooner must have been aware that Charles Edwin Spooner was getting married and planned to go to India. The weight of finishing the NWNGR would therefore fall back on him. So perhaps it was this which made him make sure that he only made the FR Board aware of the NWNGR need for a locomotive, in order to ensure a timely completion. The subsequent loan of *Palmerston* to the NWNGR started in May 1876.

The settlement with the previous contractor, McKie, had been an unexpected *volte-face* for the finances of the NWNGR. In April 1876 the Select Committee of the House of Commons was told that the whole of the capital of the Moel Tryfan Undertaking had been raised and expended (some of that money had been spent on rolling stock, as demonstrated by the May Day parade in Manchester that year which featured one of the Ashbury carriages destined for the NWNGR). A new Bill was raised to provide more funds from both abandoning the General Undertaking and raising new capital, and the subsequent Act received royal assent on 13th July, 1876.

One outcome of the shortage of money seems to have been the NWNGR trying to back out of their contract for the Fairlies with the Vulcan Foundry. The minutes of the Vulcan Board meeting of 18th July 1876 state *"The Managing Director reported upon 2 Engines built to the order of Mr Spooner for the North Wales Narrow Guage* [sic] *Railway Cy. & now repudiated by the Secretary to the Company alleging that they were ordered by Mr Spooner without proper authority."* It seems more than handy if they really had made Charles Edwin Spooner the scapegoat for this, as he sailed for India the very next month!

By 17th August, at the Special General Meeting convened to discuss the issuing of share capital, the Board made an impassioned appeal for more funds *"The Directors are endeavouring to arrange for some part of the debts being paid in shares; but it is absolutely necessary, in order to save the Company from collapse, that Shareholders should come forward at once and assist the Board by subscribing towards the new Capital… If this appeal is not promptly responded to, the Board will have no alternative but to resign the management, and the Mortgagees and other Creditors be left to take what is available to meet their claims…"* It was also at this meeting that Hugh Beaver Roberts (who had committed under his lease agreement to provide the money for rolling stock including the locomotives) stated he considered the lease no longer binding.

Things worsened in the dispute with the Vulcan Foundry. Their Board minutes of the August 26th, 1876, state "*In the matter of the 2 Engines built for the North Wales Narrow Gauge Railway Company Mr Smith reported having made 2 applications and had received no reply. Instructions were given that writ be issued."*

The original length of the agreement for the hire of *Palmerston* was six months. This was obviously not going to be enough and so must have been extended. Fitters from Boston Lodge came and maintained the locomotive at Llanwnda on September 10th, 1876.

The Directors appeal for more funds must finally have paid off in the succeeding month. The Vulcan Foundry Board minutes of 21st November 1876 say "*The lease of Two Engines to the North Wales Narrow Gauge Railway Company was Sealed and executed by this Compy.*" And at the NWNGR half-yearly meeting on 12th December, it was stated "*satisfactory arrangements had been made for engines, carriages, trucks &c."* and *"in all probability by this time the engines would have arrived"*.

Therefore, although the actual date for the arrival of locomotives and the Ashbury carriages are not known, they must have all arrived around the close of 1876.

You might have thought this was the end of the saga, but this was not so. In March 1877 amongst the financial records for the Vulcan Foundry can be found:

"North Wales Narrow Gauge Ry. Co. To Interest A/c For interest on deferred payments of debt £2900, Interest on 3rd Instalment due 25th March, £71-5s-0d"

So, even in leasing the locomotives, the NWNGR were racking up further debt. These notes continue all through 1877 on each instalment. 1877 was of course the year of the opening of the railway, 21st May for goods traffic and 15th August for passenger traffic. *Palmerston* was kept on, probably as insurance, until July 9th and so could have been pressed into service.

Also in August 1877, there was a hearing on putting the company into receivership (a dispute over the 'cashing in' of the General Undertaking). At this, Charles Spooner appeared as the Engineer and John Sylvester Hughes (future Manager of the FR) as Resident Engineer, showing

that the close connection between Spooner & Co. and the NWNGR was maintained.

The completion and operation of the line allowed the technical description and diagram for the locomotives finally to able to appear in Engineering on 23rd November, 1877. However, financially, it was still on a knife edge. The Receiver was finally appointed on 5th December, 1877, and it is probably no coincidence that the Vulcan Foundry minutes of 8th January, 1878, report:

"North Wales Narrow Guage [sic] *Railway*

The Managing Director reported receipt of letter from this Company offering Lloyds Bonds, having failed in paying the agreed instalments under Contract. After discussion the matter was left with Mr Smith to deal with, & if the proposal in question improved the position of this Company the proposal might be accepted. Mr Gooch said that this Company's Owner plates were upon the Engines."

One month later an unexpected benefactor had appeared. The Vulcan Board minutes of 12th February, 1878, state:

"Mr Smith reported that a Mr James Chomeley [sic] *Russell had in consequence of the applications he had made to the Company paid by his own Cheque the amount of the Instalment in arrears. He further stated that a Resolution had been passed authorizing him to treat with the Vulcan Company for the purchase of that Company's interest in the Engines, and asked to be informed what terms of discount would be allowed for prepayment of the Instalments yet to be made, The Board agreed that the Instalment falling due at Lady Day shall be paid in full, and that provided the proposed settlement be effected by that date an allowance of £50 be granted in respect of the remaining Instalments."*

So, this is the point at which Russell stepped in to save the day and transfer ownership of the locomotives to himself. The following Board minute of the March 21st notes:

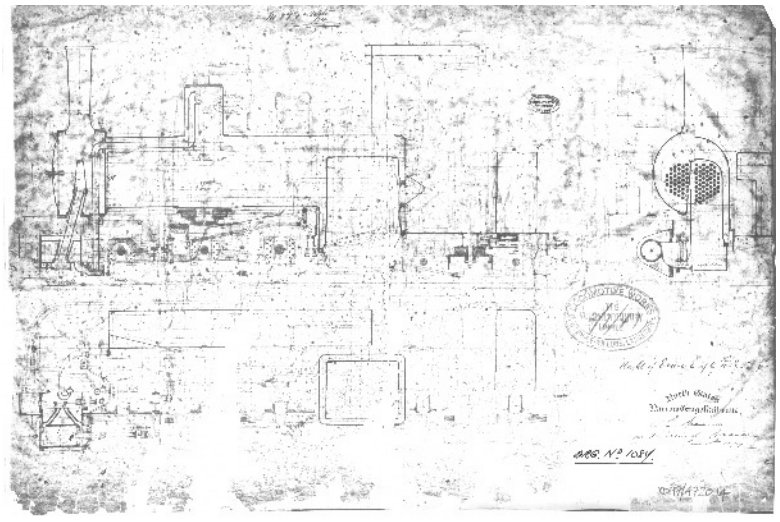
"North Wales Narrow Gauge Railway

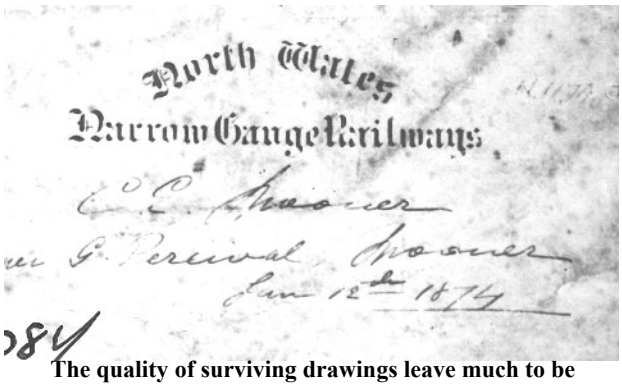
The Board authorised Mr Smith to impress the Company Seal upon the necessary document, or documents, retransferring the Engines, in respect of which arrangements had been completed".

The Board of the Vulcan Foundry must have breathed a sigh of relief that they finally received their money, and the buy-out by Russell, both enabled the NWNGR to function without this debt and propelled him to the forefront of running the line.

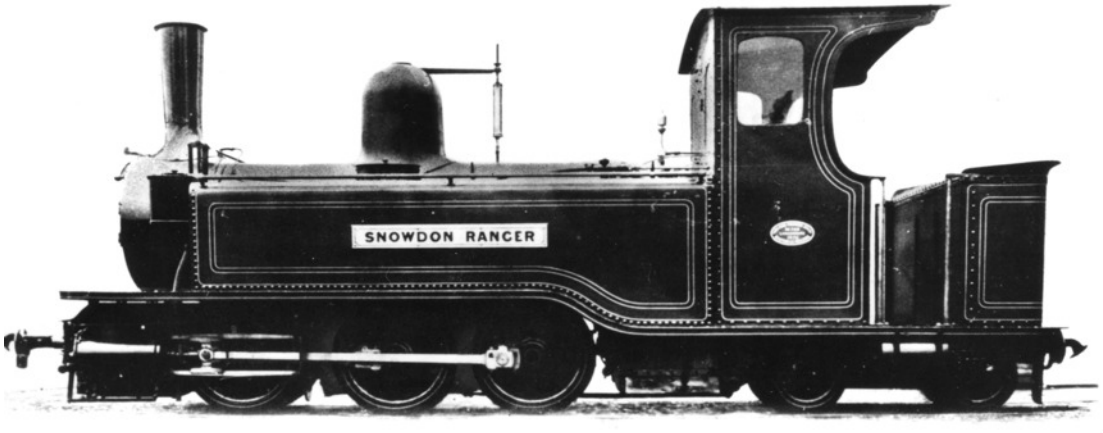
References:

1 Held at Gwynedd Archives





The quality of surviving drawings leave much to be desired. For example, we see (left) the drawing from Gwynedd Archives XD97/472014 noted earlier. Above, we see an expanded rendition of the signature panel (from the bottom right corner) supporting the detailed comments made earlier.



Maker's photograph of *Snowdon Ranger*.

Vulcan reference 1146

WHR 016.

NWNGR Signalling - Tryfan Junction

Peter Matthews has expanded his earlier *WHH* articles on signalling to look at operations at Tryfan Junction.

Back in 2009, I took the opportunity to visit the National Archives at Kew to see what signalling-related items they might have for the WHR. I discussed my findings on the old e-group, with much useful input, mainly from David Woodcock and MRFS. I was asked by David Allan, the then editor of this journal, to write up my findings, and so a number of articles on the signalling at Waunfawr appeared in *WHH* 50, 53 and 54. I started a couple of further articles on Tryfan Junction and Dinas, but due to work and personal circumstances these were not completed, until a recent discussion prompted me to dust them off. This article considers the signalling at Tryfan Junction.

As I explained in my articles on Waunfawr, when considering NWNGR signalling, it is important to remember that it was provided at a time when signalling was still in its infancy, before the adoption of many practices that we now take as second nature. The NWNGR was built in the 1870s as a passenger line, before the concept of light railways came about. The NWNGR therefore required signalling to meet the Board of Trade requirements for passenger railways applicable at that time, the same as any standard gauge railway of that era. Facing points traversed by passenger trains had to be provided with facing point locks (FPLs), and protected by interlocked signals, worked from a signal box. (Had the NWNGR been built some years later, then the stations would probably have only had simple token-released ground-frames, rather than full signal boxes, the standard that was used on the later extension from Snowdon Ranger to Rhyd-ddu.)

In order to understand the signalling, it is important to understand how it was originally intended to operate the line at the time that it was built - which may not be how it was subsequently operated in practice.

We know from Major Marindin's Inspecting Officer's report (reproduced in full in John Keylock's 'history' in *WHH* 66) that the NWNGR mainline from Dinas right through to Bryngwyn was originally worked as one single "One Engine in Steam" (OES) section. The Company was required to provide a formal signed and sealed undertaking that they would only ever allow one engine (or engines coupled) in the whole of that section at any one time. No single-line train-staff or token was provided, nor was there any telegraph or telephone communication provided. What was then the branch from Tryfan to Quellyn was likewise worked as one single OES section throughout. (Further details about NWNGR single-line working can be found in *WHH* 54.)

Tryfan was in the middle of the Dinas to Bryngwyn single-line section, and therefore would not have been signalled as a passing loop (as you inherently can't cross two trains in the middle of a one-train section). There is a comment in Marindin's report that if a passing loop were to be provided then a second platform would be required, which confirms that the loop wasn't intended to be a passing loop. It also indicates that, as the loop at Tryfan had no platform, it was not intended for passenger working.

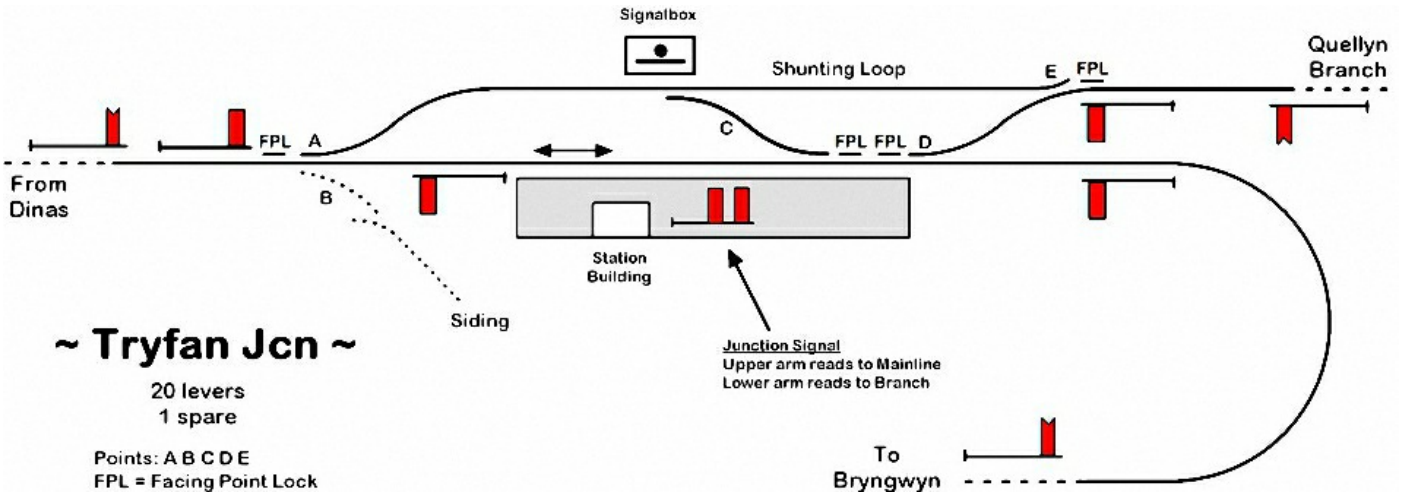
With Dinas to Bryngwyn being one single section, you couldn't for example send a first train from Dinas to Bryngwyn, wait for it to get to Tryfan, then despatch a second train from Dinas for Quellyn, as you would then have two trains in the Dinas to Bryngwyn section. You couldn't even wait for the first train to get to Bryngwyn before despatching the second train, as without any means of communication, how would anyone at Dinas know when the first train reached Bryngwyn? So how was it originally intended to work the NWNGR?

One method, as suggested by Boyd, would be to work it as two independent lines, with the branch train only running between Tryfan and Quellyn, with passengers from Dinas having to change to and from the mainline train at Tryfan. However, this would surely have required some loco servicing facilities on the Quellyn branch. It would also have required a second platform for the branch train to stand at, and some means for the branch loco to run-round its train at Tryfan, independent of the mainline. As none of these facilities was provided, I think we can rule this out.

The early timetables seem to indicate that most trains divided and joined at Tryfan. Trains from Dinas are shown arriving at Tryfan, with departures in the same column to both Bryngwyn and Quellyn. On the return leg, timetables show trains from Bryngwyn and Quellyn arriving at Tryfan, with one common departure to Dinas.

The easiest method of working would be to just couple the two trains together, one behind the other. However, controlling one mixed train of passenger, freight and slate wagons coupled behind another similar mixed train would surely be problematic, especially as none of the stock was originally fitted with continuous brakes. The layout at Tryfan, with a crossover in the middle of the loop, appears purpose-designed to allow mixed trains to be properly re-marshalled when dividing and joining them. We can only conjecture exactly how this was originally intended to be done, but in practice the timetables seem to have allowed very little time for such manoeuvres!

Unfortunately, I have found no signalling plan for Tryfan, and there are very few photographs of the station (not surprising, when you consider that trains only stopped briefly, and it was in the middle of nowhere with nothing to entice anyone to linger there). However, the position of the points and signals can be derived from OS maps. These show that signals were provided on each of the three



approaches – these would have been the home signals. I think it safe to assume that worked distant signals would have been provided, as at Waunfawr, although the Bryngwyn distant is only shown on the 1900 OS map, not the 1889 or 1914 maps. Two additional signals are shown in the station area.

The 1889 map shows a siding, with its point close to the Dinas-end loop point, but this siding appears to have gone by the time of the 1900 map (perhaps re-used elsewhere?). We know that the siding at Waunfawr had a trap point, so it is safe to assume that the siding at Tryfan would likewise have had a trap point, although it is not significant enough to be shown on the OS map.

The same year that I visited the National Archives, excavations at Tryfan during the reconstruction of the platform there found two angle-cranks connected to two signal wires running in tubes through the platform area (*WHH* 46 and 47). These two wires appear to go in the direction of the signal on the Bryngwyn side of the station building, and would have worked two arms on the signal: one arm for when the junction points were set for the mainline, and the second arm for when the points were set for the branch (see photos to the left).

Modern semaphore practice is to have junction arms mounted side-by-side on a bracket signal, but this was not always the case. In many early signalling schemes, the two arms were simply mounted one above the other, on the same post, similar to the way shunting discs for different routes are still mounted one above the other. Just such a junction signal used to exist at St Johns on the Isle of Man Railway, and there is still an example on the Kent & East Sussex Railway. I have therefore suggested a two-arm signal of this form on the diagram.

The signal at the Dinas end of the platform was not to stop a train from entering the section ahead, as a train standing at this signal would already be in the Dinas-Bryngwyn section. This signal was provided purely to protect the points ahead of it.

Signals would not have been provided for shunting moves - these would have been signalled by flags or hand signals. The signal box was located close to the crossover to facilitate shunting moves over the crossover.

There are 9 signal arms shown on my diagram, whereas in 1921 Major Spring reported that there were 10. There are a couple of possibilities for where the additional signal arm may have been. One possibility is that the Dinas-end home signal could also have been a double-arm signal, with one arm for the mainline and one for the loop. This would have been useful if it was intended to divide trains on the approach to the station, as was done at St Johns on the Isle of Man. However, the lack of a second platform at Tryfan, as noted in Marindin's report, plus the lack of any signals

on the loop, suggest that the loop was not intended for passenger trains.

A more likely possibility is that the Quellyn branch home signal may have been a double-arm signal, with one arm for the mainline and one for the loop. This could have been useful for shunting a Quellyn branch train into the middle of a train from Bryngwyn, putting it between the passenger and the freight portions.

Major Marindin's inspection report mentions gravity trains being run. If the signalling at Tryfan was designed with gravity trains in mind, it might have been considered safer to bring a gravity train from Quellyn into the loop, rather than attempt to bring it straight onto the back of a train from Bryngwyn standing on the mainline. Again, a junction signal would be useful for such moves.

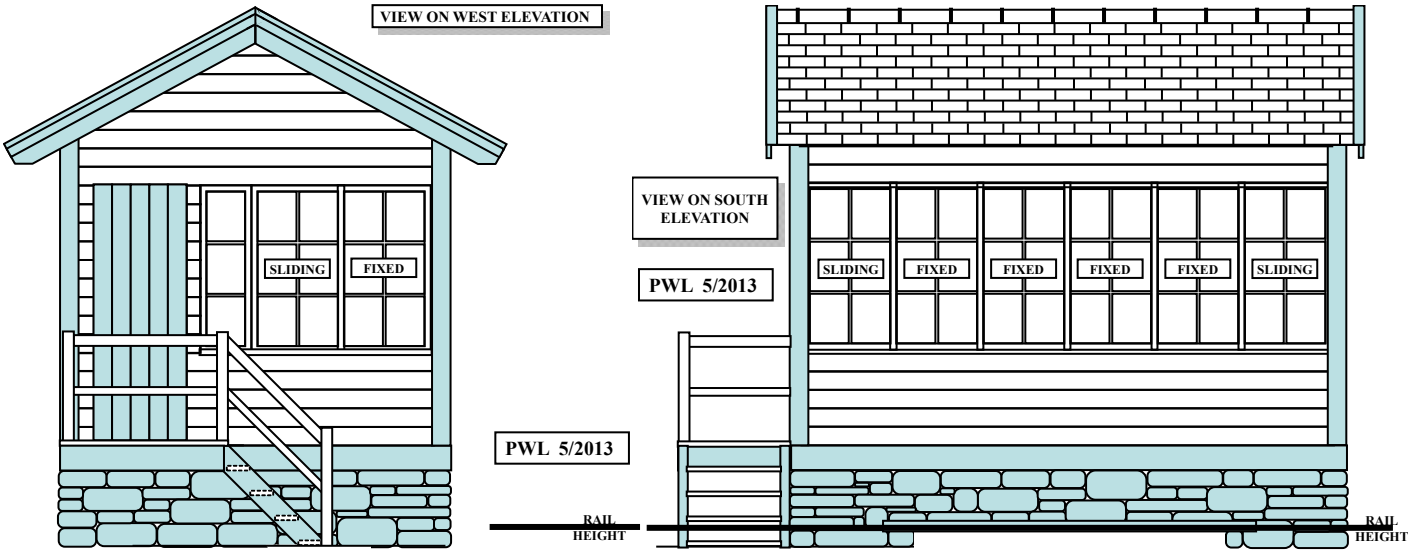
According to Major Marindin's report there were 19 working levers out of 20, so if 10 of them were for signals, that means 9 levers must have been for the points and their facing point locks (FPLs). This matches the diagram, with 5 point levers and 4 FPL levers. This assumes that the siding point B and its trap are both worked from the same lever (as at Waunfawr), likewise both ends of the crossover C are worked from one lever, and one lever works the FPLs on both the loop point A and the adjacent siding point.

There is one last clue as to the original signalling contained in Major Marindin's report: "number 9 lever should be back-locked with numbers 3 and 6". For a start, this tells us that neither 3, 6 or 9 was the spare lever. The signalling plan for Waunfawr shows that the signal levers were arranged at the ends of the frame, with the point and FPL levers in the middle. Assuming that Tryfan was similarly arranged, lever 9, being in the middle of the frame, is therefore most likely to have been a point or FPL lever. There is no reason for a distant signal lever to be back-locked with a point or FPL lever, so it is unlikely that levers 3 or 6 were distant signal levers – they are most likely to be stop signal levers. However, I have to admit that I have struggled to devise a sensible numbering sequence that fits with levers 3 and 6 being interlocked with 9, which is why I have not shown any suggested numbering on the diagram.

When block working was introduced in 1892, Dinas-Tryfan and Tryfan-Bryngwyn became separate single-line sections. Dinas-Tryfan and Tryfan-Rhyd Ddu were worked train-staff and ticket using Wise's patent train-staffs (see *WHH* 44) and block working by telegraph. Tryfan-Bryngwyn remained as One Engine in Steam, with the Board of Trade insisting that a train-staff should be provided.

With the sections either side of Tryfan becoming separate block sections, it then theoretically became possible to pass trains at Tryfan. As noted in Major Marindin's original 1877 inspection report "If at any future time these lines are provided with Telegraph and worked on Block with more than one train on the line it will be necessary to provide passenger loops and runaway points, …". Whereas the Board of Trade were subsequently asked to approve alterations at Waunfawr to allow trains to pass there, I could find no record in the National Archives of them ever being asked to approve any alterations at Tryfan to convert the loop there to a passing loop. Perhaps the NWNGR decided they either couldn't afford to, or didn't need to, alter Tryfan?

In 1906, the NWNGR obtained its Light Railway Order, which meant that signalling was no longer necessary. As at Waunfawr, although the signals may have fallen out of use, the impoverished NWNGR would not have paid out good money for new point levers, when the existing were perfectly serviceable. This would explain why the signal boxes remained in reasonable condition if they were retained for working the points. It was only when the WHR came along, with funds to refettle the NWNGR section, that the points were all converted to hand-lever operation. A stop board was provided for trains approaching from the Bryngwyn direction, replacing the home signal.



Your Editor's drawing of Tryfan Junction Box, derived from the very few available photographs and site measurements - May 2013

Welsh Highland Railway Centenary Research Competition

The Ffestiniog & Welsh Highland Railways, the Welsh Highland Railway Society, the Welsh Highland Heritage Railway and the Welsh Highland Railway Heritage Group are jointly sponsoring a series of activities and events in 2022 and 2023 to celebrate the 100th anniversary of the opening of the 'original' WHR in 1923 from Dinas, near Carnarvon, to Portmadoc.

As part of the celebrations and with the support of Mortons Media Group, publishers of *Heritage Railway* and *The Railway Magazine*, the sponsors of the Centenary are launching a competition for the best piece of original research on the history of the WHR, the North Wales Narrow Gauge Railway Company (NWNGR), its associated activities and personalities for which a prize of £500 will be awarded.

The NWNGR completed the section from Dinas to Rhyd-ddu in 1881 but it was not until the early 1920s that a 1914 Light Railway Order was re-activated and the line re-opened in 1923 as the Welsh Highland Railway when the 'missing' link was completed between Rhyd-ddu and Portmadoc. Subsequently, after a somewhat turbulent financial and operational history, the railway closed in 1937 and was scrapped in World War 2. Not until 2010 were the aspirations of the directors of the NWNGR finally realised when a 'new' WHR was open all the way from Caernarfon to Porthmadog.

The competition will be judged by two eminent historians, Dr Dafydd Gwyn and Gareth Haulfryn Williams and the result announced in June 2023, precisely 100 years after the WHR's opening in 1923 and cash prize of £500 awarded.

Dr Gwyn is a Bangor-born archaeologist, historian and consultant with a long-standing interest in the Industrial and Modern period. He advised Gwynedd Council on their successful bid for UNESCO World Heritage status for The Slate Landscape of Northwest Wales and is a trustee of the Festiniog Railway Company and chairman of the Bala Lake Railway. Welsh-speaker, Dr Gwyn is a graduate of the Universities of Cambridge and of Trinity College, Dublin and lives in North Wales. He is the author of several studies in industrial-era archaeology and in 2015 his major study of the Welsh slate industry was published by the Royal Commission on Ancient Monuments of Wales.

Gareth Haulfryn Williams was born in Llandudno and graduated at Bangor University College with a degree in English, a Diploma in Archives Administration and a research Masters in Welsh History. A former English teacher, then County Archivist of Merioneth, and subsequently in charge of the Caernarfon archives, he retired as Head of Culture for Gwynedd Council in 2003, prior to spending ten years as a translator, heritage consultant and mentor for HLF grantees. He has been a trustee of the Ffestiniog and Welsh Highland Railways Trust, curatorial adviser to FRC and Chair of the Ffestiniog Railway Heritage Company. He is presently Hon. Archivist of the Welsh Highland Railway Society. He has published and broadcast on various aspects of transport and social history and is a Welsh speaker resident in Llanwnda.

Nick Booker, chairman of the Welsh Highland Railway Heritage Group, said " On behalf of the railway's Centenary celebrations committee, I'm extremely pleased that Mortons Media Group is supporting our Research Competition. We hope that the submissions to the competition will shed further light on the complex history of the railway, the area it served and the many individuals involved in its planning, construction and operation and of course its demolition and ultimate re birth. *The Railway Magazine* and *Heritage Railway* have over the years played an important role in reporting on the story of the Welsh Highland and its predecessors. We look forward to them continuing to do so and reporting on a worthy winner of our competition in 2023."

Further details of the competition rules etc are available from Nick Booker at: nick.booker@welshhighlandheritage.co.uk

TIMETABLE

- Registration of interest to submit an entry – March 2022 onwards
- Deadline for electronic submission of completed entry - 28 February 2023
- Winner announced and award of prize – June 2023

SUMMARY OF THE RULES ETC

Scope and eligibility

Original research article on the history of the WHR, NWNGR, its associated activities, customers and personalities eg businesses, directors, employees etc.

Submissions should not have been published elsewhere, or already offered for publication.

For the purposes of this competition, the eligible period is taken to mean the period from 1840 to the present day.

Prize entries should be written in English and / or Welsh and take the form of an essay based on original research. The length of the essay shall not exceed 10,000 words. Essays that are shorter than 3,500 words will not be considered. A Bibliography (the provision of which is mandatory) and references should not be included in the word count, nor should text associated with features such as maps, diagrams, and tables.

Assessment

The judges will make their decision based on the author's:

- Skill and control in using sources and command of evidence
- Clarity and quality of writing
- Contribution to the knowledge and understanding of an aspect of the history of the Welsh Highland Railway and its antecedents
- Originality of approach

Photographed in 1906, the image to the left shows the start of work on the tunnel. The photograph above shows the same area shortly before rebuilding commenced just over 100 years later (in July 1999).

Barrie Hughes has provided a couple of interesting photographs, and accompanying notes, showing the north end of the long tunnel in the Aberglaslyn Pass

There is rough Jubilee style construction track and a loop with six Hudson style skips.

The retaining wall is under construction just north of what is today the T4 north-end portal and the location is where the retaining wall rises maybe 10 m before said portal?

A section of retaining wall has just been completed and is braced with timbers to a standard batter angle while the mortar sets. Many rough pieces of stone on the right hand side remain from the local stone facing of the concrete.

2 or 3 men are on the hillside in the top left moving a guy rope to secure the crane pole. Two other guy ropes are visible, one to the left just above the top of the retaining wall and one going down below the railway.

The chap standing looking might be the foreman supervising the repositioning of the crane as the work advances to the south?

The crane features a swivel collar at the top to which the guy ropes are attached and a bearing just below the yard arm to allow it to swivel.

The yard arm supports a chain with pulleys at each end of the yard arm, both ends of which are attached to the base of the post.

There is rope hanging vertically from the end of the yard arm to swivel it round.

The ladder leaning against the crane suggests it has recently been maintained, possibly after movement to a new position as the works progress south?

An A frame wooden support behind the crane supports a steel beam which in turn supports level planks on the right hand side which run above the bracing.

There appear to be six closely placed planks behind that slope towards the tunnel that might be providing protection from rockfalls for excavation of the footings for the next section of the retaining wall.

At the southern end of the works there is a large cross section timber that slopes to the right and on top of the retaining wall a steel section that slopes upwards to the south that might represent the guideline for the top of the retaining wall.

At the bottom left there are various tools, timbers and a large lockable tool box.

On the bottom right there appears to be a gap in the edge of the formation with a plank bridge over it. To the right of that there appears to be a wheel set parallel to the railway and some wooden braced support posts. Is this part of the sloping incline access to the works seen in some other PBSSR construction photos?

Information on rear of photo:

Retaining wall build in cement mortar
25 ft high 6 ft thick at base
Aberglaslyn Pass
Portmadoc Beddgelert and South Snowdon Rlwy
Spring/1906 by LDT Enlarged from a ¼ plate

From the Editor

As we move through 2022 and 2023, readers might sense a particular emphasis on the histories of our railway and its predecessors. That 'sense' will, of course, in reality be delusory as the history of these railways is both our Group's raison d'étre and has been the primary focus of this, and the previous 94, issues of *WHH*.

However, the Centenaries will, I believe, create a sharper focus on the underlying historical problem that faces us, that is to determine exactly what we do with this history, existing as it does in various intangible and tangible forms, to ensure its long-term security.

In Nick Booker's notes on pages 1 and 2 of this Issue, he highlights a 'missing' element in our collections, that is a logically constructed, and complete, library of of the infrastructure items from our collected railways. This IS a real need, and I hope that members, if possible, will support this activity, but more importantly, I think, this indicates a positive, and necessary, shift in the focus of our activities.

Not only are there no further Tryfan Junction buildings to save and restore, no obvious requirements for replicas of NWNGR or WHR installations, but the lessons learned from creating such assets must be noted. Once a building has been restored it then needs to be maintained, a long-term financial commitment. Apart from the difficulty of finding an income generating use for the building, the potential long-term cost of maintaining a restored Bettws Garmon Station building was the key reason why we opted to stabilise, rather than to restore, at that location.

We do believe that there is a case for restoration, to some degree, of the weigh house at Glanrafon but, and it is a big but, what is the likelihood of that site being accessible, by rail, in future? This debate will no doubt continue. What would such a restoration really offer?

Meanwhile, the real and current problem of preserving, and making readily available, our recorded history remains largely to be addressed.

As but one example, we actually have a compilation of Welsh Highland history in the form of the 95 issues of *WHH* including this present Journal. The first of these, a four-page 'newsletter', appeared in November 1997, starting what has since been over 25 years of work.

That this is a valuable resource goes without saying, I believe, but clearly it also is, in many ways, a flawed resource. We know so much more about the Railway today than Boyd did when he he produced his works between 1949 (*Narrow Gauge Rails to Portmadoc*) and 1989 (*Narrow Gauge Rails in South Caernarvonshire*, 2nd Edition Volume 2) and even since the first issue of *WHH* appeared, that such flaws are evident. However, accuracy of the record represented by the *WHH* collection requires correction and expansion in certain areas. One good example is the collection of Chronologies published between Issues 2 and 27. Firstly, these only covered the WHR and, ideally, should be expanded to cover the NWNG and Croesor Railways, but there is now so much more that should be added. Indeed can be added, to provide a better description of the WHR period.

We started publishing books about 15 years ago recognising then that our members probably had collections of information and/or analyses that should be made more widely available.

The same is likely also to be true now, indeed I think the contents of this Issue well demonstrate this.

Hopefully the focus inspired by the Centenaries will encourage contribution to the various facets of our history.

Continued from Page 12.

Taking the LPC photograph showing the Buffet Car at Beddgelert in 1928 as an example, it is evident that we can see the station building through the windows of the carriage. The station building is irrelevant to simple assessment of the carriage, but it does allow the carriage to be positioned accurately on the layout.

My carriage drawing identified window pillar locations and if we look through the window immediately to the right of the closer door on the nearside of the carriage we can see that the far edge of the central partition 'lines up' just to the left of the window's right-hand pillar. This relationship determines a very precise location and angle of that line of sight through the carriage.

For now I will simply note that this line of sight intersects the station building by the left hand edge of the access door to the Gents' toilets.

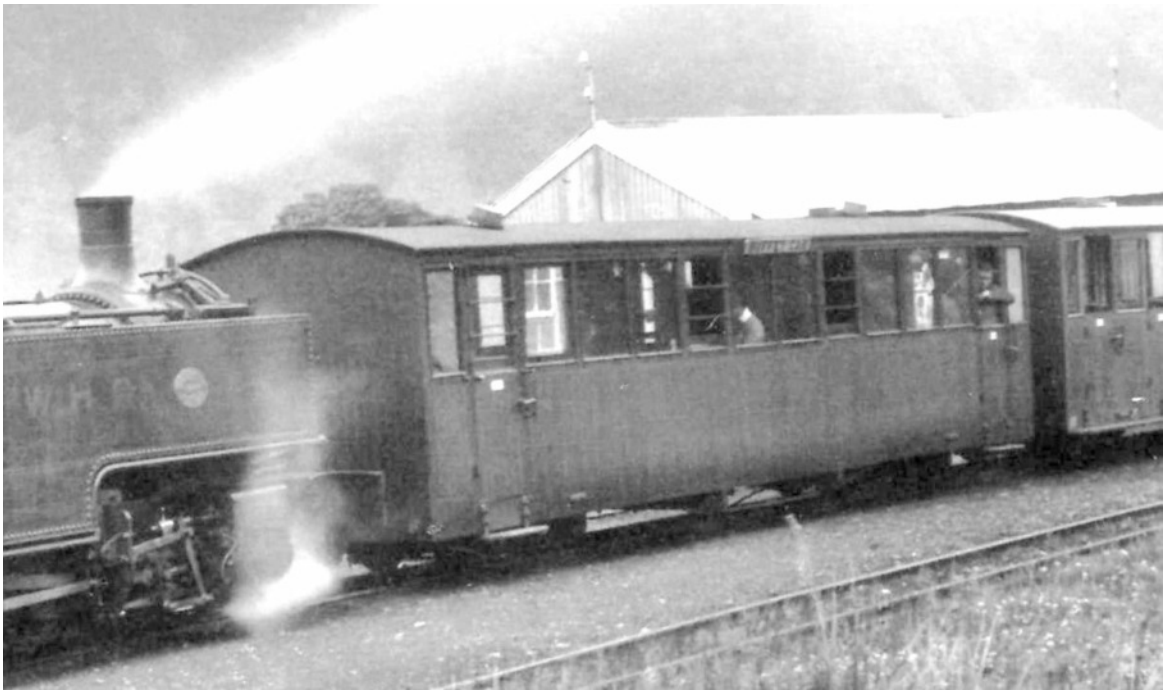
Of course, should two lines of sight be so constructible then where those lines intersect would determine the camera location.

Now I began to muse over the problem of establishing the distance between the carriage and the camera where only a single measurable line of sight is available and this was where a light-bulb flashed to illuminate a distant and, until then, a forgotten memory. Back in the 1950's I had read Fred Hoyle's *The Black Cloud* [1] and, within the early part of this text lay the memory that appeared to suggest the answer.

Next time I will describe how this memory solved this problem and further cemented my interest in the details of photographic analysis.

[1] *The Black Cloud*, Fred Hoyle, Heinemann, 1957, Chapter 1, *Opening Scenes*.

Peter Liddell's Photo Analysis



The Buffet Car in a northbound train at Beddgelert in 1928 - LPC 1660 (later REAL 77876) - WHR 157

Why do I analyse photographs?

I have been interested in photographs for as long as I can remember - taking them, printing them, categorising and saving them. However, I did not really begin to analyse them until I found myself wondering just what the inside of the Buffet Car actually looked like. I was aware of various interpretations of this layout, interpretations which generally did not sit very well with me.

I was contemplating a model of the WHR and, as with all dreamers I suppose, the model was to be a grand affair, not the least demanding full interior detail in the passenger rolling stock. The Buffet Car was a problem. However, I did not realise back then that it would only be a problem if my model was to sit in the period 1927 to 1929!

The approach I chose to adopt involved first the establishment of as accurate a drawing of the carriage as I was able. This was based on 'known' dimensions, correlated with 'counting planks' seen in photographs. It soon became apparent that my overriding problem was the scarcity of photographs. Photos of Ashbury 'Corridor' no. 23 (or 24 after 1926) were available, but from the 1927-1929 period there were only very few. However, I realised that I had to ensure that my drawings fully correlated with the photographs which left me with the problem of deriving, or more accurately, confirming key general arrangement dimensions from the photographs.

My analysis led me to what I considered to be an acceptable external arrangement, a position achieved in the early 2000's after our return from five years in the USA. It was at this point that David Seale put out a request for Buffet Car information ahead of the developing plan to restore the vehicle from the remains recovered from Waenfawr, causing me to revisit the work rather more critically using, I hoped, rather more sophisticated analysis methods than simply counting planks and frames.

To do this, I had to determine for each photograph the position of the camera in relation to the carriage and then, knowing that position, to determine the additional information that might be gleaned from the photograph to support confirmation of the dimensions.

Text books tell of the importance of lens focal length, of aperture, etc., to the proper determination of camera location, but typically we have none of this information when studying our historic images. I thought "there must be an easier way".

Firstly, I reasoned that a reliable line of sight could be established from information in the photograph, a line of sight along which the camera must have been located.

Continued on Page 11.

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