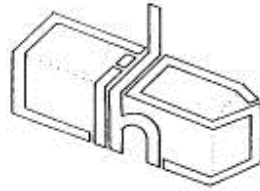


Cumbria Industrial History Society



# BULLETIN

[www.Cumbria-industries.org.uk](http://www.Cumbria-industries.org.uk)

No. 94

APRIL 2016



## TYNE BRIDGE BREWERY AT ALSTON

A possible site to be viewed on the May walk (MDS Collection 1975)

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## EDITORIAL

Another summer is approaching quickly and the Society has its usual full programme with hopefully something for everyone.

However behind the scenes things are not quite so smooth. Your committee is getting into difficulties and we are getting desperate for new blood. At present we are desperately in need of a person to take over the treasurer position from Alan and we are also in need of a person to take over the position of conference co-ordinator on a temporary basis at present. If you do not fancy either of the above positions then we need members on the committee to provide support in general. If you are interested contact any of the committee members for more details.

## SOCIETY EVENTS 2016

### **SPRING CONFERENCE & AGM. SATURDAY 16<sup>TH</sup> APRIL. 9.30AM. SHAP WELLS HOTEL.**

#### **FOREIGN INFLUENCES ON INDUSTRY IN CUMBRIA.**

This year we are looking at people who are not native to Great Britain and the effect they have had on Cumbria industry or industries they have started. Booking form is available on the website.

### **ALSTON TOWN SUNDAY 8<sup>TH</sup> MAY 11.00 AM STATION CAR PARK.**

This is a walk around the town of Alston to look at the remains of the industry within the town lead by Alastair Robertson a renowned local historian.

### **OLD HALL FARM BOUTH 8<sup>TH</sup> JUNE 6.30PM.**

This will be a private visit to this farm which is run using horses etc. and has a collection of old agricultural implements and machinery. Hopefully at least one steam engine will be in steam. There will be a charge of £5.00 (half price rest subsidised by the Society). Tea, coffee etc. will be available at the end

**LOWCA AND PARTON SUNDAY 31<sup>ST</sup> JULY OLD HARRINGTON NO.10  
COLLIERY PIT YARD. (NX 985 218) 11.00AM**

A walk around the villages and the foreshore of Lowca and Parton to look at the remains of the industry in the area. Lead by Dai Powell.

**KIMBERLEY TISSUE FACTORY BARROW 13<sup>TH</sup> SEPTEMBER 2PM.**

This is a visit to the tissue paper factory in Barrow to look at the process. Numbers will be limited, if you would like to go please let Helen know..

**AUTUMN CONFERENCE INDUSTRIES IF MILNTHORPE. Saturday 15<sup>th</sup>  
October at Preston Patrick Village Hall.**

Details in August Bulletin.

**NOVEMBER EVENING MEETING**

Provisional arrangements for Les Gilpin to talk on the mills of Cark at Greenodd Village Hall. Further details to follow.

**ABSTRACTS**

**WORKING ON THE RAILWAY: THE RISEHILL TUNNEL NAVVY CAMP,  
CUMBRIA.** Naomi Brennan Industrial Review 37, 2 pp99-110, November 2015.

Above Dent station the Carlisle – Settle railway passes through Risehill Tunnel. This tunnel was driven both from either end and also from two shafts sunk along the length of the tunnel. Each shaft had a Navvy camp associated with it as well as workshops etc. In July 2008 Time Team carried out a survey and trial excavations at the site of Air Shaft 2 and this is the report of this.

It gives the background to the Carlisle and Settle line and a look at tunnelling techniques of the time as well as living conditions of the navvies in such an in-hospital conditions.

**SITE NEWS.**

**HAIG PIT MUSEUM.**

The museum has closed after only been open for a few months after a multi-million pound upgrade. It has been placed in receivership.

This appears to be another case were the various funding bodies are happy to give money for wonderful projects but provide no funding for ongoing running costs. So called

consultants provide reports giving projected income from visitors, but these rarely appear to be accurate.

## PORT CARLISLE

There has been approaches to demolish the breakwater at Port Carlisle to recover the large stone blocks. Although the sea lock, basin and some of buildings associated with the canal are listed and the village is a conservation area, the breakwater was not. Our member John Gavin has put forward an application for listing.



Breakwater at Port Carlisle.

## LONDON ROAD GOODS SHED.

Built in 1881 by the Midland Railway it is on the site of the original Carlisle Station from the Newcastle to Carlisle railway. The premises have been empty for a number of years and has suffered some damage. The whole site is being looked at for redevelopment. The building has recently been listed but a planning application has been submitted to demolish the front part of the shed which contained the offices etc. It is probable that is the most significant part of the building



In the same area the Railway Inn on London Road opposite the old tram-sheds is also in a derelict state.

An archaeological assessment of the area by Oxford Archaeology North is available at [https://library.thehumanjourney.net/2420/1/full\\_rep\\_reduced.pdf](https://library.thehumanjourney.net/2420/1/full_rep_reduced.pdf)

WINTER FLOOD DAMAGE

POOLEY ROAD BRIDGE.

This road bridge dated 1764 on the parapet collapsed on December 5<sup>th</sup> 2015.

BELL BRIDGE NY 365 430

A humped backed bridge over the river Caldew. Built 1772 after a previous bridge had been destroyed in a flood in 1771!!



BELL BRIDGE IN 2010.



PENRITH TO KESWICK RAILWAY.

There was considerable damage as the railway passes through the Greta gorge.



Brundholme Bridge now beached. Photo by Fred Lawton.



Remains of bridge abutment NY 2938 2473. Photo by Fred Lawton.

There is also damage to the track bed in various places.

Away from bridges storm damage has washed away part of the cliff (mainly made of colliery waste) below Wellington Pit at Whitehaven and exposed some of the original stone work.

## **PHOSPHATE ROCK FROM MOROCCO TO WHITEHAVEN**

Albright & Wilson manufactured phosphoric acid at their Marchon Works by reacting sulphuric acid (made on site) with phosphate rock ('rock') which, for the most part, was imported from Morocco. Smaller quantities of rock were purchased occasionally from countries such as Israel. Initially the phosphoric acid was used wholly in the manufacture of Sodium Tripolyphosphate which was a 'building agent' in the formulation of detergent washing powders. In later years some of the phosphoric acid was purified further for sale in a variety of applications.

Morocco was the Western world's largest exporter of phosphate rock (1981) and its quality lent itself well to the ease of manufacturing phosphoric acid by the so-called Wet process which involved reaction with sulphuric acid. The first phosphoric acid plant at Whitehaven opened in 1952 and shipments of rock began using Marchon's own sea-going vessels but this paper describes operations as carried out in 1982.

The Moroccan Phosphate deposits were principally contained within two rock fields - Khouribga and Youssoufia. Early shipments of rock to Whitehaven were made from the Khouribga field via the port of Casablanca. In later years following the commissioning of the F5 phosphoric acid plant at Whitehaven in 1979 shipments were increasingly made from Youssoufia via the port of Safi.

Phosphate rock was transported by rail from Khouribga to Casablanca in 50 ton rail-cars of which 65 made up a train. There were major storage and loading facilities at the port which could accommodate vessels of up to 12m draught (approx 38000 tons).

Youssoufia is some 70km east of Safi and rock was transported to the port in trains of 78 wagons conveying in total some 3900 tons. Smaller vessels of up to 9m draught (some 24500 tons) could navigate Safi.

In 1982 phosphate rock was shipped to Whitehaven in bulk carriers chartered from A/S Bulk Handling of Oslo. These vessels were loaded in Morocco at the rate of some 2000 tons/hour. Their rock carrying capacity fell into one of the four categories tabulated below;

<b>19000 tons</b>	<b>26000 tons</b>	<b>34000 tons</b>	<b>38000 tons</b>
Bagru	Bakar	Bardu	Haverne
Bahma	Bakja	Bauchi	Havfalk
Biakh	Balao		
Bangor	Ber		

Bani	Blix		
Havfru	Havtroll		
Havman	Stavern		
	Trym		

The 19000 ton capacity vessels were actually owned by a Chinese company which chartered them to the Norwegian consortium. This was the size of vessel used most commonly on voyages to Whitehaven.

Casablanca is some 1300 miles from Whitehaven and required some 4-5 days sailing time. Safi is some 100 miles further distant and a typical sailing time was 5 days. Even the smallest of the vessels listed above was far too large to enter the Queen's Dock in Whitehaven and so all carriers were obliged to anchor just under 3 miles offshore. Lighters (m.v. Odin and m.v. Marchon Enterprise) were then used to ferry the rock the last few miles into port.

The carrier's cargo was discharged using deck-mounted cranes which could load each lighter in about 4 hours. These smaller vessels left Whitehaven on alternate tides and, given good weather, were able to make one round trip per day.

The Enterprise was owned by Albright & Wilson and was built in 1961. She brought a typical cargo of 2150 tons of rock into port on each trip but this could be increased to a maximum of some 2400 tons depending upon the height of the tide.

The Odin of 1968 was a motor barge purpose-built for the trans-shipment of rock into Whitehaven and averaged some 2700 tons (maximum 3400 tons) per trip. She was leased from her joint owners James Fisher of Barrow and Torvald Klaveness & Co A/S of Norway.

At the Queen's Dock the lighters were off-loaded using two cranes each fitted with a mechanical grab capable of holding 4 tons of rock. This rock was discharged into a mobile radial hopper which fed onto the first of 3 conveyor belts in series which transferred their load into either of two dockside concrete storage silos. An unloading rate of 400 tons/hour could be achieved, limited only by the capacity of the conveyor belts. In 1981 520,000 tons of rock were shipped from Morocco to Marchon.

The concrete storage silos were erected in 1964 and each could hold approximately 3100 tons of rock which was bottom-discharged into lorries for transfer to the works using a combination of offtake valves and rubber sleeves. In 1982 the maximum gross vehicle weight was 32.52 tons and so each lorry could convey some 18-19 tons of rock to the works on each trip of about 2 miles.

At the Marchon works the lorries could be discharged directly into the phosphoric acid plants or into one of several storage buildings for later use. These buildings and their approximate capacities are tabulated below;



<b>Building Name</b>	<b>Rock Capacity (tons)</b>
F5 Storage Building ('Cathedral')	31000+
Clinker Building	35000
Miag	30000
'Rock Blister'	18000
'Small Blister'	4000
Old '3d' Piece	4000

Not all of these buildings were necessarily in use at any one time (some could also be used to store other materials) but it can be seen that a considerable quantity of rock could be stored on site - essential as a contingency against adverse weather affecting off-loading at sea and very useful if a rise in the price of rock was in the offing!

Rock shipments ceased in 1992 following the closure of the last remaining phosphoric acid plant (F5) at Whitehaven. This closure was caused by a combination of factors not least of which were the environmental concerns expressed by pressure groups such as Greenpeace. (By-product gypsum from the phosphoric acid manufacturing process had been discharged directly into the sea from the very earliest days. Although in itself this substance is harmless it did carry with it some of the naturally-occurring heavy metals and radionuclides present in the original phosphate rock. It could be argued that Greenpeace achieved only a pyrrhic victory with the closure of F5 since this discharge was merely transferred to Morocco instead.)

More compellingly by 1992 F5 was some 13 years old and an economic lifespan of 10 years for plants subjected to such harsh reaction conditions had always seemed to be reasonable - although Marchon had always been adept at prolonging the life of their manufacturing plants. A replacement for F5 would have necessitated considerable capital expenditure which could hardly be justified. In addition further sums would have been necessary to refurbish the ageing sulphuric acid plants which provided an essential feedstock. By 1992 the Moroccans had been manufacturing phosphoric acid for some years and it made economic sense to purchase this acid rather than rock for use at Whitehaven.

With the closure of the F5 plant rock shipments ceased and the manufacture of the large quantities of sulphuric acid needed to react with it was severely curtailed resulting in the closure of 2 of the 3 sulphur burning plants. The Odin and Enterprise were taken out of service since there was no other use for them. The dockside silos were subsequently demolished and the port of Whitehaven lost its largest source of commercial revenue. However this loss of industrial activity enabled the harbour to be converted to a marina for pleasure craft in later years with a small number of fishing vessels also using its facilities.

'Green' (or impure) Phosphoric acid was subsequently purchased from Morocco and was shipped into the Prince of Wales Dock in Workington. From there it was transported to the Marchon Works by road tanker. The dockside storage tanks which had been used to store the molten sulphur used in the manufacture of sulphuric acid were converted to

store phosphoric acid instead. These shipments continued until 2001 when all of the phosphate operations at Whitehaven (now owned by the French firm Rhodia) were closed down and the plants demolished.

**AUTHOR: BRIAN QUAYLE**



Marchon Enterprise Whitehaven Harbour. April 1980. MDS Slide collection.

### **THE KESWICK WINDMILL.**

#### **Comments by Stuart Cresswell**

I have examined four images of Keswick dated in the first half of the 18<sup>th</sup> century and now I am fairly confident that the Keswick windmill was a figment of artistic imagination.

#### **JAH View of Keswick 1849**

Actually the painting is inscribed “Bassenthwaite from Keswick JAH 1849”. JAH is probably John Adam Plimmer Houston RSA (1812-1884). I have studied the original in Keswick Museum and if we assume that it is a “true” representation, then it must have been painted from roughly where St John’s Church now stands.

The original is wider than that shown in Newsletter 92 and importantly the path into the town in the gully to the right runs to the right of the windmill with a bank rising to its right. The “cliff” in the Bulletin copy is the slopes of Dodd (with Carlside alongside, but

not visible in the Bulletin copy) rising to a cloud girt Skiddaw. Opposite Skiddaw and clearly shown is Barf and not so clearly the entrance to Winlatter Pass with a white house on a rise which I believe is still there on the top road from Braithwaite to Thornthwaite.

In the centre can be seen Crosthwaite Church silhouetted against Bassenthwaite Lake (though it looks a bit oversized) and the Moot Hall just to the left of the mill. Perspective suggests that the mill is south (left) of the line through Crosthwaite church and the Moot Hall which tallies with the suggested viewpoint. Greta Hall is absent.

St John's Church's foundation stone was laid in 1836 and the dedication service was in 1838, its school was built in 1840 and Battersby Hall in 1849. At least the school should be in an "exact" picture of 1849. The mill is probably where the school should be. Battersby Hall if built before the painting would be on the rise to the right. In practice it is in Church Street which falls away to the flattish area near Penrith Road.

The path/road to the right of the mill ought to be the turnpike/toll-road to Ambleside which passed the church at this point. However, it does not look sufficiently substantial and it appears to be going downhill too soon.

The "path" to the left could be the path that currently goes past the graveyard to the roundabout on Borrowdale Road.

The houses to the left of the mill are (possibly) those in the High Street area. There are two rows with, at the right end of the nearest, a square block of masonry. At first sight this appears to be the base of the mill but it cannot be so - the mill is to the right of the second row. That seems strange because the sails would have hit the ridge of that row whenever the wind was from the south west - the prevailing wind! I believe that the "broken sail" is the beam used to rotate the cap and sails to face the wind. However that beam disappears behind a chimney and could not give full 360<sup>o</sup> rotation.

While on impossibilities, regardless of whether the school had been built, I doubt that it would have been possible to see the upper windows of the Moot Hall which are shown clearly. If the school had been built it would not be possible to see any of this view from the ground level at the church - the school blocks it all!

**John Westall's etching** is said to have been done in 1836. (Keswick Museum has an uncoloured print which I have examined.) However it shows a completed St John's church (and a possible new rectory). There are two possible towers to the right of the church. One is dark in colour and the other light. Neither has a domed top. The dark tower corresponds roughly to the windmill position in JAH's painting, though it appears further into town. Greta Hall is just "below" Bassenthwaite Lake.

I have doubts about three of the buildings in this etching - the church, the building to the left of the possible windmill stump and the building (and possibly its neighbour) to the right of the white gable immediately to the right of the stump. They all have a different "quality" of line and texture to the rest of the picture and look (to me) as if they have

been added after the original etching – which is sensible seeing the church was not completed until two years after the etching!

There is a **W(illiam) Westall etching** done in 1819/29 from roughly the same viewpoint (the sharp and steep double bend in the Ambleside Road just below Castlerigg Manor or possibly the top of Manor Brow). It has the Moot Hall tower but not St John's Church AND there is no evidence of a windmill type building. (The view does not extend as far as Greta Hall.)

There is a second **W(illiam) Westall view of Skiddaw** (of similar date) from (maybe) Castlehead which has the town in view. It also has neither St John's nor windmill but does have the Moot Hall and possible Greta Hall though it is dark not white as in the other views..

It is possible that JAH made a sketch of the view from the rise on which St John's Church was built before it was built and only made the painting later. Even so, I think that he has used a fair amount of artist's licence in the foreground. In particular, though it is possible, the windmill appears to be built on a substantial mound which is odd because there is not one there and it would have been better built where the church is now. Also the rough ground between the path and road is unlikely.

He may even have re-visited the site in 1849 but preferred the earlier view so had to guess the layout of the houses in the High Street area. It might have been then that he realised that pictorially the picture needed "closure" at the right to prevent the viewer's eye drifting out of the picture and so used his imagination to put in the windmill stump. A windmill is the only object (apart from a tall tree which would be inappropriate in this "urban" scene) that can stand up sufficiently to provide "closure" and still appear credible.

I suspect that the copies of the John Westall 1836 etching in Keswick Museum and seen by Fred Lawton are taken from a plate that was doctored to include a completed St John's Church and the windmill stump; and that this was done to accord with JAH's painting.

On balance I think the windmill is an artist's whim to make the proportions of the painting better balanced.

I could be wrong! A search in the Derwentwater Manorial Archives could find references to a windmill.

### **THE LAST DAYS OF HARRISON AINSLIE**

Newland Furnace Trust have been given some copy letter books written by the Backbarrow furnace manager and covering the period 1910 to 1917. They show that in some ways the method of working was the same as it had been when the furnace was owned by the Machells. They were working in campaigns whose length depended on the supply of charcoal, the charcoal was bought by the dozen sacks and carried in swills,

keeping track of the charcoal sacks and repairing them was the subject of many letters and the sale of eels made a contribution to profits. Local birch beesoms were used for sweeping up.

Local charcoal was still the preferred fuel but now it was called country charcoal to distinguish it from chemical charcoal, distilled in retorts. The chemical charcoal was dry and free from stones, soil, sand and brands but much more expensive, so was only used to extend the campaign.

The charcoal was riddled as previously but instead of the small coals and dust going to blacking mills, it now went to charcoal dealers. The best grade, described as "blown nutty" was used in the brass foundries at Vickers and Harland and Wolfe, the worst found horticultural uses at Holehird gardens and Ulverston golf club. Another purchaser was the Furness Chemical Company at Greenodd.

A dynamo had been installed but the manager had not yet learned how to charge batteries, a job that seemed to need constant attention until a rheostat was installed. Accumulators were charged for other businesses, including the Swan Hotel. Incandescent lamps were mentioned in December 1912 and 50 carbon filament bulbs ordered the following year but in 1925 the manager ordered 16 dozen metal filament bulbs (20 to 60 watts) as well as carbon filament bulbs of 32 and 50 candlepower.

Most of the letters were from the furnace manager, Yakob Tornblad to Mr C E Ray at the Lindal Moor offices, and Mr Ray might have been a difficult man to work for. The furnace used 1 ton of red ore to 2 tons of white ore, no larger than 1 ½ inches square but without too much dust. The mines manager may have been sending what he could get as Lindal Moor mines were closing down about this time, but it was rarely the right quality, quantity, size and proportion for the furnace manager.

They were not kind to the horse, either: *"We have no hay for our horse again. If you allow us we can get some hay from the co-op Society but perhaps you prefer us getting it from Lindal. At any rate we want some hay urgently."* *"We are without hay again and have nothing to give the horse but that old bad hay which we are using up for bedding. So please let us have some hay first thing. Also please let me have an order for 1 sack of bran."* When the furnace was blown out in April 1911 the horse was sent back to the mines. The furnace manager borrowed a horse from Croasdale and again had to beg for hay to feed it.

After the campaign which ended in February 1912, the furnace was re-lined. The order went to the Gillhead Coal, Firebrick and Ganister Co, Flimby for the following blocks, to be delivered in this order:

30 bottom blocks

A complete circle each of 5A, 6A, 7A, 8A, 9A, 10A.

3 complete tuyere sets, No 52

1 timp brick, No 53

A complete circle each of 11A, 12A, 13A, 14A, 15A, 16A, 17, 18, 19.



1 Damstone, No 0  
1 Damstone No 00  
A complete circle each of Nos 20 - 31  
A complete circle of No 32A  
2 tons of fireclay.

He also placed orders for 2 new bronze tuyeres.

Mr Tornblad did not stay to see the relining finished. On 26 July 1912 he requested a day off to go to Manchester on private business and on August 19th he appointed a nightwatchman and left. His successor, T Helander ran the furnace for two brief campaigns. He was particularly concerned about the quality of the charcoal, arguing that it would be better to buy by volume, so that the charcoal burners would have no incentive to include sand, stones and dust. Riddling the charcoal employed two men full time and he was concerned about the cost of melting the stones. An analysis of a particularly good delivery of chemical charcoal was 7% small and nutty and 190 cubic feet to 1 ton but he doubts that it was worth 25/- a ton more than the 49/- a ton that he paid for the best country charcoal. That compares to 40/- a ton for the blown nutty and 20/- a ton for second quality waste.

Mr Helander left about September 1913 in a gap between letterbooks. Before leaving he arranged for the manager's house, Park House to be decorated with his successor choosing the wallpaper.

A J Cornfield discussed the possibility of a chemical charcoal works at Backbarrow and made an estimate for re-lining the furnace but it was not blown in during his time. His letters are concerned with the sale of charcoal waste, sand, slag, scrap metal, eels (340lb) and even the laboratory balance. From May 15th 1915 the letters are addressed to the Pennington Mining Company. The last letter, 8 Jan 1917, asked on behalf of Mr While whether Casson and A J Cornfield are insured under the workmen's compensation act. Mr While was about to take over the furnace as the Charcoal Iron Co.

A final volume covers 1923 - 26 but is more of an order book. The first 3 orders are signed AJC. There is no evidence here that the furnace is in blast but Leven brand pig iron was being made in a cupula fired by coke. There are orders for pig iron, coke, fluorspar, pig bed sand and haematite. The Lancashire boiler and horizontal engine were in use at this time. Batteries were not mentioned in this book but the numerous lightbulbs ordered were specified as 240 volts and the dynamo as 8 KW 230 V. Hay was not mentioned but the horse got a loin sheet and belly band and shared the work with a 1924 Ford 1 ton petrol lorry.

The letterbooks have now been deposited in Barrow Records Office. If anybody would like a transcript please email me at [metasequoia@hotmail.co.uk](mailto:metasequoia@hotmail.co.uk).

Peter Sandbach.

## **BOOK REVIEW**

### Recording Railway Peripherals

In these techno-times we've learned that no item of modern communication is complete without a host of additional attachments. Every computer needs its monitor, its mouse, a printer, a keyboard, perhaps a scanner, digital camera and microphone before advantage can be taken of the capacities of the basic machine. What are now known as peripherals have equivalents in many other settings. Among these the railway system is a prime example.

A set of recent illustrated booklets by Russell Firth provides a fascinating insight into three distinct items of furniture that were add-ons to the core fabric of the railways of Britain. As the original railway formations were driven across land that had to be acquired from the existing owners, the marking of new boundaries was a necessity. Consequently each railway company devised or adopted its own individual means of indicating their boundaries and these are the subject of the first booklet. Most markers were cast in metal in a variety of shapes and generally lettered with the company initials. Some were carved in stone almost in the style of a small headstone. A local example of a Furness Railway stone boundary marker from Plumpton Junction, near Ulverston is illustrated by a photo of Roger Baker's taken from our Society's webpages.

Although cast iron boundary signs are weighty objects they have nevertheless become collectible objects for railway buffs and few remain in their original locations.

A second booklet focuses on the plates that railways attached to fixed structures like bridges and viaducts. These were important as identifiers for maintenance purposes and also for being able precisely to describe the location of a train in the event of a breakdown or accident. Each structure along a section of the railway would be numbered sequentially and the details were then held in a printed bridge register. A cast metal plate was then attached to prominent positions on each structure or were fixed to a metal bracket or post. Again companies adopted their own designs, many oval in shape, some square or rectangular, or occasionally round. Often a company would employ a distinctive shape, casting plates with clipped or incised concave corners. Most plates appear to have been cast with fixing holes already provided but practice varied between companies: some had a hole at either side of the plate, others one at the top and another at the bottom, and occasionally holes at the four corners were set in the mould. Always the most significant feature was the prominent display of a number, either painted black on a white ground or less often white on black ground. At least one company adopted a blue enamel plate with white numbers and the precursors of the Southern Railway had already claimed a distinctive green for the ground for their plates which later became the hallmark of the Southern Region. Companies differed in the additional lettering applied to their bridge plates. Some included company initials, others named to the branch line to which the plate number applied. Clearly companies' foundries generally produced these plates in-house and valued their distinctive designs. Being of a more portable nature than other railway furniture, bridge plates have acquired a value on the lucrative railwayana market and usually all that survives on railway structures today is a bridge number stencilled in fading white paint on a bridge parapet. However, a newly redecked bridge at Tridley on the Furness section sports a smart new Network Rail enamel plate detailing its precise location. So perhaps the honoured practice of the old pre-grouping companies is going to be maintained after all.

Russ Firth's third publication deals with the less familiar but once vital bridge notices. Those who have read of the trails that beset Mr Wilfrid Lawson of Brayton Hall in his attempts to employ the latest agricultural technology on his Blennerhasset estate may remember that in 1864 his new Fowler steam ploughing engine damaged a bridge over the Maryport & Carlisle line at Baggrow and in 1871 "Abel" another agricultural engine broke through the deck of a railway bridge at Dearham. Bleakly, Lawson records that "the law being hard on road locomotives, we got all the expenses to pay." With the advent of traction engines all railway companies needed to protect themselves from damage to bridges over their lines, as they had not been designed for anything heavier than horses and carts. Large cast metal signs were erected either side of railway bridges prohibiting use by vehicles above a specified weight or of "any weight beyond the ordinary traffic of the district." With the passage of the Motor Car Acts of 1896 and 1903 standard signs of a diamond shape capable of being adapted to meet the circumstances of individual bridges were introduced, many of which survived into recent times. A rare local example of such a sign which features in the booklet is one devised by the Maryport & Carlisle Co. with the warning message painted economically on to a diamond shaped wooden board. This illustration along with a number of other local examples was discovered by Russ in the photographic collections of the Cumbrian Railways Association.

Russ's booklets are of A4 size with card covers and each has around 80 pages. They cost £7.50 each plus postage and can be ordered from the author on [nja750@yahoo.co.uk](mailto:nja750@yahoo.co.uk)

Alan Postlethwaite.

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