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The WHR Centenary - and more



***Russell* arrives at Tryfan Junction, facing the 'correct' way, with a train of NWNGR stock. Behind the locomotive, we see the Observation Car (No. 8) and then a replica of Ashbury 'Corridor' (No. 9), The flash of green beyond is from the restored Buffet Car, originally NWNGR No. 10. The train was completed by the new replica Pickering Brake Composite - Photo by Peter Roughley - July 2022.**

The Welsh Highland's Centenary Celebrations for 2022 have kicked off in fine style, most notably over the weekend of July 30th and 31st with heritage trains (and road vehicles) operating between Dinas and Rhyd Ddu, once known as South Snowdon, to celebrate the 1922 reopening of this section of the line.

Domestic circumstances meant that at the last moment I was unable to attend but all the photographs, videos and comments from my committee colleagues and others indicate that a good time was had by all including at the Dinas Saturday evening event. The weekend was the product of a lot of hard work from all who have been involved over the last 12 months or so and is an excellent example of what can happen when there is a common objective. As the press release earlier this year said, "…the Ffestiniog & Welsh Highland Railways, Cymdeithas Rheilffordd Eryri, Welsh Highland Railway Heritage Group and the Welsh Highland Heritage Railway will be working together to organise the celebrations". And of course, we will continue to do so for 2023. The highlight of the weekend was seeing *Russell* with the rake of vintage coaches heading out of Dinas to Rhyd ddu and later passing our flag ship restoration project at Tryfan Junction!

Cedric Lodge who managed the Tryfan Junction activities that weekend takes up the story…

"Tryfan Junction was opened and manned for the duration of train movements over the weekend. Saturday was drizzly, but not cold. Sunday was drizzly until mid day, when it faired up and the sun came out.

"Whilst we did not entertain a large number of visitors, those who came were very interested in both our work, and the Railway. Afternoons were more busy than mornings, and if we are to make drinks, we will need two hosts in the future. We did manage to provide tea. There was a marked unsolicited interest in restoring the Bryngwyn Branch. (Food for thought). *Russell* performed well, the sound from Wernlas Ddu particularly evocative. All services ran to time, and there were no failures.

"There was a delicate situation on Saturday evening in the run-up to the arrival of *Russell* and train for the photo run-pasts. We had been instructed to lock the gate to prevent entry by freeloaders. Someone who needn't be named was the first to arrive and he was not best pleased (to be refused

entry). I offered to take £15 from him to come in, but he declined. Donations amounted to over £15."

On the last point, it's worth noting that the photo run-pasts were organised for those who paid to ride on the special trains and for those who had paid to come on to the Tryfan junction site. For those who were volunteering there at the time, the run-pasts were a treat. Of course, anyone is at liberty to take photographs from the road.

The main event to celebrate the opening through to Porthmadog will be over the weekend of June 23rd, 24th and 25th, 2023. This will be based at the southern end of the railway and promises to be a great event involving all three railways and some of the original locomotives that operated on the railway. I regularly nudge Graham Farr on the prospect of the WHHR's Imperial War Museum Baldwin appearing in steam as *590*!

The over arching activity linking both years is the competition for the best piece of original research on the history of the WHR, the North Wales Narrow Gauge Railways Company (NWNGR), its associated activities and personalities for which a prize of £500 will be awarded. This is supported by Mortons Media Group, publishers of *Heritage Railway* and *The Railway Magazine* and who have given the Centenary activities and the competition excellent coverage in their magazines. We have had several expressions of interest and I encourage anyone who fancies writing up an original piece of research on the Welsh Highland to get in touch. Remember that the history of the WHR did not stop in 1937, even yesterday is history. Which neatly brings me on to the Bob Honychurch archive which the Group bought at auction in November last year. This was to say the least a 'mixed bag' or mixed box of material that included not just Welsh Highland material including Bob's own albums of photographs and post cards but also material from other railways in which he had an interest. A significant proportion of the cache was correspondence relating to the setting up of the original WHR Society, later the '64 Company, over a period from 1961 to 1964 when he withdrew from involvement in day-to-day activities. Bob was a prolific writer of letters but not so good at filing and at some point, he became bored with using lever arch files or document cases and merely put the original letter back in its envelope and filed it chronologically in a tray or box. A key initial task was therefore to put all this correspondence into order in new files or boxes.

Anyone who has been involved with publishing, either as an author or a publisher, would be amused by, for example, the letters exchanged between Bob, his fellow committee members and David St John Thomas of the publishers David & Charles over the production of the reprint of Lee's WHR history (the Blue book) and the Red book, *More About the Welsh Highland*. From Mr Thomas's point of view Bob was not the easiest customer to deal with and Bob appears to have made him very cross at times with his demands. This documentation, as it relates to the early days of what became the '64 Company, along with other relevant material, was handed over to the custody of the WHHR for safekeeping in May of this year.

Among the rolled drawings from the auction lots were drawings by an unknown hand of proposed buildings for Nantmor and Beddgelert including a 'running shed' at Beddgelert. Someone was clearly a deluded optimist in the 1960s/70s!

The Welsh Highland-related ephemera, now in the safe hands of the Group's archivist, includes various LMS and GWR advertising flyers promoting trips on the WHR and a FR/WHR 1928 Pocket Timetable, reproductions of which are available for a modest price via Adrian Gray, our Sales Officer. It provides an insight into the WHR activities in the summer of 1928 with twenty-eight pages that not only illustrate the paucity of the Welsh Highland Railway's summer services but also through the many advertisements, the wide spectrum of Portmadoc's business, retail, and commercial activities that supported the growing market for tourism at that time. Given the current dry summer, it's apposite to note that July 1928 was cool and wet from the 3rd to 6th, but then warm dry and sunny until the 26th. Many places went 20 days without rain. The temperature reached 92^0F (33.3^0C) in London on the 22nd. There were thunderstorms at the end of the month [1].

The sale via eBay of a significant proportion of non-WHR photographs and other material has enabled the Group to recoup most if not all of the auction costs.

Other purchases this year have included items described as "An important collection of source material for the complex early history of the Welsh Highland Railway." These were original copies of Light Railway Orders, such as the North Wales Narrow Gauge Railways (Light Railway) Order 1905, and the Portmadoc Beddgelert & South Snowdon Railway (Light Railway Extension at Carnarvon) Order 1908. The seller then kindly gifted to us a London & North Western Railway folder containing the handwritten document listing all the NWNGR and PBSSR Acts and Orders, two maps (one on linen) illustrating the dreams of the North Wales narrow gauge railway promoters and two sepia photographs of the England engine *Little Wonder* with a huge train of vehicles on the embankment near Tan y Bwlch.

We have started to be consulted on the development of the physical interpretation that will be installed in stations along the WHR in 2024, along with web-based apps, as part of the Boston Lodge National Lottery Heritage Fund project. While in the past there has been some very limited provision of interpretation along the route of the WHR, some of it through the efforts of David Allan, the late John Keylock and others, this current project promises to significantly enhance that provision both through traditional methods and those of a more advanced nature. There is more about the project here:

https://nlhfproject.festrail.co.uk/ffestiniog-and-welsh-highland-railways-seeking-local-communitys-railway-stories/ [access verified 14/8/2022]

As you will see from the papers included with this edition of *WHH*, the Group's Annual General Meeting will be held on Saturday 17 September at Y Gweithdy, located at Minffordd station, commencing at 14.00. I look forward to seeing you there.

Reference:

1 https://www.trevorharley.com/weather-july.html [access verified 14/8/2022]

Nick Booker - August 2022.

Signalling Dinas Junction

Picking up on Peter Matthews' article in *WHH* 95, and the discussions several years ago between we two and David Woodcock, I'd like to offer the results of my work [writes MRFS] on NWNGR/WHR signalling over the whole railway, the product of considered thought since 2015. I am grateful to Richard Maund for his kindly supplying copies of the 1877/1878 files held at Kew, these have been particularly useful in ironing out a few queries.

There are few clues from photographs of the installations themselves, so of necessity there is a lot of supposition. However, we are lucky that the NWNG used McKenzie and Holland as signalling contractors: McK&H tended to stick with and adapt their own standard designs. So, if you know where to look, you can find some serving suggestions. For example, there has been an upsurge of interest in the signalling of the New Zealand Government Railways of late - NZGR used McK&H (the Melbourne offshoot, rather than Worcester proper) and there is a lot of single track in NZ. Granted there were several ways in which NZ signalling was peculiar to that country, but you can clearly see the same design ethos used on the other side of the world when compared to the known diagrams of the Blaenau boxes of the late 1870s [1]. There is a very useful corpus of material in a somewhat niche publication on NZ signal boxes [2] as well as copies of nearly every known NZGR signalling notice. Comparing likely installations in Blaenau and NZ, Waiareka Junction springs to mind as a particular inspiration, together with Duffws station.

My plan is, eventually, to address the signalling over the entire railway but publication of this work will necessarily be episodic.

I will start this review by considering Dinas Junction, the northern terminus of both the NWNGR and its successor the Welsh Highland Railway (WHR). Dinas apparently was visited by many more photographers than made it, for example, to the wilds of Tryfan Junction. Consequently, we are much luckier here in that there are several photographs that will aid our interpretation – my thanks to Peter Liddell for supplying them, so I could write this article. Of the selection of photographs available, WHR 014 is most probably the best place to start (Figure 1).

Patient analysis of this image suggests:

> A is the hand lever for the loco shed splitting points, on the approximate straight line of the wires/wire cranks heading off towards the station area.
> B is a chamber, aligned with an extension of Line C: these were signal connections, as discovered at Tryfan Junction and noted in *WHH* 95, and the chamber would have been a crank/transition site.
> D is the rodding run from the signal box to the catch points – note that both catch points are closed; suggesting that these are co-acting.
> E is the line of a pair of rods heading off towards the main station.
> Levers 1, 2, 4 and (just about) 7 are visible in the picture.

WHR 018 (Figure 2) also repays examination: a very clear picture indeed of the frame with the standard McK&H flat-topped levers evident.

> A single lever is just visible to the right of *Beddgelert*'s chimney.
> 6 levers are visible to the left of the engine's chimney:
> 12 normal [just visible behind window upright],
> 11, 10, 9 – all normal,
> then 8 reverse (gap) 6 reverse,
> levers 5 to 1 not really visible, save for one catch knuckle that can be seen.

WHR 169 (Figure 3) gives another good view of Dinas signal box - the same levers are reverse as in WHR 018, both traps are reverse (look at F) and at G the pair of rods is clear, beyond the running rails and following Line E of WHR 014.

Taking these observations into consideration, and bearing in mind the "McK&H way", it seems that the most plausible interpretation of the layout requires both 8 and 6 reversed to get engines into the engine shed. From a design point of view, it would make eminent sense to have the long siding/loco shed points working together with the trap points that we have seen in the pictures. This raises the question of why a second lever? It comes down to McK&H design choices: if there is a route that has a divergence, there would be a signal - if a non-passenger line, then it would be a disc. If there were no possibility of confusion a dependent disc would be used, that is one that would co-act with the junction points. Clearly, this does not apply to a converging route that needs controlling, so logically this would be for moves either leaving or entering the long siding.

Another design principle, used by McK&H, would be to place functions adjacent to each other, which if possible, would allow the use of lug locking between the levers rather than a shaft and another set of cams. It is far more complicated to try and explain than visualise, but consider the cost of a small rectangular piece of metal vs. the cost of several complicated castings.

Finally, functions would be placed on the "approach" side of the lever: so, if the move to be controlled was running right to left, it would be placed on the right-hand side of the point or lock lever. For this design of frame, it is the lock and point levers that drive most of the route locking and releasing. I suggest, taking all the previous factors into consideration, that the second reverse lever would control leaving the long siding and entering the station proper – it would be adjacent to the lock lever for the main line, and whenever that crossover lock lever was pulled (unlocking the crossover) the disc to leave the long siding would have been locked 'normal'.

Following these very broad principles with the main running signals at the outer ends of the lever frame, points and locks in the middle and discs grouped as far as possible next to the points that they read over, I've ended up with

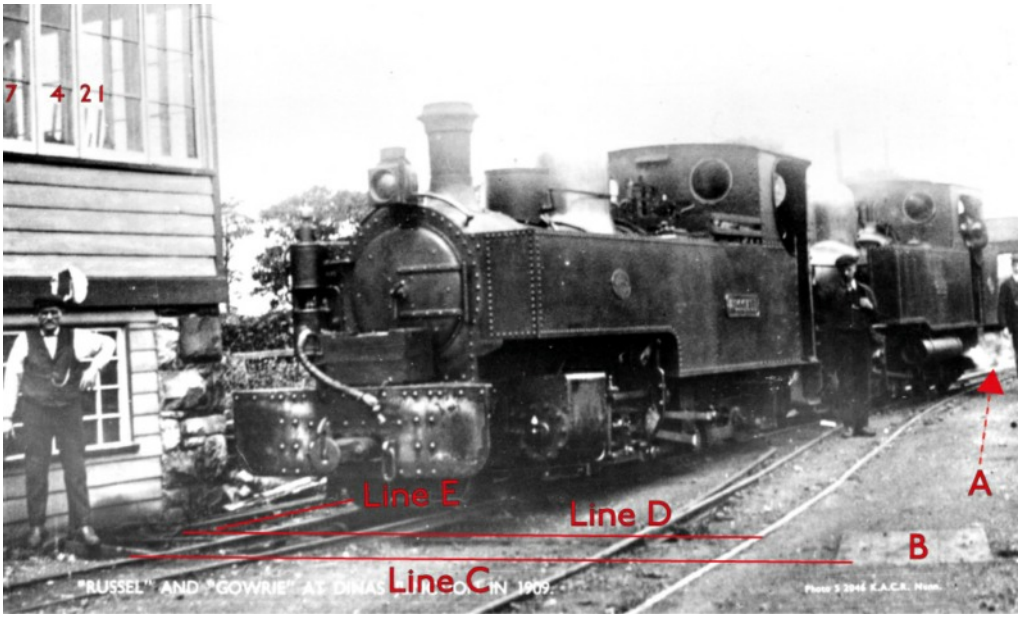


Figure 1.

***Russell*, with *Gowrie* beyond, by the signal box at Dinas Junction**

H.L. Hopwood, June 1909, Ken Nunn collection

WHR 014 (Arch 0014)

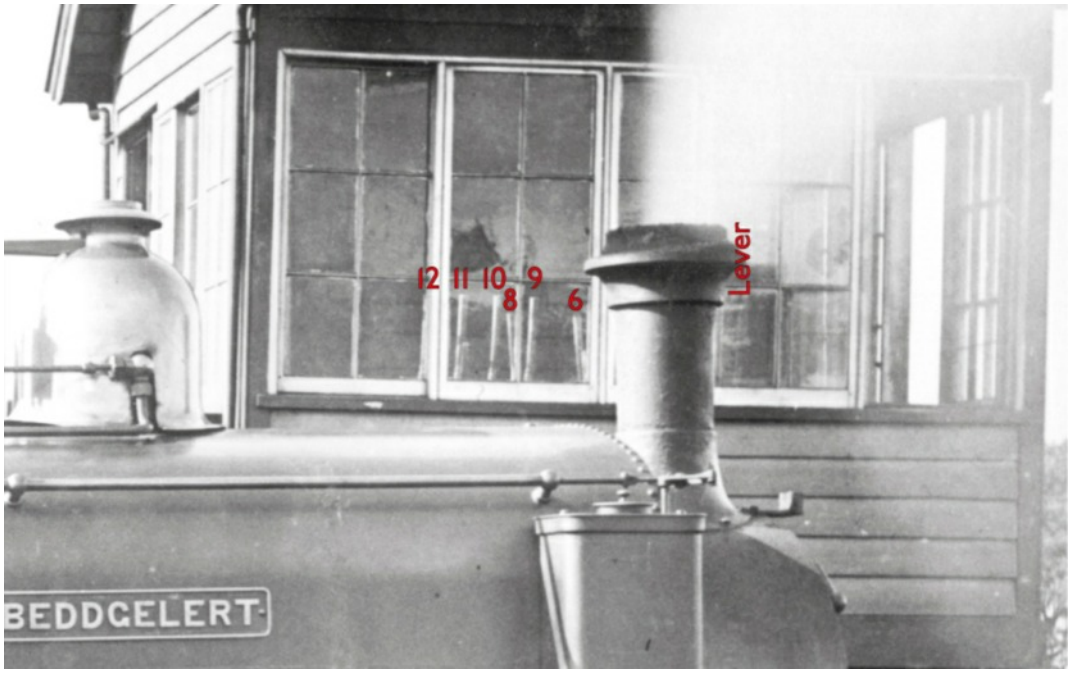


Figure 2.

A detail from a photograph showing *Beddgelert* by the Dinas Junction signal box. The locomotive was standing on the easterly of the two engine shed roads - the full photograph shows *Snowdon Ranger* on the other (west) engine-shed line

LPC 5643 (renumbered by Casserley as 77873) -

1909

WHR 018 (Arch 0018).

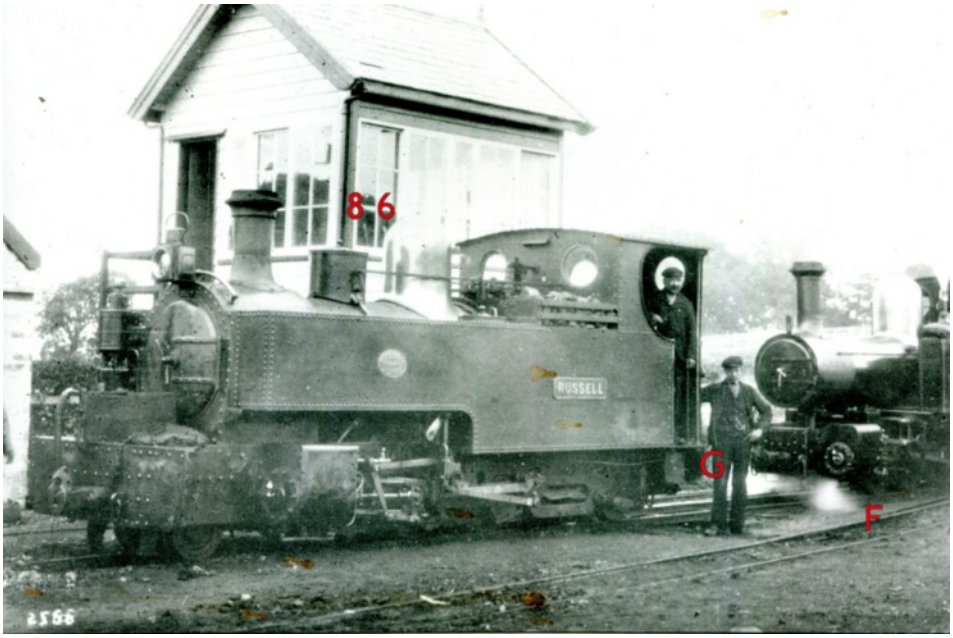


Figure 3.

***Russell*, with *Gowrie* beyond, by the Dinas signal cabin in 1909.**

LPC 2566

WHR 169 (Arch 0169).

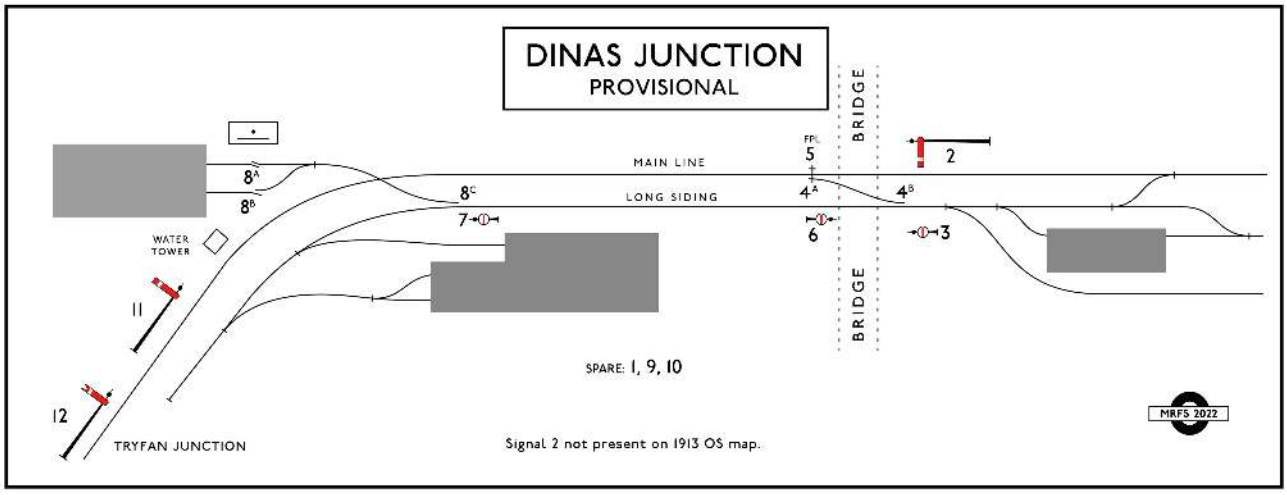


Figure 4. Suggested Dinas Junction signalling diagram derived from photo analysis and study of McK&H standards.

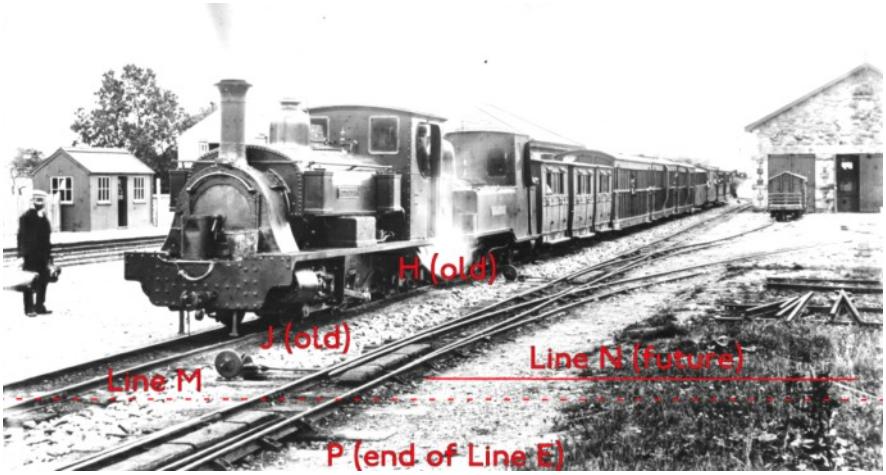


Figure 5.

All three of the NWNGR locomotives then available can be seen in this long train, photographed by A.G. Symons in 1893. Note the original location of the hand levers (H and J) operating the points referred to in the text.

WHR 098

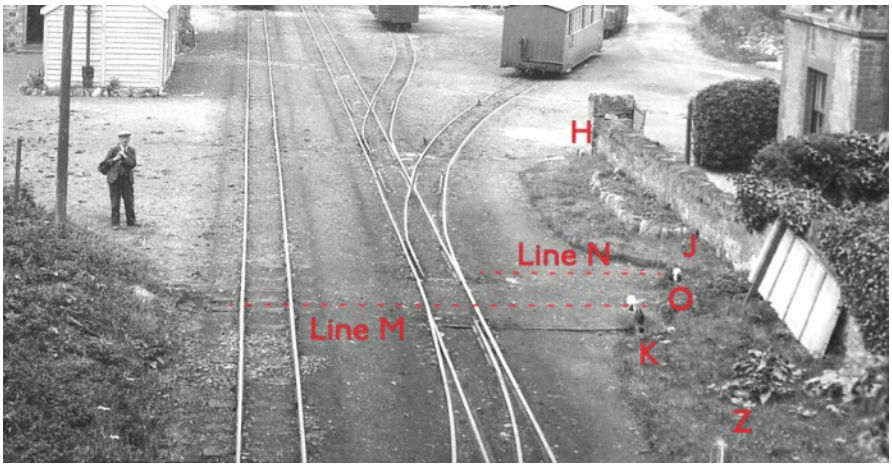


Figure 6.

A view from the road over bridge looking north towards the station area. The photograph was taken by F.M. Gates in July 1934.

WHR 063



Figure 7.

Another view looking north, this time through the road over bridge, showing the complete cross-over installation.

H.F. Wheeller - 14/21

August 8, 1935

WHR 074



Figure 8.

A similar view to WHR 074 but with the camera located under the bridge.

G.M. Perkins - 1909

WHR 137

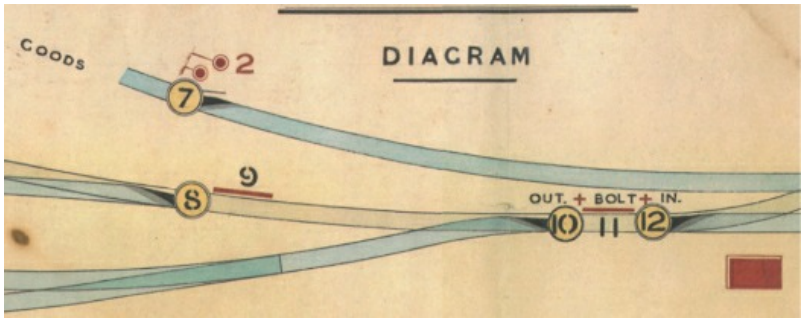


Figure 9.

A part of the signalling plan for Duffws, Blaenau Ffestiniog.

From Gwynedd Archive Services XD97/459027

the attached suggested diagram for Dinas (Figure 4). The keen-eyed reader might wonder why there is no subsidiary arm on the home signal for arrivals from the Tryfan direction to the loop or yard. The reasons for this are perhaps twofold: first the cost, as I am sure a diverging signal would need to be detected at the relevant points – effectively doubling the wire length; second, perhaps the more esoteric reason is one more of the McK&H "quirks" – if you decide on a "primary" route, the locking can be simplified (I've seen Melbourne examples of this approach) – so all arrivals at Dinas were presumed to use the platform, or at least that was the planned primary route.

In the famous 1892 "enormous train" photograph (Figure 5 - WHR 098), the hand levers for the back road and goods shed are visible between the platform and running lines; by the time of the c.1911 photographs of *Gowrie* by Perkins, these hand levers are replaced by patches of brand-new ballast [3]. It is one of those enduring mysteries why this change happened, but it does, perhaps, aid our understanding when looking back at the photographs.

I contend that there are several clues as to the location of NWNG items from photographs of the WHR layout at Dinas. WHR 063 (Figure 6) and 074 (Figure 7) give us some further vital clues to the McK&H installation: but as with many things connected with signalling therein lies yet another puzzle.

In WHR 063 hand levers H, J and K are visible: K is a replacement for the point rodding (as this is one end of the crossover worked by rodding Line E), H and J are both in the location of the c.1911 replacements. It is also worth noting that the verge is very neatly shaped around and towards J and K.

WHR 074 shows the approach to the platform with hand lever L visible to the right. Of note, the rodding between L and the points as well as H and J is not visible. I contend that these post-1923 rodding runs used the old McK&H channels for the disc wire in the case of L, although at the station end of the crossover, it is not so clear-cut. Looking closely at WHR 063, there is an easily distinguished line M from the prominent sleepers to the left, heading towards O and in the case of J when the levers were changed in 1911 the rod was, perhaps, run through the same channel as the wire to the disc controlling exit from the yard/entry to the Long Siding. Perhaps the longer sleepers are for the rail joint in this area.

In WHR 137 (Figure 8), fresh ballast is visible at Y as well as the LNWR boundary post at Z. This boundary post features in a lot of pictures from this angle, and for a long time I thought it was a signal or a gong: neither explanation gave enough reason for it to still be visible in 1930s photographs. Of interest is the continuation of Line E from WHR 014, though only a single rod as the far end of the crossover in this view marked the northern limit of the signal box's point control. Line N also appears in several photographs, and apparently was a slate-covered trench, which ties in with the changes to the hand levers. The combination of WHR 063 and WHR 137 is the key to understanding the signalling installation, but sadly much can only be inferred and not stated with absolute certainty: there may be other interpretations, and I would welcome discussion.

WHR 137 is one of the few photographs of Dinas with the signalling installed, but precious little is actually on view! However, looking very closely indeed at Line E in WHR

014 shows a signal wire pulley with at least two wheels – below Russell's buffer beam: it is highly unlikely that this would be for the Home or Distant from Tryfan as it is on the wrong side of the signal box; this suggests that there must be something other than the Starter at the station end needing a wire. I think to try and answer this it is worth drawing attention to the prominent pair of sleeper ends in the main line at the left hand end of Line M in WHR 063: I suggest this must be the end of the wire trench for the disc signal governing entry into the Long Siding: the shaping of the border also suggests something more important than a hand lever was once located at the other end of Line M, I suggest that this is where a disc signal would have been, at O. Granted, it is odd that a disc would be sited such a way from the points – but there was a near-identical situation at Blaenau.

If you look at the extract from XD97/459027 (Figure 9) you can see that there are a pair of Discs (2) by points 7 at Duffws – a careful examination of photographs [4] will indicate that these discs are sited in such a position to maximise visibility; I think that is why the disc that would have been at O is so far from the track – to allow visibility from the goods shed. The situation at Duffws is very similar. WHR 137 suggests that the main wire and rodding run was along the main line, annoyingly hiding in the greenery! Therefore, the chamber B and the lighter gauge rod that the gentleman has his foot on in WHR 014 are most probably for the disc that controls movements to either the loco shed or continuing along the Long Siding to the sheds. It is worth noting that Casserley (his negative 397 (FW1) – WHR 106) photographed the loco shed splitting hand lever in August 1926, showing it was still an NWNG type "spinning top", suggesting (but not proving) that this point was always operated by a hand lever.

When trying to understand Dinas Junction, indeed any of the signalling installations on the railway, there is little to go on, save tantalising glimpses – we know the totals of working and spare levers from various reports and known McKenzie and Holland practices. I offer this overview in the hope of fostering further discussion. I had hoped that the 1892 "everything moves" photograph at Dinas (WHR 098) might have provided some answers, but all it gave were more questions about the change in hand levers at both ends of the loop, and confirming the end of the rodding for the crossover at P. I did think that I'd seen the wire for the Disc at that end, but it was just a crack in the sleeper. Perhaps this is not the final answer, but, if the levers controlled more points and locks, I would expect there to be much more rodding visible with 12 levers, three of which were recorded as being spare at the time of inspection. Perhaps by 1892 the disc at the station end reading into the Long Siding had fallen out of use? iBase 2974, which is another c. 1911 Perkins picture (WHR 135), after a lot of work in tinkering with the image gives suggestions of Discs 6 and 7, but nothing conclusive.

I suppose the last substantive remaining question to cover is to try and tie down when all the old signalling equipment would have been recovered: we know that there were trains operated on the former NWNG section in 1922. Well, XD97/23312, starting in August 1922 covers this: Tyrwhitt tried to sell the redundant equipment to J.B. Saunders and Co [5] in the middle of August, they politely demurred at the end of September: causing a pithy comment from Jack to Tyrwhitt: "I am gradually forming the opinion that Messrs Saunders are not inclined to make any great effort in our expenses, and I think it well if you keep this matter in mind before a new arrangement is made with Messrs Saunders". Tyrwhitt took up Jack's suggestion and offered the equipment to "all the Light Railway companies".

In the same file is a letter to Colonel Stephens, offering him the equipment, including block instruments, from 8 signal boxes. From that I would take it to mean that the signalling at Dinas, Tryfan, Rhostryfan, Bryngwyn, Waenfawr, Bettws Garmon, Snowdon Ranger and Rhyd Ddu/South Snowdon was in situ in some form until at least August/September 1922, although not in use as Pringle's Inspection Report of July 1922 (MT58/449) reports that "The signals that formerly existed at these stations and the ground frames for working the signals and points, will no longer be used. The posts, signals, rodding etc. have still to be removed".

Footnotes

[1] Various items in the XD97 collection, dating from 1877 right through to 1883, covering the F&B/GW junction and Duffws station.

[2] The good, but only if you're really interested in signalling, book: *New Zealand Railways Standalone Mechanical Signal Boxes of the H J Wynne Era 1900 - 1929*.

[3] WHR 138 (iBase 2977) and WHR 07a (iBase 2978). 2978 shows that the hand levers in the 1892 photograph were moved, and then changed later to a different design. It is tempting to suggest that the change occurred prior to Mount's 1926 inspection, where several other hand levers were altered on the WHR but this needs much further and thorough investigation.

[4] iBase 2295, 1903 and 1894 (slate slabs). Plus others not on iBase.

[5] J.B. Saunders and Co were electrical factors, specialising in signalling equipment, and had agreements with both the Festiniog and NWNG. As far as can be deduced (from XD97/23310) the last agreement with the NWNG, dated from 16 September 1912, suggested the following apparatus:

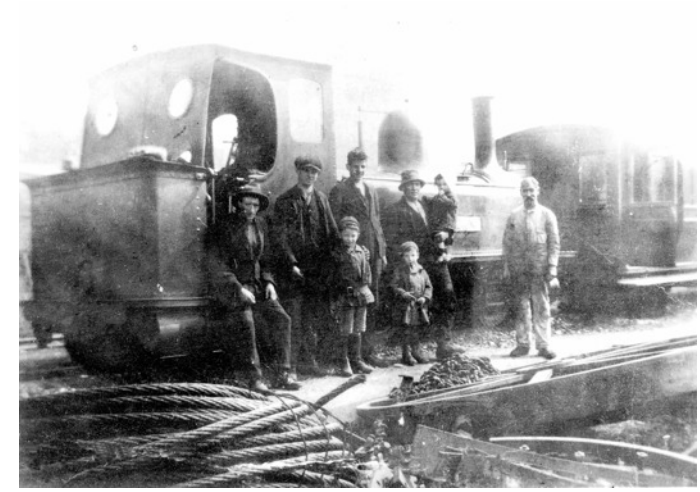
6 block instruments (out of use)
3 telephones
9½ miles of poles
19 miles of wire.

I think it is fairly clear that the six instruments can only have been Dinas (1) – Tryfan (2) – Waenfawr (2) – Rhyd Ddu (1), and the telephones most probably Dinas, Tryfan and Rhyd Ddu.

Marquis de Carabas - July 2022.

NWNGR Fairlies (Part 5)

In the last part of these notes - *WHH* 94, page 3 - I said I would next look at the only pre-Great War photograph of *Moel Tryfan* that has not been included in these notes already.



***Moel Tryfan* with a passenger service at Bryngwyn - Arch 4320(2)**

The Archive currently includes little information regarding this image. However, the presence of one of the Pickering brake carriages fixes an earliest possible date of 1907. Records indicate that passenger traffic on the Bryngwyn Branch ceased from the beginning of 1914, suggesting a 6-year dating window.

The quality of the image is not of the best, however there is sufficient detail to indicate at least that there were no obvious detours from the locomotive standards discussed in the earlier parts of this series. We see the sight-glass steam pipe lubricator with its feed into the pipe just to the rear of the chimney. Unfortunately, Willie Hugh is occulting the sand box installation so we cannot know for certain whether they were still there - we know they had been removed before the 1922 re-opening. However, based on the date of the cessation of passenger traffic to Bryngwyn, this photo appears to predate the merging of *Moel Tryfan* and *Snowdon Ranger* so it seems reasonable to suppose that the sand boxes were still present.

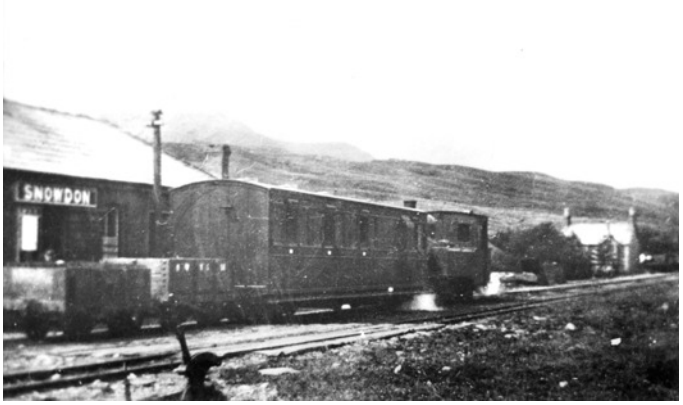
This photograph, with Arch 4241 discussed last time, represent the last two images of these locomotives prior to the Great War. Thanks to that conflict, and the subsequent hiatus in services before the re-opening to (South) Snowdon in 1922 we have no images of these locos until that latter date. For the remainder of this instalment, I will look at the images that are either positively, or fairly reliably, dated to 1922 or to the first 5 months of 1923.

The first of these is Charles Clinker's photo recorded in the Locomotive and General Railway Photo (LGRP) lists as 9075. We have it dated to August 1922 which, if correct, identifies this as an early passenger service following the July 31st re-opening. The train, or at least what we can see of it, comprised an Ashbury 'Corridor' and one of the Pickering brakes.



***Moel Tryfan* recently arrived at Snowdon station. The photo was taken by C.R. Clinker and we have it dated to August 1922 - LGRP 9075 - ARCH 3307**

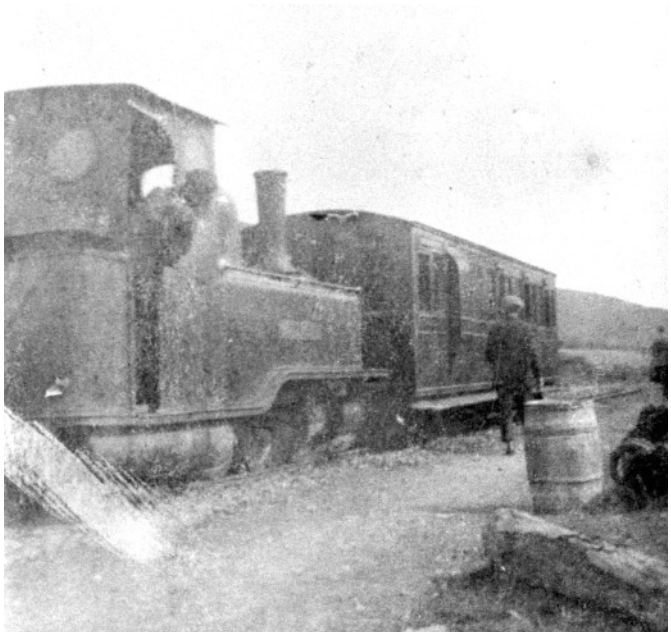
The locomotive, it will be seen, carried no built-in sand boxes but instead sported a metal bucket on the front buffer beam, the bucket handle was hooked over the smoke box door handles, carrying sand should manual sanding have been required. The wire stays apparently fitted circa 1909, discussed in Part 4 of these notes, were still to be seen in Arch 3307. No doubt these were installed for the benefit of crews engaged in manual sanding. There was a patch fitted to the lower rear part of the smoke box and a patch had appeared on the side tank, low down in front of the nameplate.



***Moel Tryfan* with a short train comprising a Pickering brake and two small wooden wagons, one still inscribed "NWNG 58" C.R. Clinker - LGRP 9077 - August 1922 - Arch 3308**

In this scene, contemporary with the previous image, we see more clearly that the station still carried the name Snowdon. Regrettably, perhaps, we can determine little from the locomotive other than confirmation of the 'missing' sand boxes.

The next photograph, whilst still at the 'iffy' end of the spectrum as regards quality, is both redolent of the atmosphere indicated in the previous two images, but adds, (courtesy of the photographer?), additional, and quite specific, information.



***Moel Tryfan* with Pickering carriage at Snowdon station.**
W.L. Box August 10, 1922 - Arch 3882.

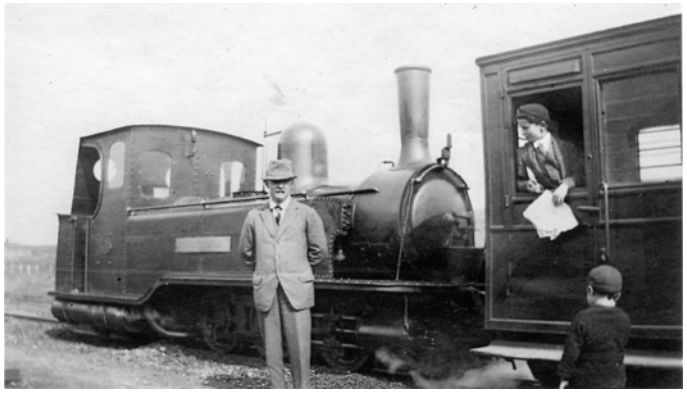
The photographic print - presumably also the original negative - have been inscribed as follows:

WELSH HIGHLAND RAILWAY
SNOWDON (SOUTH) 3.55 PM TO DINAS JC.
W.L. BOX 10. 8. 1922

August 10th 1922 was a Thursday and there was a 3.55 pm departure from Snowdon on weekdays, so to that extent the inscription correlates with timetables. This also would seem to suggest that a train comprising a single Pickering was not unusual for that particular weekday departure.

However, the driver, the guard and a couple of gents on the extreme right - the second gent is visible on the Archive file print - seem fascinated by activity beyond the rear of the train. Is it possible that they were awaiting the appearance of goods stock to be attached to rear, as seen in Arch 3308?

As previously, this image is insufficiently clear to allow detailed assessment of the locomotive's physical state, apart from the lack of sand boxes and, as with the previous images, the locomotive's orientation was still the NWNGR 'chimney first to Snowdon' standard. However, I will return to this image.



Moel Tryfan, coupled to a Pickering brake, appear to stand ready to depart Snowdon for Dinas Junction
- Arch 4893.

The next picture, Arch 4893, presents us with a considerable quandary. The image quality is good, details can readily be determined and, this is potentially important, the sun was shining. However, we have no documented evidence as to the source or the date of this image. So what can we see?

The locomotive was still facing bunker-first towards Dinas. As we shall see in later parts of these notes, this locomotive was turned to run chimney-first towards Dinas more or less immediately the Portmadoc Cross-Town Link was opened, allowing access to the Boston Lodge turntable. Therefore we can deduce this image was taken before mid-May 1923.

At first glance, the shadows cast by the locomotive and the gent posing for the camera would appear to indicate that the sun was aligned, more-or-less, with the track direction. However, a more detailed examination, specifically of the shadow cast by the whistle onto the cab front, suggests otherwise. There are two whistle 'shadows' but the more obvious one, to the left, appears to be a reflection in the cab front. The direct whistle shadow is aligned approximately with the whistle itself. The 'elbow' in the shadow below the physical right-angle bend in the whistle supply pipe gives a good indication of the sun's elevation. It is qualitatively clear that the sun had passed true alignment with the track and had moved somewhat to the west.

The track bearing adjacent to the station building was 156.5 deg. Today, the track has been moved some significant distance to the east. From details seen on the locomotive, we can deduce that the camera sight-line was oriented about 30 degrees to the track centre line. That is to say at 186.5 degrees. However, the shadow cast by the sun can be seen to the left of the whistle, so the sun was not yet fully behind the cameraman. Precise measurements are difficult, but I assess the sun to have been between 5 and 10 degrees less removed from the track centre line, giving a sun azimuth range between 176.5 degrees and 181.5 degrees, that is either side of due south.

This azimuth range, at this longitude, indicates a time range between 12:55 and 13:25 BST. Now the big leap! Were services adhering to the timetable? In 1922 there were departures at 10:40, 13:50, 15:55 and 18:40. However, over the first half of 1923 there were departures at 10:50, 13:00, 15:55, 18:30 and 20:45. If our sun-derived time range is correct, if the timetable was being followed, and if this was an imminent departure, the inevitable conclusion is that the photograph was more probably taken in 1923, before the middle of May, and not during 1922 after the opening in July. Given time, and much more careful analysis, the whistle shadow should yield a sun elevation angle which potentially would pinpoint the actual date.

A quick look back at the W.L. Box photo will show that shadows were visible there as well, this time apparently oriented, more or less, at right-angles to the track, or in the azimuth range 246.5 degrees, plus or minus the uncertainties caused by lack of precise information in the image. However, on Box's declared date of 10th August 1922, this sun azimuth would have corresponded with

16:44. The timetable shows there to have been a scheduled departure from Snowdon Station at 16:40, so this image seems eminently compatible with that departure of this scheduled train and not the 15:55 recorded by Box!



***Moel Tryfan* with short train at Tryfan Junction**
Ken Nunn - 15th May 1923 - LCGB 3517
WHHG 07 - Arch 0276

We are, apparently, spared date 'uncertainties' with the final three photographs in this part of these notes. They were, it is recorded, taken by Ken Nunn on 15th May 1923 and sit in the Archive as the last three images that show the locomotive before being reoriented from "the NWNGR way" and, later, cut down. The locomotive details are very much as seen in Arch 4893 earlier but, given the clear view of the front of the locomotive, we can confirm that it was still air-braked.

The Archive notes suggest that this train was the 09:45 service from Dinas to Snowdon. The timetables do show an 09:45 Dinas departure, arriving at Tryfan Junction at 09:57 and Waenfawr at 10:08. Nunn photographed the train at Tryfan Junction (Arch 0276) and at Waenfawr (Arch 3136 and 3181).

In the Tryfan Junction photograph above we can see hints of sunshine, note the shadows cast by window fittings on the inside of the open doors on the Pickering, but determination of the sun's azimuth is problematic.



Ken Nunn's train arriving at Waenfawr - 15th May 1923
LCGB 3518 (?) - Arch 3136(2)

However, in Arch 3136 we have a somewhat more clear set of sun shadows that can be measured with reasonable accuracy. Our friend the whistle shadow is again visible but more clearly we can see the shadow cast by the telegraph pole standing outside the station building.

Again, knowing the track bearing at this point on the original railway, 124.8 degrees, and noting that the photograph was taken before the sun reached alignment with that track bearing (the telephone pole shadow was pointing towards the track) we can deduce that the sun's azimuth was 107.8 degrees. On this date, that azimuth indicates the time to have been 09:35 BST.

This is interesting as this indicates that the photograph was taken 10 minutes before the scheduled service was due to depart Dinas.

The first two of these three photographs show the 'passengers' peering out of various carriage windows, from which glimpses it would appear that they were, in fact, footplate crew. By 15th May, the Portmadoc cross-town link was 'open', at least to construction and test traffic. At this time, *Moel Tryfan* was reportedly in a pretty parlous state and not really up to the rigours of scheduled passenger traffic. It therefore seems possible that Nunn actually photographed the locomotive, its single carriage - a brake vehicle - and a goods vehicle en-route to Boston Lodge, running ahead of the scheduled 09:45 train which, through a process of elimination, was probably headed by *Russell*.

After the locomotive was turned at Boston Lodge, an eminently sensible move it would seem, given the generally steeper gradients between Pitt's Head and Portmadoc, to place the fire box at the 'downhill-end' of the boiler over the southern section.

As we shall see next time, after turning but before the railway was officially passed by the inspectors and finally opened, crews were apparently still concerned regarding the state of the boiler and its tubes.



A head-on view of *Moel Tryfan* at Waenfawr, fully contemporary with Arch 3136.

15th May 1923 - LCGB 3519 - Arch 3181

This final view from Nunn's set gives a very nice head-on view of the locomotive after stopping at Waenfawr, perhaps for the last time in this configuration? Next time, turning the locomotive and operations ahead of its being 'trimmed'.

From the Editor

As noted elsewhere in this Journal, the next AGM, our 24th, will be held on September 17th, 2022, at Y Gweithdy, the converted workshop, at Minffordd Station on the F.R.

The meeting will start at 14:00 hours.

For the benefit of members, those who can attend and those who cannot, I include as separate inserts a copy of the Meeting Agenda and a summary version of the Group's Annual Accounts for 2021 - Income and Expenditure, Balance Sheet and the table of Committed and Uncommitted Funds.

Further paperwork, e.g. officers reports, will be available on the day.

These pages have occasionally been graced with articles addressing signalling arrangements on the NWNGR. Looking at these articles, it is apparent that a primary focus has been the signalling layout at Tryfan Junction, on which layout opinions have been exchanged.

Our member MRFS has been looking at overall NWNGR signalling and has produced, at least provisionally, signalling layouts covering all points (pardon the pun) between Dinas on the one hand and Bryngwyn and Rhyd-ddu on the other. These, it is intended, will progressively be covered in *WHH* articles, starting with his analysis of Dinas elsewhere in this issue.

We hope that this series of articles will progressively establish a definitive history of NWNGR signalling - this is specifically an NWNGR issue as the WHR was largely signal-free - but the quality of that history will depend on this being as thorough a debate of these issues as possible. I am sure we number more than one signalling expert within our ranks and I hope this breadth of expertise can properly be captured during this exercise.

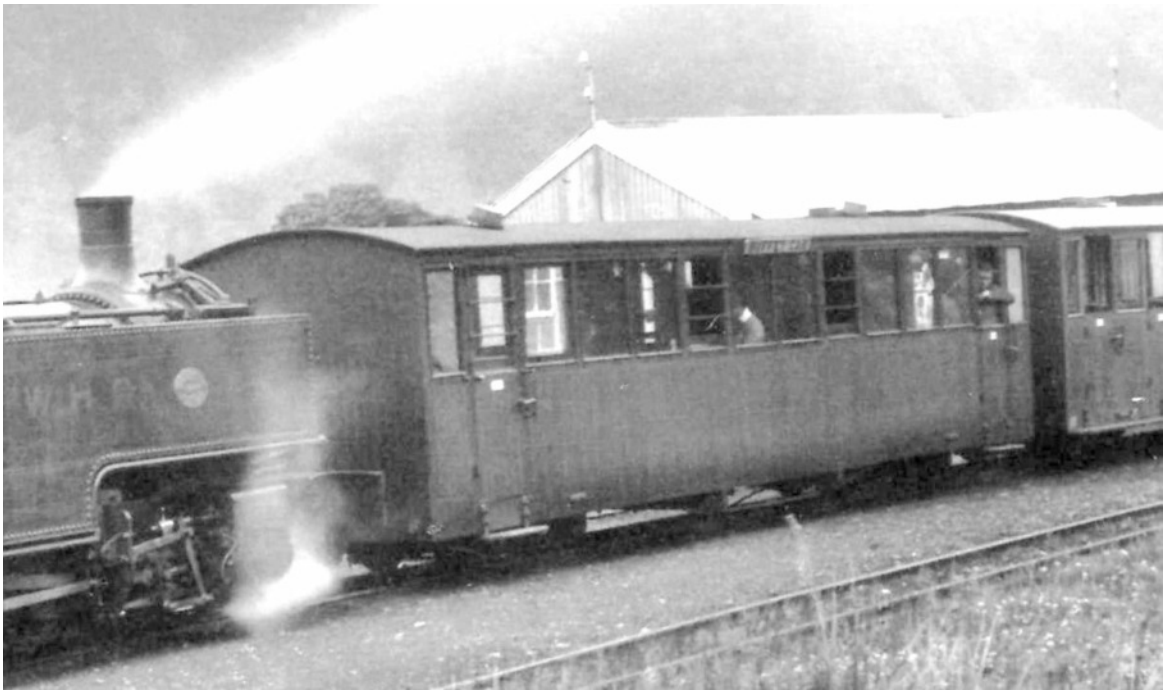
This work, I suspect, might also lead to the clarification of other railway related conundrums - as but one example, the work so far has clearly determined, in a number of our minds at least, where the temporary "Quellyn" terminus was really located before the line was extended to Snowdon Ranger by June 1878.

More on this in a future *WHH*!



***Russell* with a four-coach train heading east through Tryfan Junction Station on the 1922 Centenary Weekend. As noted on page 1 of this Issue, the 4 carriages were: the Metropolitan Observation Car (The Gladstone) of 1891, the 2010 replica of NWNGR Ashbury 'Corridor' NWNGR No. 9, the fully restored Ashbury Corridor NWNGR No. 10 configured as the WHR Buffet Car in which form it served between 1927 and 1929 as WHR No. 24, and the 2021 Replica of Pickering Brake Composite NWNGR No. 8 - Photo by Jon Potter.**

Peter Liddell's Photo Analysis



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

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 to the camera location problem.

> *'Sorry I don't understand all this,' broke in Weichart. 'I don't see why you need the speed of the cloud. You can calculate straight away how long the cloud is going to take to reach us. Here, let me do it. My guess is that the answer will turn out at much less than fifty years.'*
>
> *Then followed a somewhat lengthy calculation at the end of which Weichart announced: 'And so you see that the black cloud will be here by August 1965, or possibly sooner if some of the present estimates have to be corrected.'*

This latent memory triggered a subliminal thought in my mind when I noted that the near end of a carriage I was then studying in a photograph 'looked bigger' than the identical far end. I deduced *Weichart's* method and, using 'distance' instead of 'time' as my 'horizontal' axis - he knew how far apart in time his two images were, whereas I knew the length of the carriage - out popped the distance between the camera and the carriage.

It wasn't quite that easy, *Weichart* had the benefit that the cloud was travelling directly towards him; however, it is clear, as seen in the case of the photograph above, that we do not always have that advantage. The above example is eased, as I showed last time, as we can deduce the angle between the carriage centre line and the photographer's line of sight, at least at one point on that centre line. Sometimes this easement is not available and the solution then would involve iteration, seeking the combination of distance and angle that best matches the various 'clues' that can be seen in such images.

Using these techniques, my finally-determined camera location was almost exactly 62 feet from the near corner of the carriage, placing the cameraman on the raised ground adjacent to the water tower - whilst the running lines descended at 1 in 40 through Beddgelert station, the goods and water tower sidings were arranged 'on the level', creating the height difference between the water tower siding and the main running line.

Much followed from this determination, particularly concerning the internal layout of carriage number 24 when it was configured as the Buffet Car.

When looking back at this exercise, one lesson stands out, that is that ideas that allow problems to be solved do not necessarily come from the problem environment. Indeed, having studied 'innovation' I would argue that solutions most probably will come from 'unfamiliar territory', after all it is a mathematical certainty that there is very much more that we DO NOT know than that we DO. Further, that difference is growing on a daily basis!

We owe it to ourselves to be as open-minded as possible - not easy as this seems not naturally how we humans are 'wired'!

[1] *The Black Cloud*, Fred Hoyle, Heinemann, 1957 (but the narrative opens in January 1964), Chapter 1, *Opening Scenes*.

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