RAILWAY & CANAL HISTORICAL SOCIETY

2019 AGM WEEKEND

Abbey House Hotel & Gardens, Abbey Road, Furness, Cumbria, LA13 0PA

Programme & Tour Notes

Welcome to the 2019 RCHS AGM Weekend organized by the NW Group Committee.

These pages of notes are intended to add to your knowledge and/or remind you of the areas we shall be visiting during the four coach tours. Where maps have been included, these are not intended to be replacements for the source maps, but to aid location of sites on shown on OS, Alan Godfrey, and other maps.

In producing the notes, a number of publications have proven to be useful - Those we have relied on most are:

A Regional History of the Railways of Great Britain vol 14, David Joy (David & Charles, 1993)
An Introduction to Cumbrian Railways, David Joy (Cumbrian Railways Assoc., 2017)
Railway Passenger Stations in Great Britain: A Chronology, Michael Quick (Railway & Canal Historical Society, 2009)
The Furness Railway, K J Norman (Silver Link, 1994)
The Furness Railway: a history, Michael Andrews (Barrai Books, 2012)
The Furness Railway in and around Barrow, Michael Andrews (Cumbrian Railways Assoc., 2003)
The Railways of Carnforth, Philip Grosse (Barrai Books, 2014)
The Railways of Great Britain: A Historical Atlas, Col M H Cobb (Ian Allan, 2005)
The Ulverstone and Lancaster Railway, Leslie R Gilpin (Cumbrian Railways Assoc., 2008)

Maps of the area, both current and historical, include:
O.S. Maps: Explorer Series, Sheets OL6 & OL7
Alan Godfrey Maps (Barrow): 21:07, 21:08, 21:11, 21:12, 21:15
Alan Godfrey Maps: 21:04 (Furness Abbey, 17:04 (Grange), 16:03 (Ulverston)
Memory Map, European Edition: 1800s, 1900s & 1920s editions (useful if used with a GPS device)

We would like to acknowledge the assistance of the following for their assistance with the weekend:
David Nussey, Gerald Leach, Graham & Sue Lancaster, Paul Hudson, Roger Taylor & Roger Brice,
and also Peter Holmes & Geoff Holme of the Cumbrian Railways Association.

RCHS NW Group Committee

RAILWAY & CANAL HISTORICAL SOCIETY

2019 AGM WEEKEND

Abbey House Hotel & Gardens, Abbey Road, Furness, Cumbria, LA13 0PA

Members & Guests Attending

John	Armitage	Brian	Freeborn	Ian	Mitchell
Rita	Barnish	Wendy	Freer	Ian	Moss
Michael	Beale	Nigel	Freer	Patrick	Moss
Catherine	Beale	Don	Graham	David	Nussey
Dennis	Beer	Mary	Graham	Richard	Nussey
Vicky	Beer	Oliver	Green	Bernard	Parkinson
Victor	Behrman	Rodger	Green	David	Parry
Charles	Bicheno	Graham	Hague	Elspeth	Parry
Christine	Borthwick	Judy	Hague	Cedric	Rainer
Grahame	Boyes	Bob	Haskins	Hazel	Rainer
Allan	Brackenbury	Sheila	Henthorne	Douglas	Robinson
Bob	Bramson	Nick	Higton	Stephen	Rowson
Sally	Bramson	Pauline	Higton	Derek	Rudman
Roger	Brice	Jill	Hogwood	Marion	Rudman
Stephen	Broadhead	Jeremy	Hogwood	Matthew	Searle
Phillip	Brown	Julia	Holberry	John	Sharp
Maria	Brown	Barbara	Holmes	Robin	Shinkfield
Richard	Byrom	John	Howat	Rob	Shorland-Ball
Peter	Carleton	Paul	Hudson	Jeff	Smith
Pene	Carleton	Andy	Hutchings	David	Smith
Ted	Cheers	Bill	Jagger	Chris	Smyth
Mike	Constable	Angela	Jones	Roger	Taylor
Graham	Cooper	Brian	Jones	Michael	Thomson
Richard	Coulthurst	David	Joy	Fred	Thornton
Anne	Coulthurst	John	King	Paul	Trickett
Peter	Cross-Rudkin	Graham	Lancaster	Andrew	Wager
Pat	Dennison	Richard	Lasson	Kath	Walpole
Stephen	Dewhirst	Gerald	Leach	Graham	Wild
Christopher	Dick	Julia	Leach	Margaret	Wild
Sandra	Dick	Peter	Martin	John	Woodcock
Jane	Ellis	Margaret	Martin		
Peter	Filcek	Michael	Messenger		

Thursday 25th April: Barrow Museum and Lectures

A programme of visits to the Barrow Dock Museum and illustrated talks at the Forum Theatre

Friday 26th April: Coach & Rail Tour – Barrow to Ravenglass & Dalegarth, via Millom, Foxfield & Askam

08.45 Coaches leave hotel car park for Ravenglass & Eskdale Railway. Visit includes a steam-hauled RCHS Special from Ravenglass to Dalegarth (& return), the museum, signal box, engine shed & works (with guides on hand)
Lunch at Dalegarth station
Return coach journey to include visits to Millom, Askam station, Askam Pier (home of the Mersey Flat "Oakdale"). There will be views of Duddon viaduct, Foxfield signal box & the quarry incline at Kirkby.
19.30 Dinner (Great Hall, Abbey House Hotel) followed by presentation of Transport History Book of the Year awards.

Saturday 27th April: AGM (Abbey House Hotel). Coach Tour: Ulverston, Roa Island and Barrow

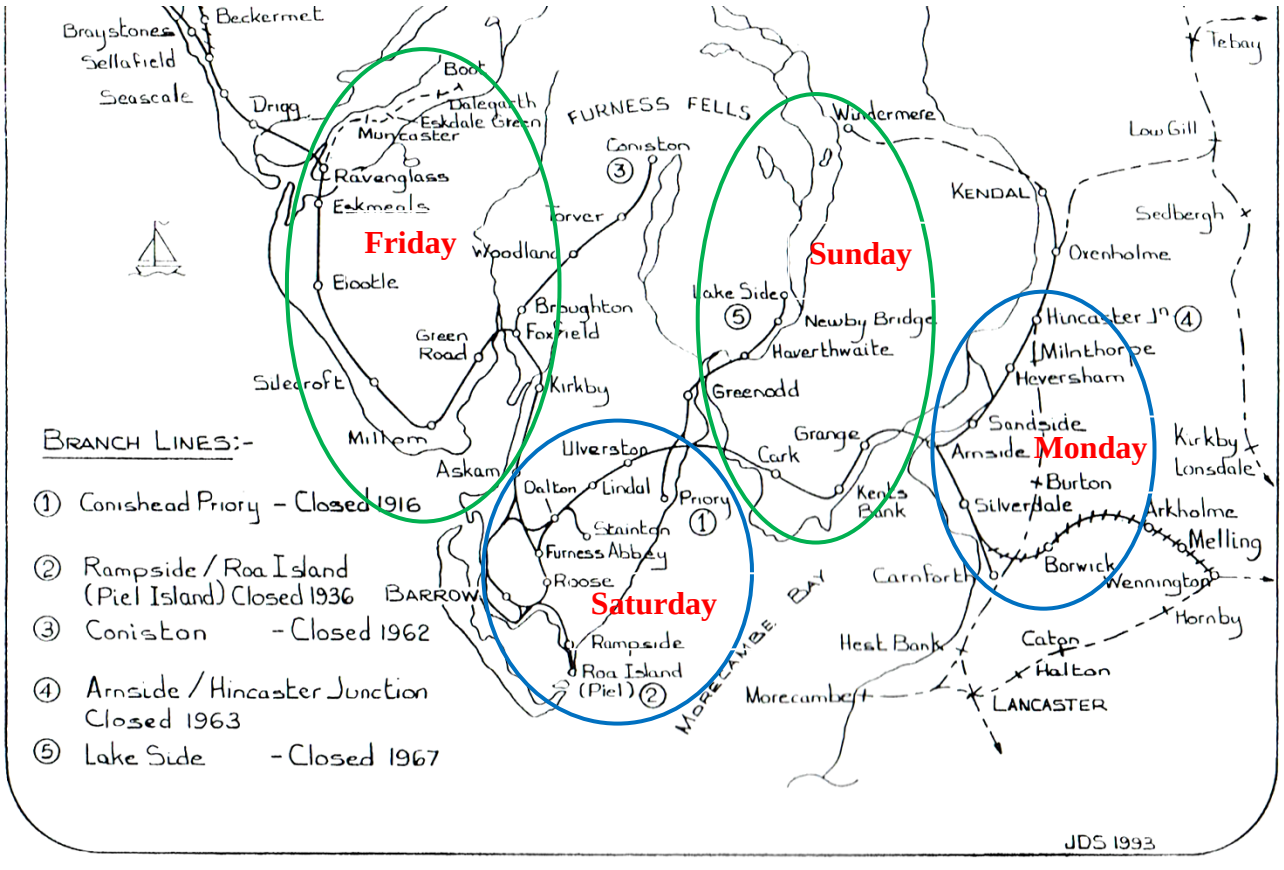
09.30 Special Interest Group meetings (members should contact their SIG coordinator(s))
11.00 AGM & Council Meeting in the Cavendish Room at Abbey House Hotel.
Lunch: Buffet at Abbey House Hotel (pre-booked)
12.15 Coaches depart for Ulverston (station & canal) and Roa Island. Return via Barrow.
19.30 Dinner (Great Hall, Abbey House Hotel)

Sunday 28th April: Coach, Rail & Steamer Tour: Haverthwaite, Lakeside, Bowness, Backbarrow & Lindale, Grange-over-Sands & Kents Bank Stations

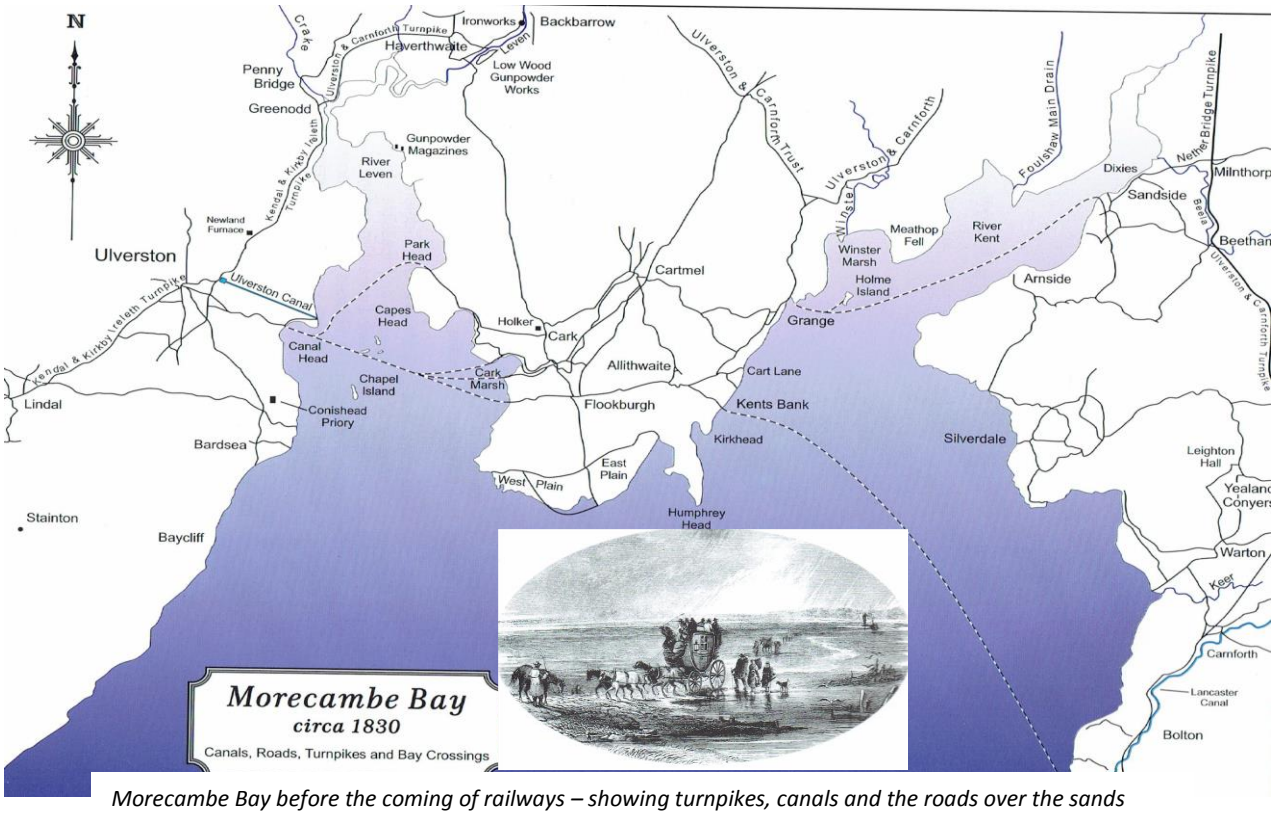
09.30 Coaches depart hotel for Haverthwaite
Lakeside & Haverthwaite Railway to Lakeside
Windermere Steamer Trip: Lakeside to Bowness
Backbarrow: Former Dolly Blue Factory and Ironworks
. Lunch at Crown Inn, High Newton
Grange-over-Sands & Kents Bank Stations
19.30 Dinner (Great Hall, Abbey House Hotel)

Monday 29th April: Coach Tour: Arnside Station, Kent Viaduct, Kendal Branch (Arnside to Hincaster), Lancaster Canal: Tewitfield Locks, Carnforth Station

09.30 Coaches depart hotel for Arnside
Arnside Station and Kent Viaduct
Former Kendal Branch: Arnside to Hincaster
Lancaster Canal: Tewitfield Locks
Lunch at Brief Encounter Refreshment Rooms, Carnforth Station & Heritage Centre
15:00 (onwards) Trains to all destinations for those not returning to Barrow
16.00 Coach returns to Barrow and Hotel. Dinner (Restaurant, Abbey House Hotel)



THE PRE-RAILWAY COMMUNICATIONS CHALLENGE



Morecambe Bay before the coming of railways – showing turnpikes, canals and the roads over the sands (from The Ulverstone and Lancaster Railway, Leslie R Gilpin (Cumbrian Railways Association, 2008)

Prior to the Norman conquest the area around Morecambe Bay was largely ignored by surrounding kingdoms. However the new rulers of England gradually consolidated their hold on the area. Monastic settlements were established in the area as part of bringing Norman culture to the whole of England. The monks of Furness Abbey and the Priories of Cartmel, Conishead and Lancaster took advantage of the iron ore to be found in Furness and became powerful framers and traders. Monks became the most powerful people in the area with Furness Abbey owning extensive sheep pastures and flocks across northern England, vying with those of Fountains abbey to be the greatest abbey in the north.

As well as shipping goods by sea, markets were established on the Furness peninsula, notably at Dalton with a smaller market at Ulverston. However, the peninsula remained isolated; travelling there was difficult, with the Oversands road being favoured by many. This route (from Lancaster) involved a crossing starting from Hest Bank while that from Yorkshire started near to Milnthorpe. The routes made terra ferma at Kents Bank (or Cart Lane) and Grange respectively. For travellers continuing to Furness Abbey, Dalton, Conishead Priory or Ulverston there were then routes across the Leven to a point near Canal Head and then along the edge of the sands to Conishead, Sandside or Bardsea. Overnight accommodation was available at Kents Bank and Flookburgh.

After the Dissolution in the 1530s, the focus of trade moved from Dalton to Ulverston and, with the Crown taking over monastic property, the Duchy of Lancaster became responsible for the provision of guides over the Kent and Leven sands. Gradually industries grew in the form of slate quarrying, the exploitation of haematite, cotton and cork mills, and papermaking amongst others and, later, the manufacture of gunpowder. These industries were served by small ports scattered around the river estuaries. Apart from Piel, all suffered from the tides and turnpike roads were built. Canals were also built, notably the 1.4 miles long Ulverston Canal linking the port of Ulverston to the coast at Hammerside Point, opened in Dec 1796. Up to 1849, when a breakwater was built, the constantly shifting sands of Morecambe Bay impacted access to the canal.

As the production of high quality iron ore in Furness grew in volume the appeal for shipping of a small hamlet called Barrow became apparent. However, as with all ports in the area, the problem of transportation between the points of production and shipment was ever apparent.

The transformation of Barrow (1841 population: 841) began with the arrival of the railway, at first isolated from all other railways in England, in 1846.

This section is largely based on part of Chapter 1, The Challenge of the Bay, of The Ulverstone and Lancaster Railway by Leslie R Gilpin which gives a much more detailed account with a broader perspective.

THE BARROW STORY – A BRIEF HISTORY

The name Barrow derives from the Norse "Barrai", meaning either "bare island" or "island off the headland". Barrai was listed in 1190 as one of the hamlets created by Furness Abbey and its original position was in the vicinity of what is now Schneider Square and the southern end of Dalton Road.

By the middle of the C18th Barrow consisted of 5 farm houses, 2 cottages and an inn. The population was about 50. The village grew slowly and by 1840 the number of buildings had increased to 24 and the population to about 150. The shelter of Walney Island offered a safe harbour at Barrow and from about the 1740s a small port developed to carry Furness iron ore to smelting works in Wales and the Midlands. By 1842 there were four jetties, built out into the channel and a Harbour master had been appointed.

Haematite iron ore had been mined in Furness, around Dalton and Lindal, for centuries but on a commercial scale only from about the 1770s. Demand grew rapidly with the pace of the Industrial Revolution: 11,000 tons were raised in 1800, 75,000 tons in 1840. The bottleneck was getting the ore to the port of Barrow.

The Furness Railway was a merger of two schemes – to take iron ore from Dalton and slate from Kirkby to Barrow. The interest of the landowners, the Dukes of Devonshire and Buccleuch, were crucial. The railway opened between the three towns in 1846. Under the leadership of Henry Ramsden it expanded and in 1857, with the opening of the Kent and Leven viaducts, the isolated Furness Railway was linked to national network

By 1854, nearly 360,000 tons of iron ore were being shipped through the port of Barrow. By this time the large haematite deposit at Askam was being exploited and Henry Schneider and Robert Hannay were planning blast furnaces at Hindpool. By 1861 these blast furnaces were operational and a rail link complete to the Durham coalfield. By 1866 the first blast furnaces at Millom had been opened. The "golden era", which lasted from 1866 to the end of the 1870s, had begun. The blast furnaces at Hindpool alone devoured almost 900,000 tons of haematite each year. Satellite industries grew, including those of boiler, wire and waggon manufacture and shipbuilding began in a modest way.

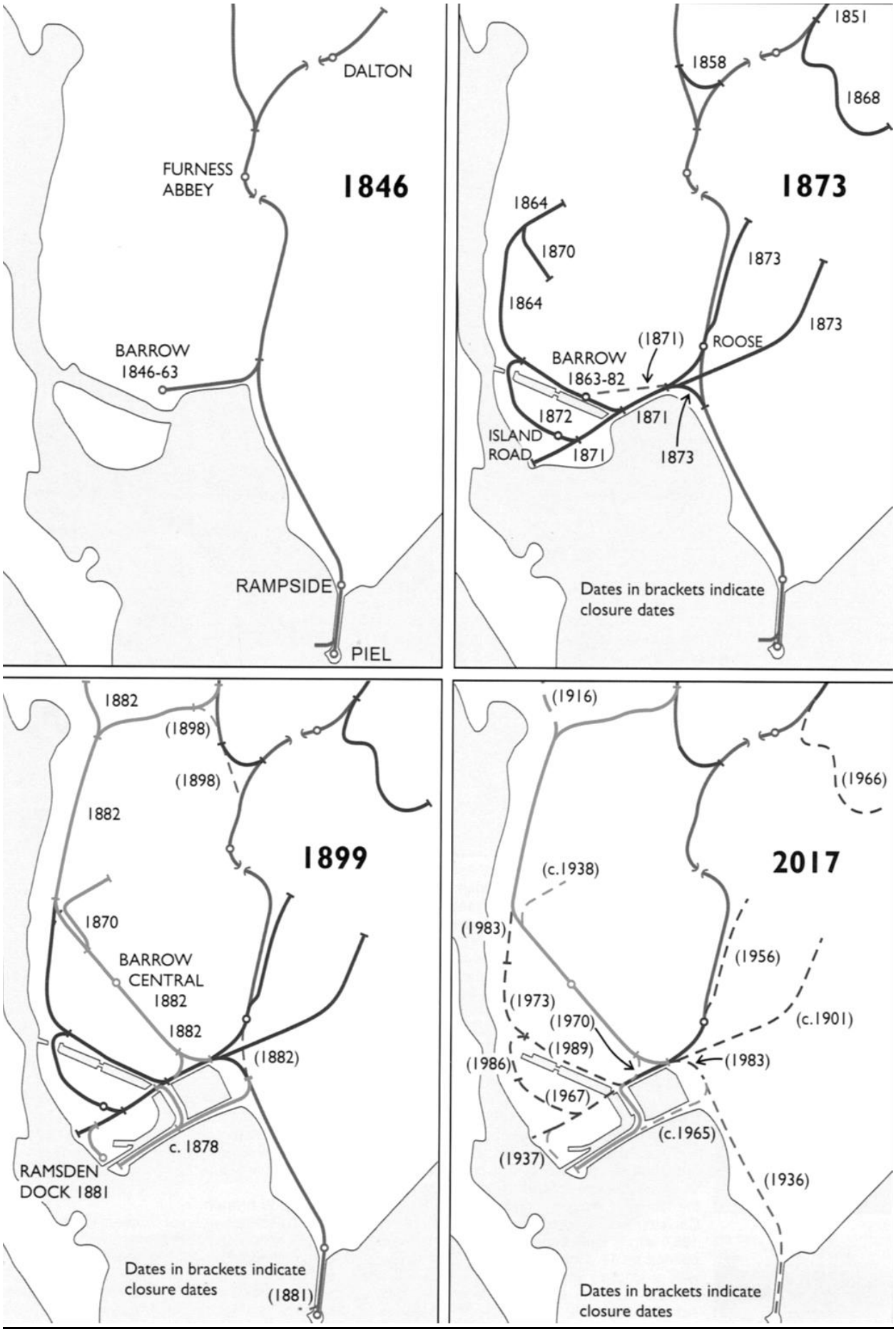
During the final quarter of the C19th, technical improvements in steelmaking meant that phosphoric acid iron ore could now be used, instead of haematite, in the Bessemer process and competition emerged from other parts of the UK and overseas. At the same time, Furness ore reserves were depleting and as the mines went deeper so they became more prone to flooding. The workforce at Hindpool declined from 3,500 in 1900 to 1,500 by 1911. At the same time the number of workers in the Vickers shipyard had increased to 10,500 – from 5,500 in 1896. Barrow changed from being a steel town to a shipbuilding town. The profits of the Furness Railway decreased and the company began to move from its traditional business of moving freight and into tourism, including rail and steamer trips in the Lake District. Meanwhile, Barrow was struggling to accommodate its expanding population fuelled by another wave of immigrant skilled workers – this as many of those formerly employed by the steelworks struggled with unemployment or emigrated to such places as America, Australia or South Africa.

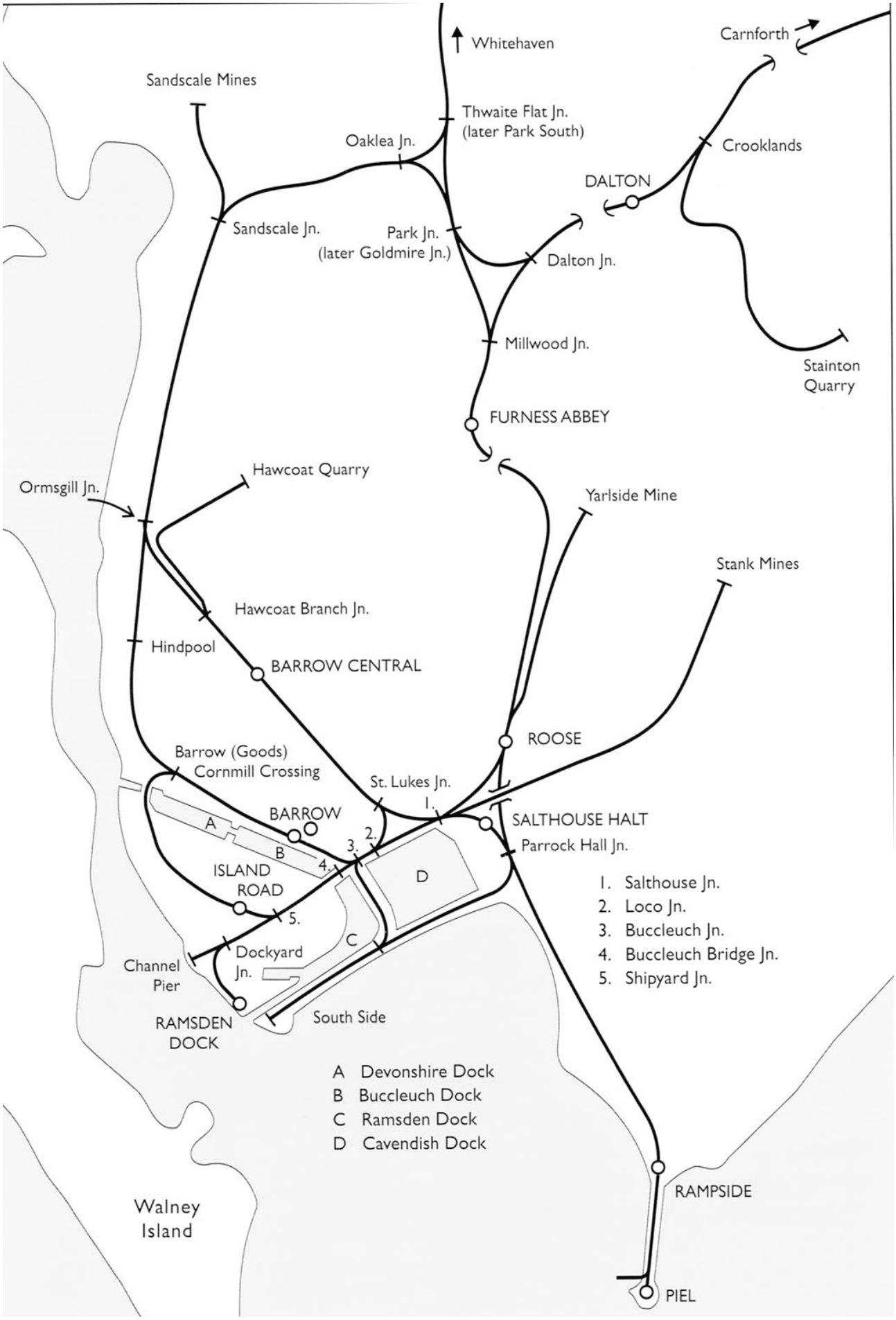
Whilst Barrow benefited economically from the Great War, so it suffered afterwards. A workforce of 22,300 at Vickers in 1919 dwindled to 3,150 by 1922. The company found themselves to be an armaments firm in a period of disarmament. Revival started during the 1920s with a Vickers broadening its output to building liners (as well as submarines and a cruiser) and accepting contracts for boilers, pipeworks and locomotives. Nevertheless it was a fragile recovery that was halted by the depression of the 1930s. For a second time, war was the cause of a recovery. Fears that this recovery would lead to a repetition of what happened to the shipyard after the Great War proved unfounded as a successful period of building liners and tankers began, along with experimental work on submarines. The ironworks closed in 1963 and the steelworks finally ceased production in 1984. The "new companies that were attracted to Barrow in the 1940s are no also longer there. Submarine building is the sole survivor of these industrial activities; and history will have to decide on the wisdom of the decision to "go nuclear".

Arguably, despite being moved from Lancashire to reinstate its historical ties with Cumberland and Westmorland, Barrow is again isolated. Outdated road connections are (slowly) improving, but rail remains slow and the subject of much criticism.

This section is based on Bryn Trescatheric's excellent illustrated, 112 page 'The Barrow Story' which is available in the Barrow Dock Museum.

The Development of Railways in Furness





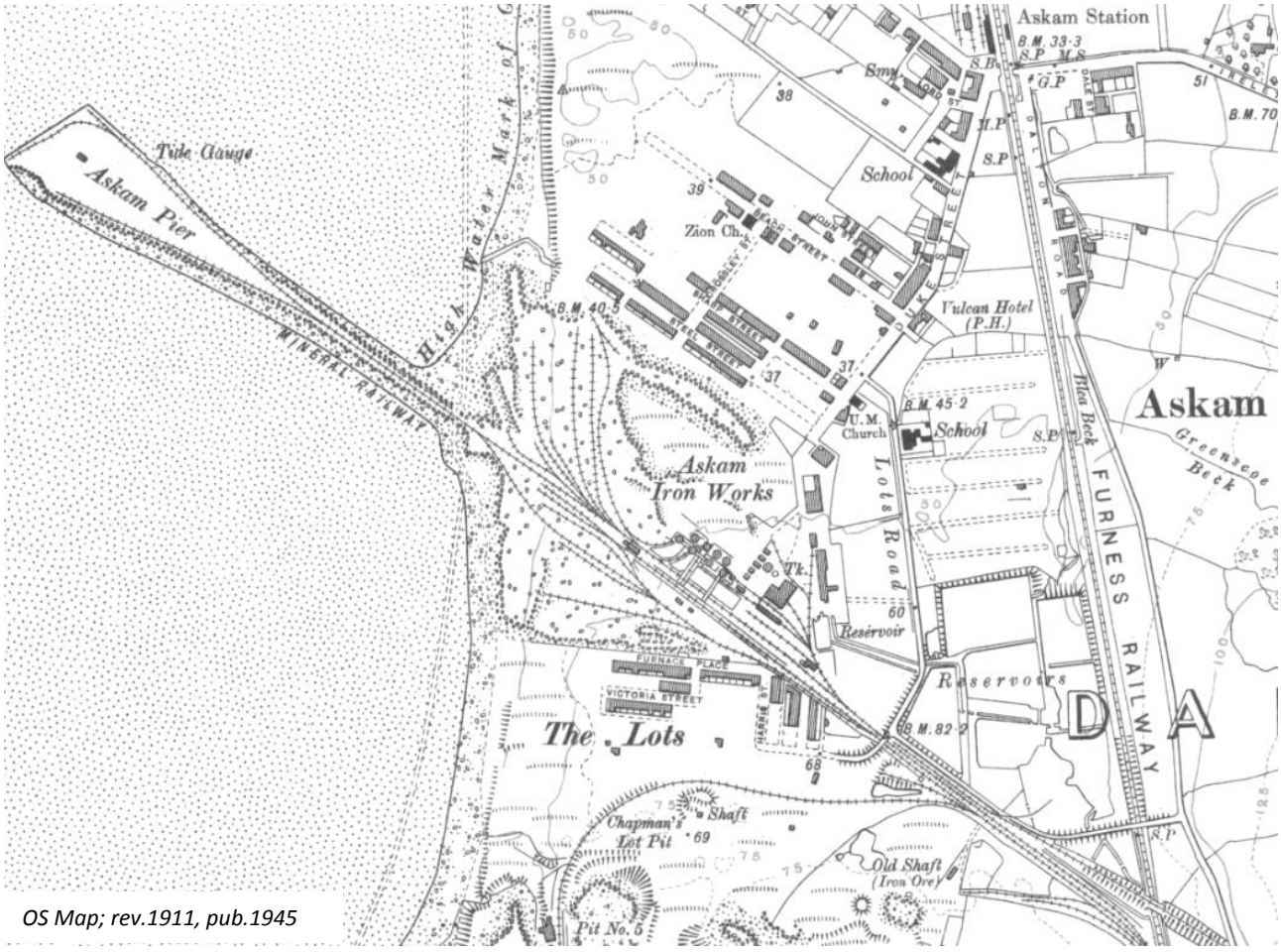
Barrow: Maximum Development. Adapted from: An Introduction to Cumbrian Railways, David Joy (Cumbrian Railways Association, 2017)

FRIDAY 26th APRIL – COACH & RAIL TOUR: BARROW TO RAVENGLASS

Today we travel north from Barrow, first following the original Furness Railway line of 1846 to Kirkby, the 1850 FR line to Foxfield, and then the 1850-opened section of the Whitehaven & Furness Junction Railway to Ravenglass. At Ravenglass we will take the return journey from Ravenglass to Dalegarth on the 15-inch gauge Ravenglass & Eskdale Railway.

The route passes through Askam, Kirkby, Foxfield and Millom. Those sitting on the left side of the coach on the outward journey will have views that include Foxfield station & signal box and the Duddon estuary with its viaduct; whilst those on the right will be looking towards the hills of southern Lakeland. The converse will apply on the return journey. We will be visiting Millom and Askam during the return journey.

Askam: Railway Station, Iron Works & Pier



OS Map; rev.1911, pub.1945

Askam village was developed following the discovery of iron ore in the area in 1850 and the consequent opening of Askam Ironworks in 1867. Askam station was opened in April of the following year. The line to the iron works left the main line south of the station. The station building was designed by Paley & Austin and dates from 1877. The signal box opened in October 1890. The goods yard which dates from 1891 was demolished in the 1970s and is now the site of industrial units. The level crossing gates have been replaced with lifting barriers.

The iron ore deposits turned out to be the second largest in the country, with over 7 million tons of ore being extracted. By 1896, 547 men were employed in the pits in the village and in nearby Roanhead, 347 of them underground. Several hundred others worked in local mines at Mouzell (between Ireleth and Dalton-in-Furness), Roanhead and Dalton. Some were owned by the Kennedy Brothers Ltd. of Ulverston, Barrow Haematite Steel Company and the Millom and Askam Iron Company. The latter built four blast furnaces in the village to smelt the iron ore being brought by rail from mines all over the peninsula.

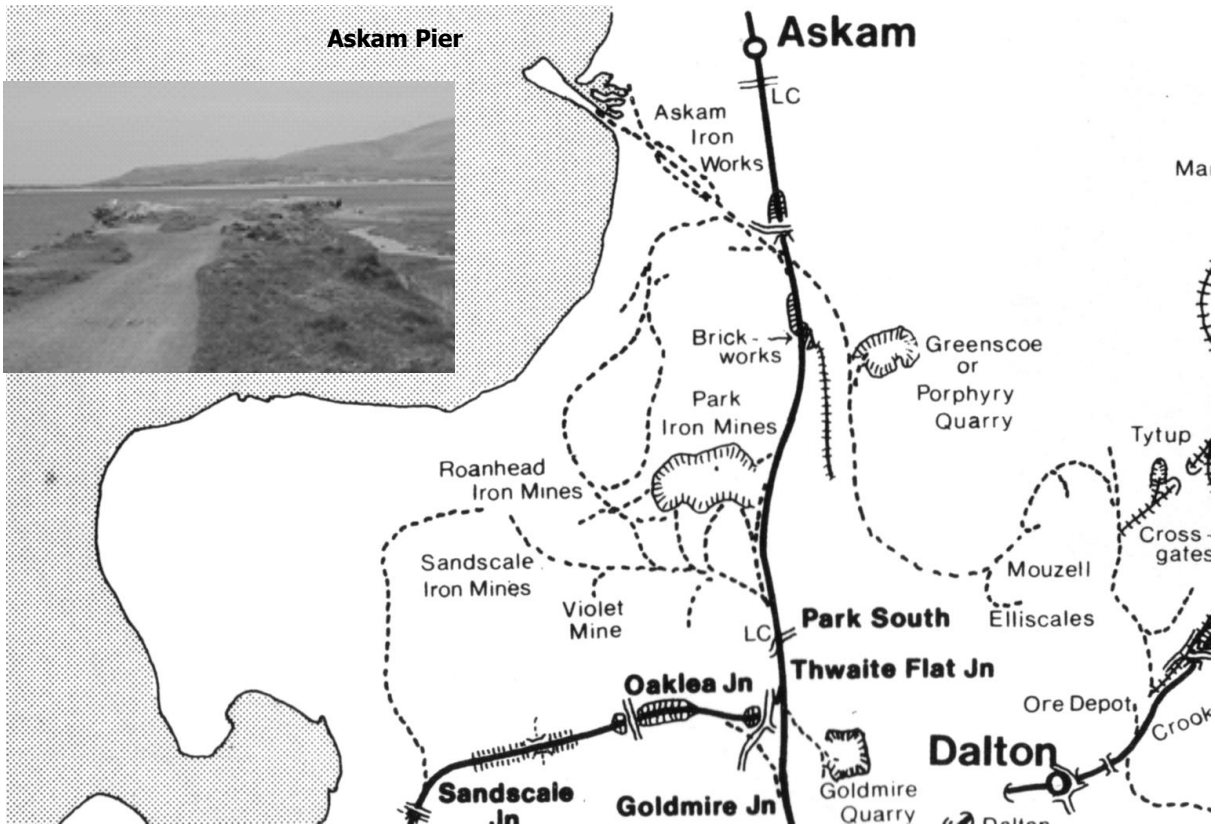
The village continued to grow with terraced houses and allotments erected for the flood of immigrant labour needed to work the mines. They came from all parts of the British Isles, with a large proportion coming from existing mining areas in Cornwall and Ireland. The Cornish in particular tended to bring their families and settle,

while the Irish often moved on to wherever there was work. Others came from areas where Askam's mine owners had other concerns, such as Scotland and Wales.

The iron works closed in the 1930s and most of the industrial buildings were demolished in 1933: the site of the ironworks is now a housing estate. The main road to and through the estate follows the alignment of the railway.

Remnants of the steel industry remain as evidenced by a pier, consisting of slag from the works, which juts out into the bay toward Millom. Also, numerous streets are named after the industry and its owners. For example, 'Steel Street' is so named because of the steel industry; 'Sharp Street' is named after Joseph Sharp, one of the earliest people involved in Askam's steel industry; and 'Crossley Street' after William Crossley, an early investor. That the pier was built from slag from the iron works is evident and is all that remains of the iron works other than the slag banks around the village that are now important wildlife sites. Askam has grown with commuter homes, exploiting the views over the Duddon Estuary and to the Lake District

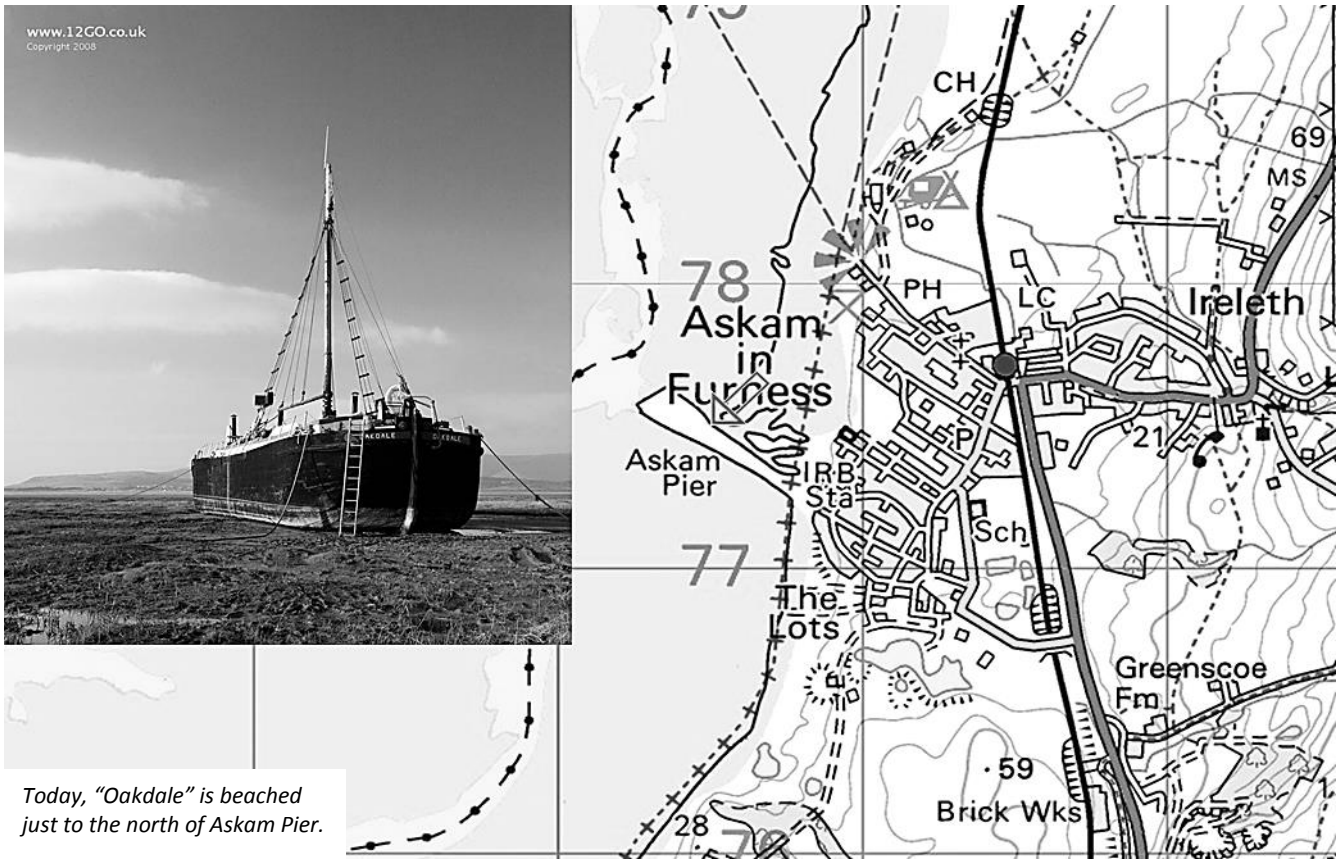
Askam Station (www.trainboard.com)



The Mersey Flat "Oakdale"

The Duke of Bridgewater started building his innovatory canal from his mines in Worsley to the market at Manchester in the 1760s. By then, various shapes and sizes of sailing flats were already at work in the area, on the Mersey and Irwell Navigations, River Weaver, River Dee and Sankey Brook Canal. The Duke therefore designed his canal extension from Manchester to Runcorn to accommodate these local boats. His flight of ten locks at Runcorn effectively set the gauge for the area's later interconnecting waterways - the Rochdale Canal, the Chester Canal and, much later, the lowest Liverpool section of the Leeds and Liverpool Canal.

Mersey Flats were originally carvel built, round-bilged, round-sterned sailing barges, with a single mast rigged fore and aft and a gaff mainsail and large jib to the stem head. Masts could be lowered or lifted out for up-river work. A few bigger ones, the 'Jigger Flats', were fitted with a mizzen mast and were able to sail out to sea as small coasters, to Wales and the Furness Peninsular.



Today, "Oakdale" is beached just to the north of Askam Pier.

Canal flats were built with the same general hull characteristics, but were unrigged, designed to be pulled by horses or tugs, but still strong and seaworthy enough to navigate the Mersey estuary from Runcorn to the docks at Liverpool. In the 1890's the new docks of the Manchester Ship Canal offered more work for Mersey flats, lightering goods out of the ships into the local canals.

Some classic wooden flats were broken up, but many were sunk out of the way in side-basins at Runcorn and Chester and on the River Weaver. Only two now remain, the bluff-bowed Oakdale, built in 1951-52, which now sits on the Cumbrian coast and the more graceful canal flat Mossdale, which is at the National Boat Museum in Ellesmere Port. Neither was ever worked under sail.

The Oakdale was built by Richard Abel & Sons in Runcorn, a boat builder and general carrier that existed for almost 100 years, before going out of business in the 1960s.

Abel's were based at the Castlerock Yard beside the Runcorn Railway Bridge as well at another yard in Weston Point and at several depots from Manchester to Liverpool. They employed many local people in their vessels and shoreside departments and were well known and respected business people. They were renowned for their shipbuilding skills and built their vessels, mainly Mersey Flats (the local type of vessel built across the Northwest of England and North Wales at one time), using the same tried and trusted methods that they had used since the 1800s. Eventually, they built the later Flats as composites - steel frames with wooden hulls, providing

strength and longevity. The Oakdale was the penultimate vessel built by Abel's and was the penultimate Mersey Flat ever built. The last Flat to be built, Ruth Bate, has been scrapped.

Abel's Runcorn boatyard taken from the footpath along the side of the Runcorn-Widnes railway bridge. The yard must have closed by this time as work has started on the foundations of the first road bridge (1956)

Abel's Runcorn boatyard taken from the footpath along the side of the Runcorn-Widnes railway bridge. The approach to the Transporter Bridge and its waiting room in the middle left of the picture (late 1950s)

The Mossdale, a smaller vessel, has been the recipient of a National Lottery Fund grant to help preserve her. She is a Chester-built Flat that was later bought, and rebuilt, by Abel's of Runcorn. She is smaller because she was one of the 'inside' Flats designed for work on the Bridgewater Canal and similar waterways. Oakdale was a sea-going vessel designed to enter the Leeds-Liverpool Canal but also to sail across the Irish Sea. Perhaps she sailed to the Duddon estuary to transport local goods, such as iron and copper ore, slate and timber to Merseyside. However, there were many shallow-draught river vessels built in Runcorn, Widnes, Frodsham, and other local shipbuilding centres that actually put to sea in the quest for trade.

According to Michael Stammers, in his "Building Flats at Runcorn" from Waterways Journal Vol. 5, the Oakdale and the Ruth Bate were built 'to the same design which is considerably different in shape to the traditional form' being for example, 'almost as square in the bow as the Humber Keels'. They were designed by Mr. Albert Andrews, the manager of the yard, and he 'incorporated a great deal of steel into the framing'. There were 3 steel keelsons, instead of the usual one on the centreline. This reduced the amount of the hold taken up by the large timber pieces traditionally used. Straight side frames were rolled from steel and the framing timbers at the bow and stern were 'fashioned in the traditional way' (i.e. iron frames running the length of the parallel body and wooden frames from the forward and aft bulkheads). Additionally, the hat coamings were also of steel instead of the traditional timber. They had a greenheart bottom, sides of oak and decks of Oregon pine. All of this gave the vessel great strength.

Oakdale was in service with Abel's until 1963 when the company ceased trading. She was sold to Rea's, with whom she remained until 1966 and for some time was used for coal storage. Although several of the Flats were bought by private investors, Oakdale remained unwanted because she was not of an all-steel construction.

After a number of owners, David Keenan bought her in 1975 when she was lying in deep mud at Burscough and in need of much care and attention. He took her to Brunswick Dock in Liverpool and refitted her at the Bootle Barge Company using parts salvaged from the remaining barge companies that still existed locally. He sailed her as Master for many years in the coastal trade before laying her up some years ago to continue repair work on her whilst living on-board with his pet dog and cats. He had always wanted to own one of these vessels since working on them straight from school, so the Oakdale and Dave are lucky to have each other.

Oakdale spent some years berthed near the Merseyside Maritime Museum in Liverpool before being moved for further repairs. She spent time beached at Lytham St. Annes and later Askam-in-Furness. The latter is where Dave now lives on-board and continues his efforts to preserve this unique vessel.

Some Statistics

- Launched on 15 September 1952, after an 18 month build. She is a 63 ton Mersey Flat, built in the style and tradition of Abel's vessels since the 1850's, but with steel frames under her wooden hull.
- Lister HA3 diesel engine (fitted 1957)
- Being over 60' in length, she has always been required to have full sized navigation lights.
- 52 tons displacement, cargo capacity 120 tons
- Registered Merchantman, official number 183820, registered at Liverpool. (Dave remembers seeing the full page entry about 30 years ago in the large leather bound book, when it was still held in the Old Customs House in Liverpool. Today all such information is digitally recorded.)
- Listed on the National Historic Ships Register
- Oakdale appears to be the second vessel of that name to serve Abel's. The first was a 46 ton barge built by William Bate of Runcorn in 1888 and later sold to Abel's. She was registered in Liverpool as ON143721 and removed from the register in October 1922

Her current owner (Dave) has converted her hold and made other modifications -

- Fitted a mast. This came from a Dutch vessel that was dismantled at Eastham prior to sailing up the Ship Canal to Manchester (this was the norm for tall ships as they couldn't fit under the bridges on the Ship Canal). The mast had lain beside the lock keeper's office (possibly at Walton Lock), but when the Dutchman failed to return for it, it was given to Dave.
- Added a tabernacle mast from a trawler
- Replaced the anchor with one from a barge belonging to a local company, Bates.
- Replaced the windlass with one from a yacht

Oakdale in 2018 (G E Lancaster)

Kirkby: Burlington Quarries and Inclines

Kirkby was the northern extremity of the 1846 Furness Railway line where it served the Burlington Quarries.

The following is a description of the quarries and their railways based on a section of a forthcoming Industrial Railway Society handbook covering Furness, Westmorland and the Isle of Man. The numbers (in parentheses) refer to numbers in the map (next page) which show the approximate locations of sites referred to in the text.

The group of slate quarries known collectively as 'Burlington' claim to be the oldest and most extensive in England. They were established in the early 1700s, and for many years the slates were carted to a storage yard at near the coast at Marsh Side (1). In the pre-railway era the bulk of the output was transported by sea, and it was observed in 1819 that there were enough boats loading slate for the place to be described as "a bustle". Fisher's Quarry (2) had an internal iron railway by about 1809, and other quarries in the group possessed internal railways by the 1840s.

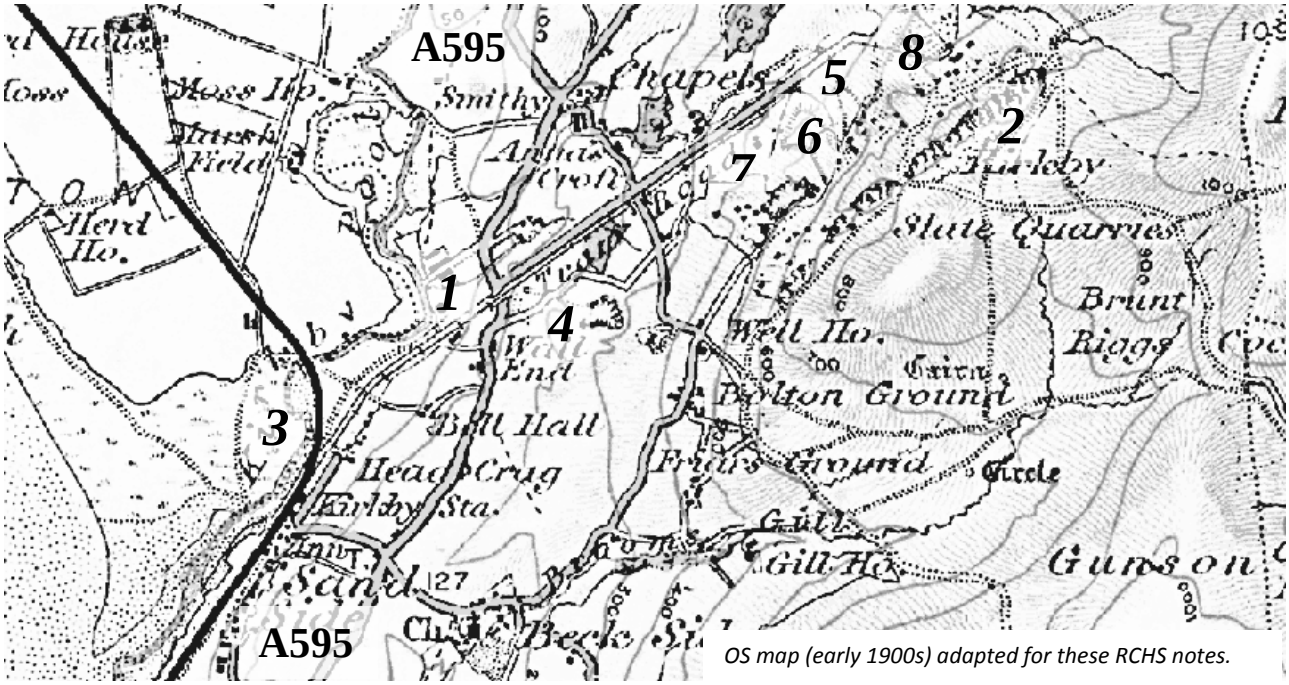
In 1838 a railway about 600 yards long was built to connect the slate yard at Marsh Side with a shipping point at Kirkby Pool, in the deeper water of the Duddon estuary (3). There is evidence that in the 1838-47 period there was also a short incline railway running down from Longlands Quarry (2), the lowest of the Burlington group, to the nearby road if not to the slate yard. The gauge of these early railways is uncertain, and it is likely that the recognised Burlington gauge of 3ft 2¼in (later 3ft 2in) was not adopted until after the consolidation of the quarries in the 1840s.

The separate quarries came under common ownership and management in 1842-3. Standard gauge access at Marsh Side (1) was provided by the opening of the Furness Railway in August 1846, and the site of the early railway to Kirkby Pool was covered over by the final quarter-mile of the FR. The Burlington quarries provided a major source of traffic for the FR at this time. A mile-long self-acting incline, later known as 'The Long Incline', was built during 1846 to connect the quarries with the FR. It now appears that this incline did not, as was once believed, pre-date the 1846 opening of the FR. The incline top was 460ft above sea level (5), a point known as Wiseman's House, and the bottom was at the former storage yard (1), now known as Incline Foot. Until the Broughton extension of the FR was opened in 1848, the transhipment quay at Incline Foot formed the FR's northern terminus.

During the construction of the Kirkby to Broughton extension of the FR (1847-8) and the Foxfield to Silecroft line of the W&FJR (1849-50), contractors Fell & Jopling were faced with a lack of earth for the construction of embankments. They instead used slate waste from Burlington quarries, and for the purpose of collecting the waste a siding was laid to the slate tips immediately north of Incline Foot.
The internal railway continued to expand during the second half of the nineteenth century, with further internal inclines and water-balance lifts. The permanent parts of the system were heavily engineered, with substantial stone retaining walls and track laid with chaired T-section rail. Temporary sections within the quarries used rail of various light Vignoles section and occasionally bridge rail. By 1909 the Burlington railway was at its maximum extent, and at this period the quarries were the largest producer of roofing slates in England, Scotland and Ireland.

Reflecting the optimism which followed the opening of the first section of the Furness Railway, in 1846 the Earl of Burlington stated his intention of introducing steam locomotives on the internal quarry railway. Sadly this was never done, and operation remained entirely by horse, manpower and gravity until the arrival of the battery locomotive a century later. There were three locomotive sheds, at Low Lord's level (6), Lady Evelyn (7) and Smithy Hill (8). All locomotives, one battery electric and three diesel, were supplied for a gauge of 3ft 2in, but for many years prior to their introduction the Burlington gauge was recorded as 3ft 2¼in. While the origin of this gauge remains unexplained, it has been suggested that as on the contemporary Butts Tramway at Dalton it was influenced by a metrication movement in the 1840s, with the difference that the Burlington gauge was measured between rail centres.

The use of the internal railway contracted after World War 2. The Long Incline was last used in 1952 and was dismantled in 1954, although the standard gauge siding from Kirkby Station remained, out of use, until it was dismantled in 1963. Locomotive operation in the quarries ceased in 1971, but hand-working of rubbish wagons continued at Smithy Hill (8) until 1973. Most of the remaining track was lifted by the 1990s. The quarries are still operating, but with the exception of the Long Incline, little of the former railway infrastructure remains.



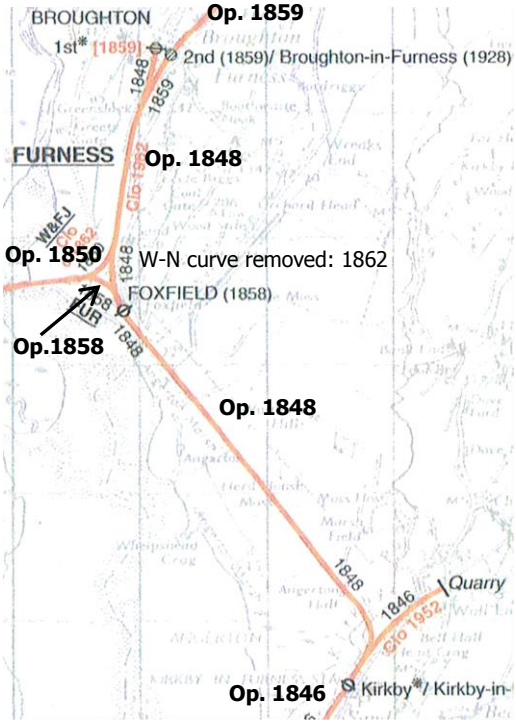
OS map (early 1900s) adapted for these RCHS notes.


Blasting in Burlington Quarries, 2013 (https://becausetheyrethere.com)

Foxfield

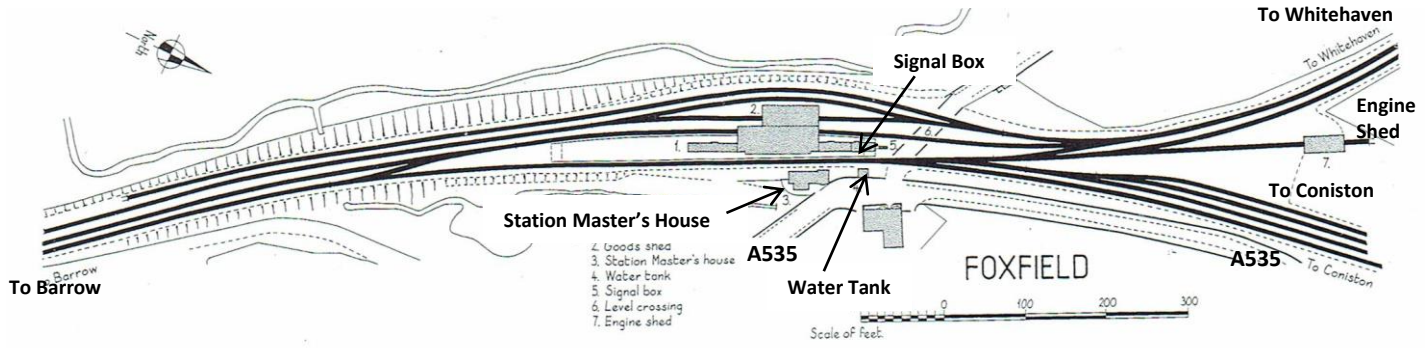
The FR main line was extended from Kirkby to Broughton in 1848. The W&FJR, coming south, formed a trailing connection with the FR line north of Foxfield in 1850. Through trains between Barrow and Whitehaven had to reverse in Broughton until 1858 when a curve to the SE of the viaduct was opened. The west to north curve was closed some four years later, in 1862.

Foxfield Signal Box (geograph.org.uk/photo/838255



Foxfield station was opened at the junction, with the new curve, in 1858. The station was designed by the Lancaster architects Paley and Austin and built by the Barrow contractor William Ormandy. The signal box shown here dates from 1879 when an enlarged station was opened. The island platform was widened to 29 feet (9 m), and a new canopy for passengers provided. The signal box was extended in 1909. It had a very short blockshelf from the early box. FR practice was to have it the full length of the frame and this is probably the only exception, it being the length of the old frame.

Though the platform buildings have mostly been demolished, the 1909 signal box, with its attached waiting shelter, is still in use. The old water tower and the station master's house facing the southbound line (to Barrow) are extant.

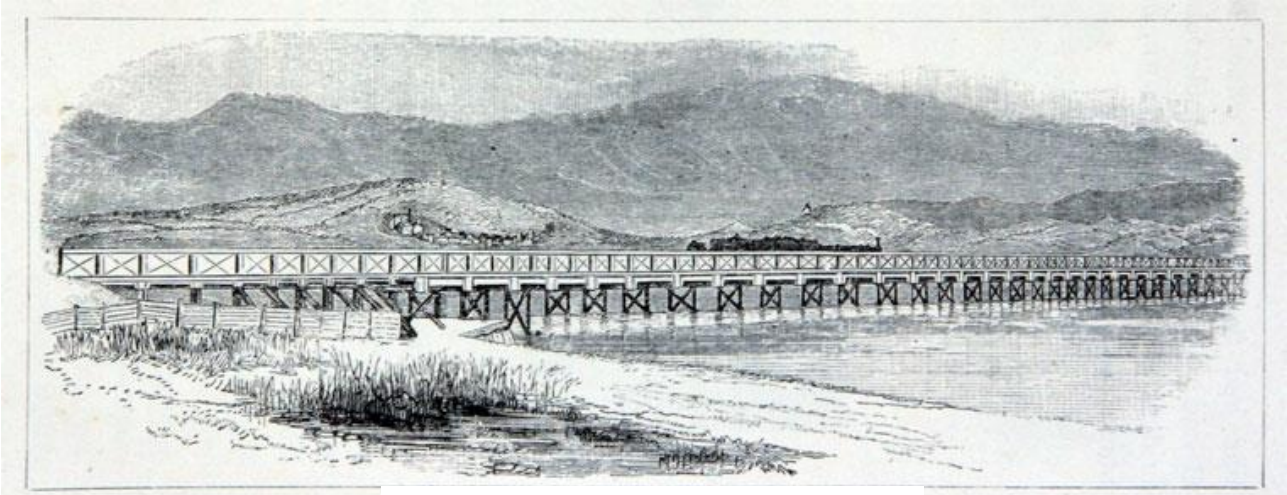


Crossing the Duddon

The first of the three major river crossings in Furness and Cartmel was across the River Duddon for the 1850 W&FJR line, near to its junction with the 1848 FR line and a little to the north of Foxfield station.

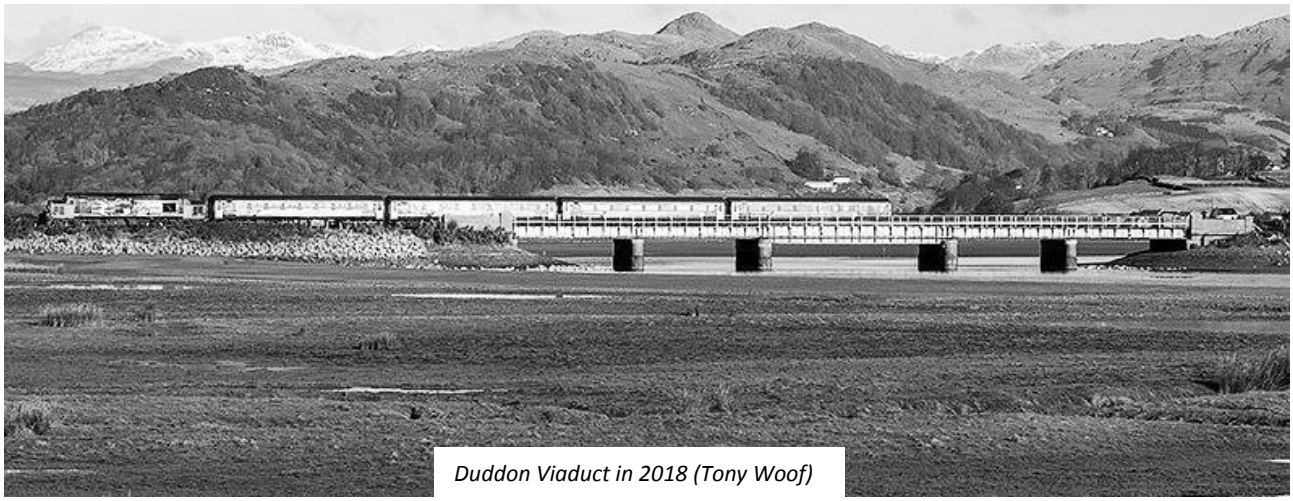
The W&FJR was incorporated in 1845, with a capital of £350,000, to build a railway line following the coast south from Whitehaven to Holborn Hill, where after turning north, it would cross the Duddon to join the FR at a point near Dunnerholme (north of Askam). If built, and with the company's promoted Lancashire Extension Railway between Dalton and Ulverston connecting with the projected branch of the "little" NW Railway near Carnforth, the W&FJR would have been part of a route from west Cumberland to the West Riding using only 4 miles of FR track. However, in the slump that followed the collapse of "Railway Mania", the company was advised to abandon the 1¾ mile crossing and to cross the Duddon at a point further north.

The Duddon viaduct of 1850 was built as a 592yd trestle of 50 spans. Even with the removal of the need for a reversal at Broughton some 8 years later, abandoning the route originally planned left a legacy of inconvenience.



Duddon Viaduct in 1850 (Illustrated London News)

Spile Bridge (as the 1850 viaduct was known) was rebuilt in 1871.

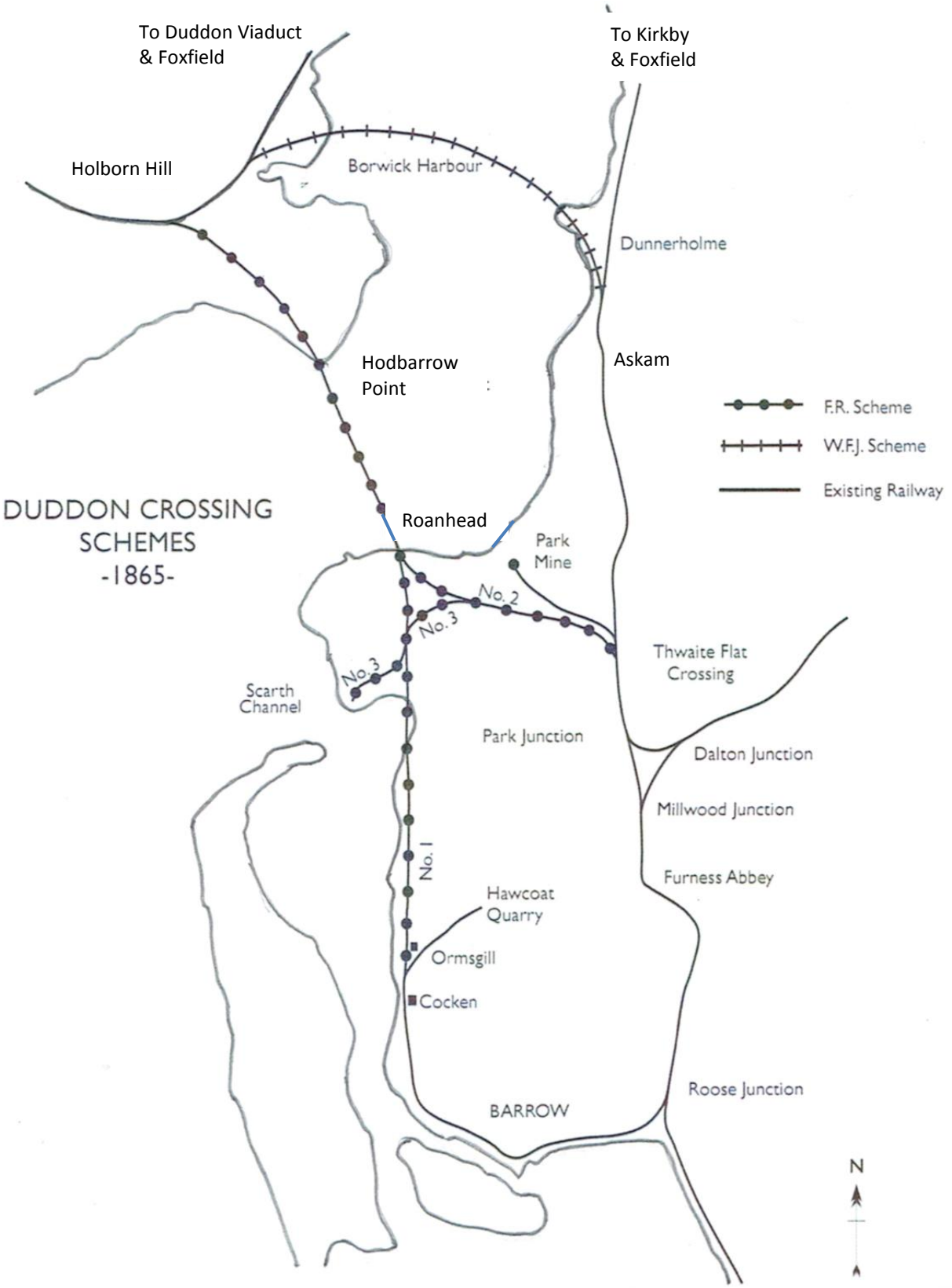


Duddon Viaduct in 2018 (Tony Woof)

By 1865, there were two other (competing) proposals for crossing the Duddon, both to the south of the 1850 viaduct. One proposal was by the FR and the other by the W&FJR. The FR plan was to build a direct line from Barrow, via what is now Sandscale Haws Nature Reserve (shown on the map below as Roanhead) and then across the Duddon, to Hodbarrow.

As it impacted access to the harbour at Borwick Rails, the FR scheme was rejected. The W&FJR proposal (the earlier scheme abandoned in 1850) also included extending its line to Lindal. An implication of this was the further isolation of Barrow at a time when the FR was embarking on a scheme to enlarge the docks there. The FR then felt

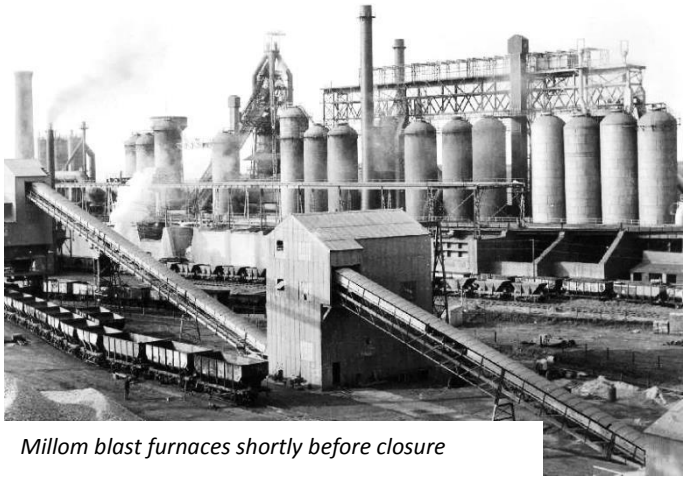
that, in order to prevent the W&FJR scheme being implemented, it had little choice but to acquire the company, which it did with effect from 1865. Although it had considered doing this in the past, at this point other plans had to be placed on hold in order to finance the acquisition. The crossing over the Duddon today is on the original 1850 alignment.



Millom

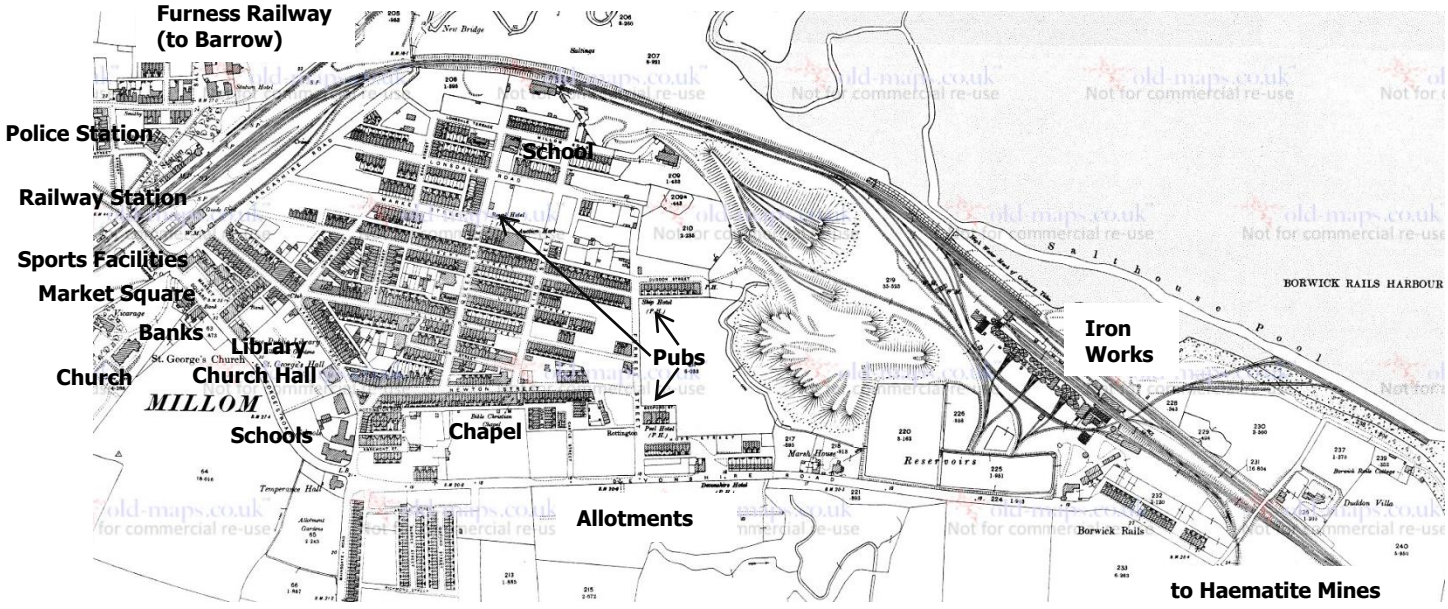
The W&FJR opened a station, called Holborn Hill, at the same time as the railway (1850) to serve a hamlet of the same name on the northwest side of the line near the mouth of the River Duddon. Through the next decade, Holborn Hill remained a hamlet with a railway station, an inn and a tile and brickworks. However, at the time the railway was being built, what proved to be the world's largest known haematite deposit had been discovered at nearby Hodbarrow. The first shafts were sunk in the 1850s and by 1881 there were seven pits operated by the Hodbarrow Mining Company. The Millom and Askam Iron Company built Millom Ironworks with the first blast furnaces being completed in 1866. Holborn Hill station was renamed Millom in 1867, and in the same year a 1¾ mile branch was opened to serve the ironworks and the haematite mines. The station took its new name from what was seen as a model town growing up by the ironworks. By 1876 the population had increased to nearly 4,000 and, by the late 1890s a small town had grown with terraced streets on either side of the railway, a public library, police station, banks, schools, market square and allotments in an area that, 35 years earlier, had been fields and marshland.

Today the industry which, together with its infrastructure, once dominated the town has disappeared. The site of the former iron works, which closed in 1968, and the Hodbarrow Outer Barrier (seawall) which took five years to build are now an RSPB nature reserve. In 1967 the population of Millom was 10,997; by 1971 it had fallen to 7,101. Forty years later, in 2011, the population was 7,829.

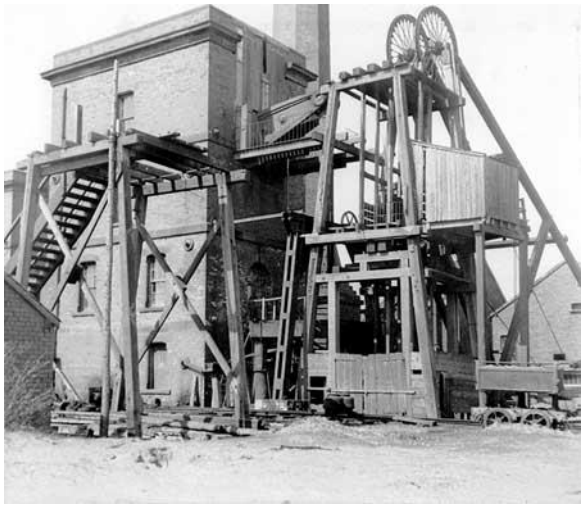


Millom blast furnaces shortly before closure

'The Scutcher' stopped the iron ore tubs with an iron bar and his own strength. Statue in Millom market square.



OS Map (1899) showing the unfinished 'new town' area of Millom. Station is to left and iron works to right of map. Haematite mines (out of picture to the south) were connected to the iron works by rail (bottom right). The hamlet of Holborn Hill is out of picture (top left).
(Source for background map: www.oldmaps.co.uk)



This ironstone (haematite) mine opened in the mid 1800s and ceased operating in 1968. A set of sea walls was erected between 1888 and 1905 to protect the workings.

Left: The headgear for the main shaft and the small wagons that took away the ore can be seen. The system employed here used Cornish beam engines.

(*Historic England*: *BB98/09942)*

Prefabricated by Cochrane and Co., a lighthouse was built and operated privately from 1905, by the Hodbarrow Mining Company to guide ships serving its iron mines. The lighthouse was placed on an artificial berm built to expand the mining area. It replaced an earlier lighthouse (1866) after the building of the sea wall. The abandoned mines behind the berm have been flooded and are now a bird sanctuary. The lighthouse was restored in 2003 by the Haverigg Lighthouse Committee with a grant of £20,000 from the Heritage Lottery Fund. It had been inactive since 1949.

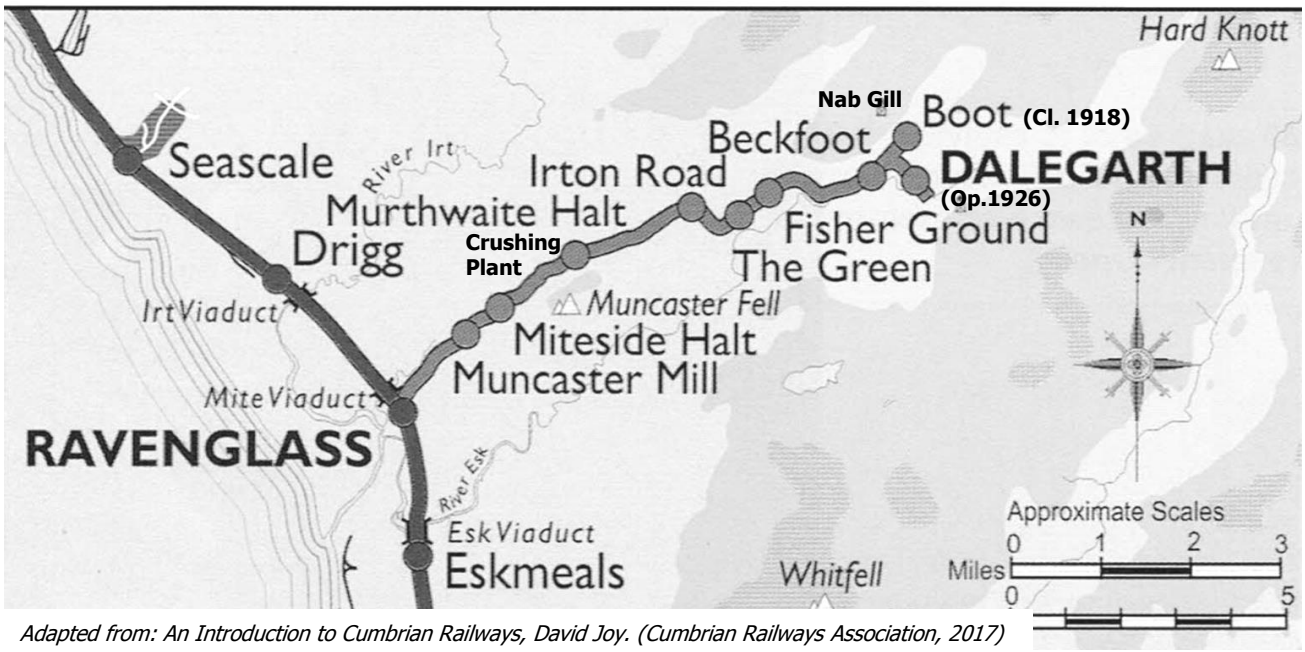
Millom station (www.users.globalnet.co.uk)

Millom (opened as Holborn Hill 1850; renamed Millom 1867) was a busy station during the time the ironworks and the Hodbarrow haematite mines were active. There were extensive sidings, obscured in the picture above behind the train (from Barrow) and the station building on the down platform. The platform awning on the down platform was taken down and re-erected at the R&ER's narrow gauge at Ravenglass in 1972. The buildings on the up platform (towards Barrow) now house a small museum, the Millom Discovery Centre.

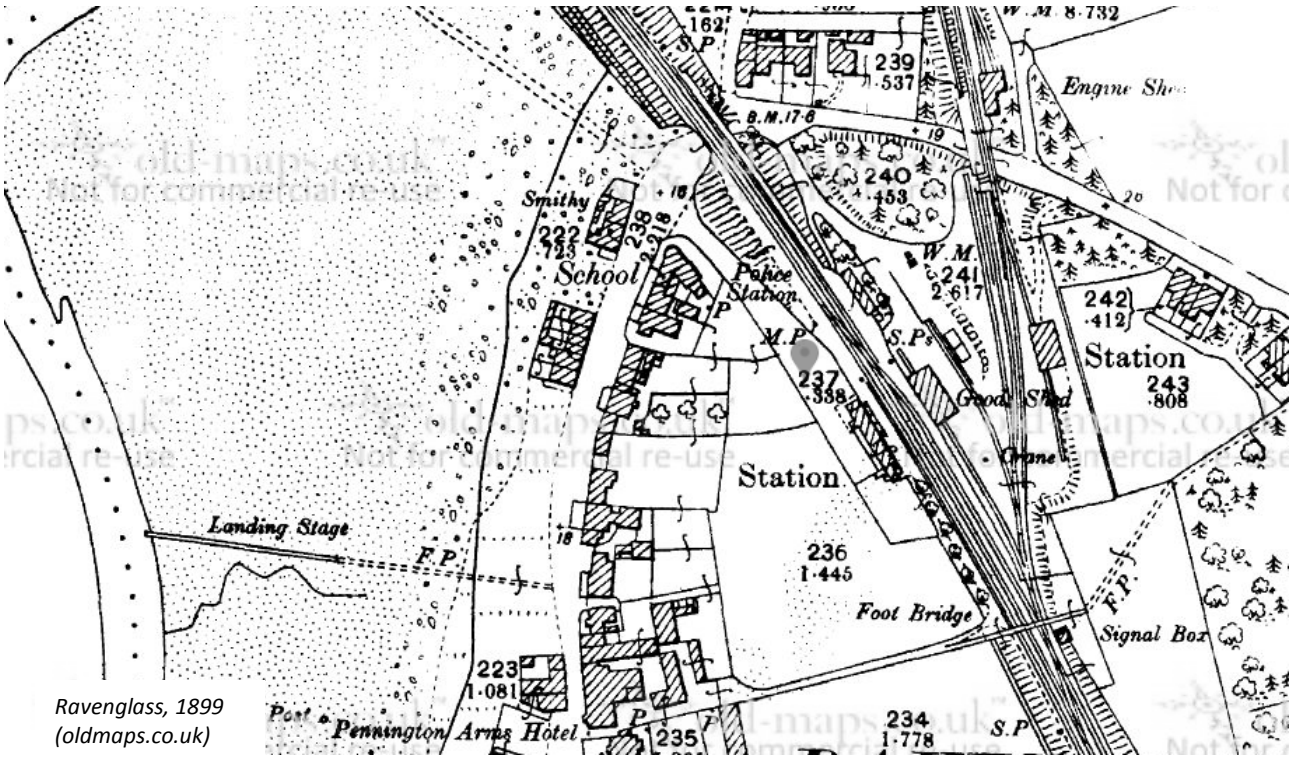
Ravenglass & Eskdale Railway

By the 1880s the anti-railway lobby had become effective to the point that proposals to build railways into the heart of the Lake District were crushed. At that time only one line crossed what became the National Park: the Cockermouth, Keswick & Penrith Railway. Four lines approached from the south, none of which formed part of through routes. These were the Kendal & Windermere line of 1846/47 (Oxenholme-Windermere), the Coniston line of 1859, the FR line of 1869 connecting Ulverston with Lakeside, and the R&E between Ravenglass and Boot (just 5 miles from Scafell Pike) which opened in May 1875. Apart from its short re-routing to a new terminus at Dalegarth (1926), to avoid the 1 in 37 climb between Beckfoot and Boot, the R&E line of 1875 was the last railway to be built into the Lake District.

As with other railways in the area, it was the discovery of haematite ore that led to the proposal to build a 3ft gauge railway between Ravenglass (with exchange facilities with the FR) and Boot where ore from the mines in Nab Gill was transferred between the wagons of an inclined plane to those of the R&E. Passenger (largely tourist) traffic followed two years later, in November 1876.



Adapted from: An Introduction to Cumbrian Railways, David Joy. (Cumbrian Railways Association, 2017)



Ravenglass, 1899 (oldmaps.co.uk)

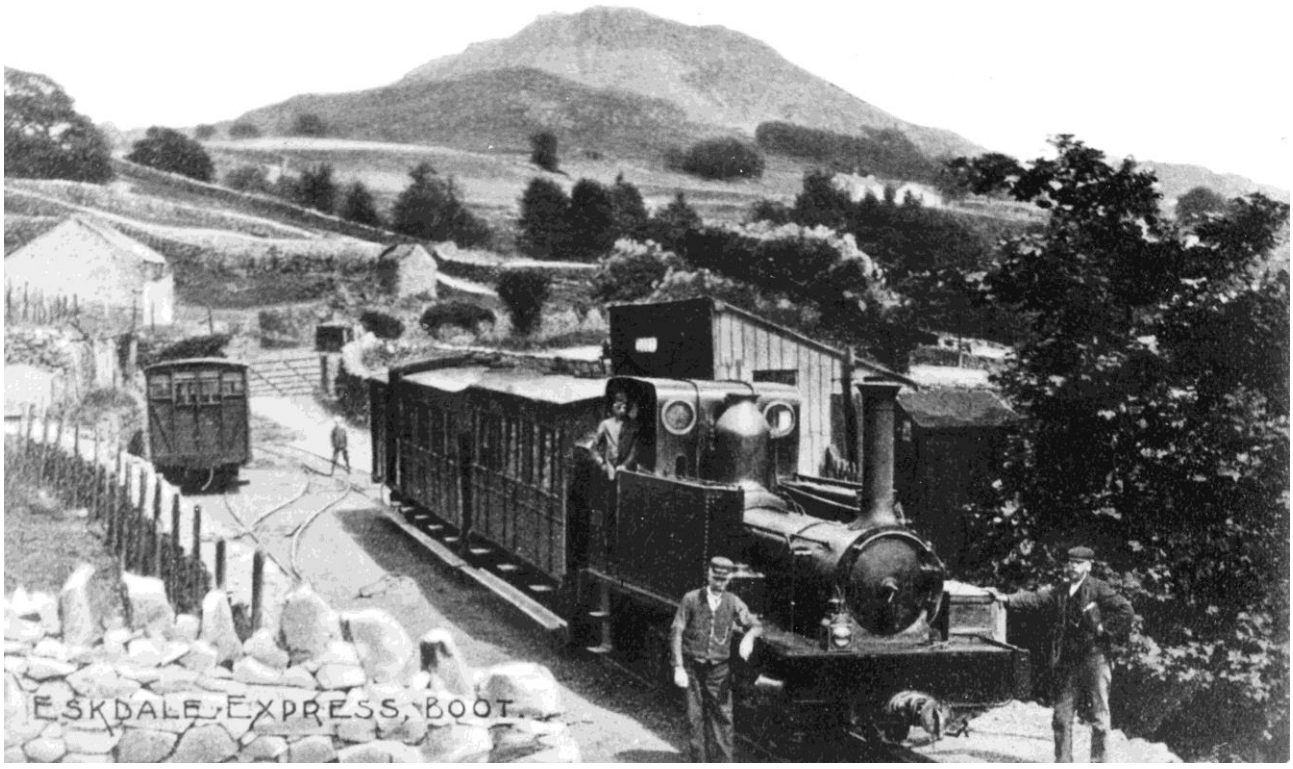
With the mining company going into receivership in July 1877 and its failure in in 1882, tourism soon became the only source of business and the railway struggled on until it ceased operations completely in April 1913. In 1915 a group representing Narrow Gauge Railways Ltd visited the now derelict remains, decided to lease the line and build a 15in gauge railway using mainly existing rails and sleepers. By April 1917 they had reached Boot but the line was cut back to Beckfoot, to avoid the 1 in 37 climb up to Boot, and a new terminus opened at Dalegarth in May 1926.

Transhipment problems, following the 1922 reopening of the granite quarries near Beckfoot and the opening of a crushing plant at Murthwaite in 1924, were solved in 1928 by building a 2½-mile standard gauge line from Ravenglass to Murthwaite. Both gauges were accommodated with the standard and 15in tracks being interlaced on the same sleepers. This arrangement was in place until 1953. The entire enterprise (the quarry company also owned the R&E) was put up for auction in 1960. A preservation society was formed and their bid was successful. Half of the purchase price was donated by individuals who formed an operating company. The result is the current major tourist and enthusiast attraction.

Former railway infrastructure has been adapted to the needs of the line: the former Furness Railway stone-built goods shed is now used by the R&ER as a workshop; the main-line station building is now the railway's own pub, The Ratty Arms; and the railway car park lies on the old goods yard.

Irton Road about 1920. 4-6-2 Colossus, one of three R&E locomotives designed by Henry Greely, is in the platform alongside Heywood 0-4-0T Ella. (CRA KER053)

Beckfoot Station, 2002 (Matthew Searle)



This photograph of "Owd Ratty" in 3ft gauge days may be seen as part of an exhibition at the Ravenglass Railway Museum

SATURDAY 27th APRIL – ULVERSTON (Stations & Canal) to ROA ISLAND & BARROW

The first stop this afternoon is Ulverston Station after which we will visit the Ulverston Canal with its rare rolling bridge. There will be various options for viewing the canal and the rolling bridge each involving different distances to walk from the coach. We will then follow the Conishead Priory branch (originally planned as an alternative route to Barrow from the east) and on to Roa Island; the site of Piel station and pier. There should be time before dinner to walk through the hotel grounds to the site of Furness Abbey station and the remains of the station hotel and the Abbey.

Ulverston – A Brief History

The name Ulverston has its origins from the Old Norse family name" Ulfarr" meaning Wolf Warrior and "Tun" the Old English word for a farm or homestead. The image of a wolf appears in the crest of the town's coat of arms. In the Domesday Book it was referred to as 'Ulvreston'. Standing on the west shore of the Leven estuary, Ulverston became officially designated as a market town in 1280 when King Edward I granted it a charter. Previously it had strong religious connections emanating from its proximity and connections with the nearby Conishead Priory. Following the dissolution of Furness Abbey in 1537 Ulverston supplanted Dalton as the most important and largest market town in the Furness Peninsula. When the canal opened in 1796 the town became an inland port and the export of slate addition of maritime trade added further impetus to Ulverston's economic growth. This situation prevailed until the 1860s when a gradual decline began due to the industrial development and rapid expansion of Barrow. Current population is 11,300 approx.

Ulverston: Industries

The area around Ulverston was rich in minerals and from early times quarries were established for the extraction of slate, iron ore, limestone and copper. Local industries in the early 19thC included lime burning, tanning, brick works, paper manufacture, iron and brass foundries. The opening of the Ulverston Canal introduced shipbuilding and sail making industries. Linen was manufactured using flax imported from Ireland. Slate, iron and copper ores were exported via the canal. Following the arrival of the railway a number of new industries were established in the and around the town, namely an iron foundry (1856), chemicals, wire works and a brewery. When Ulverston Station became the interchange for the branch line to Lakeside (open 1869), it initiated the growth of tourism in the Lakeland area to the north. The North Lonsdale Iron Works was opened in 1883 and continued in production until closure in 1938. Currently the major industries in Ulverston are pharmaceuticals (Glaxo established a manufacturing plant on the site of the former iron works in 1948) decorative glass manufacture (Cumbria Crystal) and tourism.

Ulverston: Notable Persona

George Fox (1624 – 1891)
George Fox, founder of the Society of Friends (the Quaker movement) preached in the area in 1652. One of his converts was Margaret Fell, the widow of Judge Fell who lived at Swarthmoor Hall. In 1669, ten years after the death of her husband, she married George Fox and the couple later returned to live at Swarthmoor Hall, which can be regarded as the birthplace of Quakerism

Sir John Barrow (1764 – 1848)
Born in 1764 at Dragley Beck just to the south of Ulverston. He became a distinguished Second Secretary to the Admiralty, a position he held for forty years. As a founder of the Royal Geographical Society, he was a much travelled man and also funded expeditions to the Arctic. Point Barrow in Alaska is named after him. The lighthouse shaped monument that stands on Hoad Hill behind the town was built in 1850 in his memory. It is 100ft high, constructed in the style of a former Eddystone Lighthouse and is a grade II listed building.

Stan Laurel (1890 -1975)
The name needs no introduction as the "thin one" in the now legendary slapstick comedy duo. He was born Arthur Stanley Jefferson in Argyle Street at Ulverston in 1890 and lived there for the first five years of his life. Later in life he emigrated to America, where after a solo acting career, Stan Laurel teamed up with Oliver Hardy in 1927 and the pair went on to attain film stardom. The town now has a Laurel & Hardy Museum and a statue of the comedy duo stands outside the Coronation Hall in the town centre.

Ulverston Station

The first railway to reach Ulverston was the FR in 1854. Its terminus station was built at the top of the cutting at the west side of the current station and remarkably this original station is still extant. The building, which is now a car showroom, has a lofty pitched roof and at the front elevation a very large glass segmental arch flanked by small hip roofed office buildings, the whole forming a symmetrical composition.

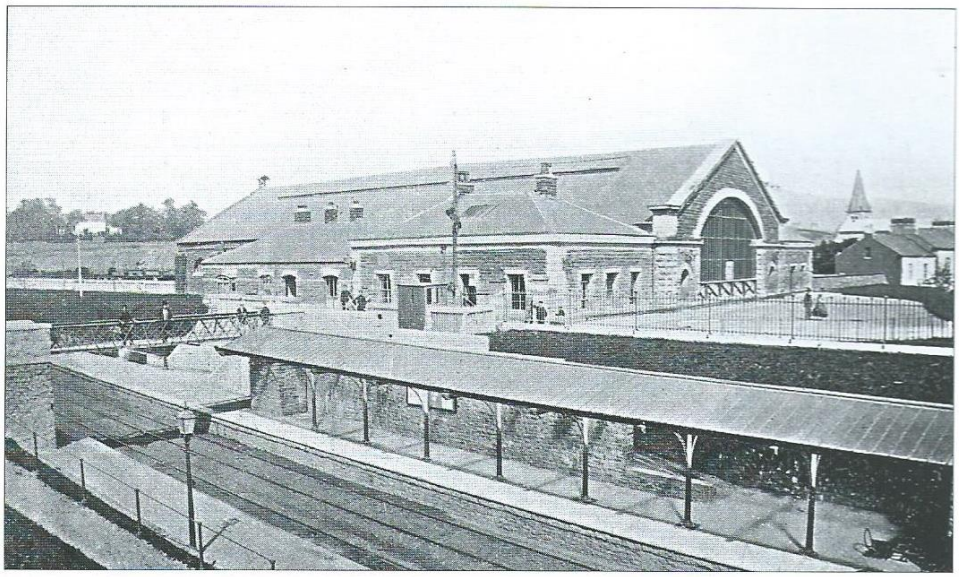
Following the opening of the U&LR in 1857, the FR's original terminal station at Ulverston was replaced by the U&LR's station which was at a lower level and built in a cutting. The FR's station remained in use as a goods station. The two stations were connected by stone stairs (still in situ). In 1860 new platforms were provided on the through line and at the same time the original FR station became the goods station, but retained the booking office and other passenger facilities. Finally in 1872 the FR commissioned the building of a new station and appointed Paley & Austin of Lancaster as the architects. The design was a remarkably large and ornate building for such a small market town. The building, which opened in 1874, is in Italianate style and built from square coursed red sandstone with cream ashlar trims. It sits on a limestone plinth with a ground floor sill band. The pavilion type roofs are covered in slate. The main building features are a two storey square entrance block which has a four stage lofty clock tower at the North East corner. Around the top of the clock tower is a pierced parapet with large stone urns at each corner. On the south elevation the lower level of the two storey block has three bays and each bay has a window with two round-headed glass lights separated by stone columns. Above the two lights is a central roundel. A single storey range extends towards the West, parallel with the platform and terminating in a gabled cross wing. To the east, a screen wall extends parallel with the down platform (direction towards Barrow) and terminates with a small two storey tower. Iron and glass hipped ridge and furrow canopies on iron columns extend across the full width of the platform side of the station building. The brackets on the iron columns are monogrammed "FR" as are the frontage canopies.

The station has three platforms, the main platform (No 1) abutting the station building and an island platform (Nos 2 & 3). This is covered by a similar canopy to that on the single main platform. The down line is served by two platform faces i.e. platforms 1 and 2, which is a rather unique arrangement. The island platform serves the west bound main line towards Barrow (Platform 2) and facilitates a cross platform interchange with the east bound main line trains towards Carnforth on Platform 3, which is the outer one. Trains that formerly used the Lakeside Brach also departed from Platform 3. The gradient through the station is 1:82.

In the late 1970s the CRA was a prominent supporter in the campaign to restore and retain the glass platform canopies. Some of the cast iron parts were already beyond recovery, but the best parts were combined to restore the canopies over about two-thirds of their original length. Currently at the east end of the main station building, on platform 1, the former toilet block has been refurbished and converted into a cafe and bicycle-hire base. The station buildings are Grade II Listed.

Under railway management the canal continued to be used, handling a few thousand tons of shipping a year until 1916. The last commercial traffic was carried in 1917. In 1945, the LMS Railway officially abandoned the Ulverston Canal. It is now owned by the local authority and it still acts as a water supply source for the nearby Glaxo Welcome chemical factory.

.



Ulverston Station in the 1860s. *The FR terminus of 1855 stands above the later through station built for the opening of the U&LR. This was, in turn, replaced by the present station in 1874. The Furness company owned the whole station, with the U&LR being tenants. The left-hand office building alongside the terminus was erected to accommodate the U&LR staff. The station signal and signalman's shelter stand at the top of the ramp to the Up platform.*
(From The North Lonsdale Magazine)

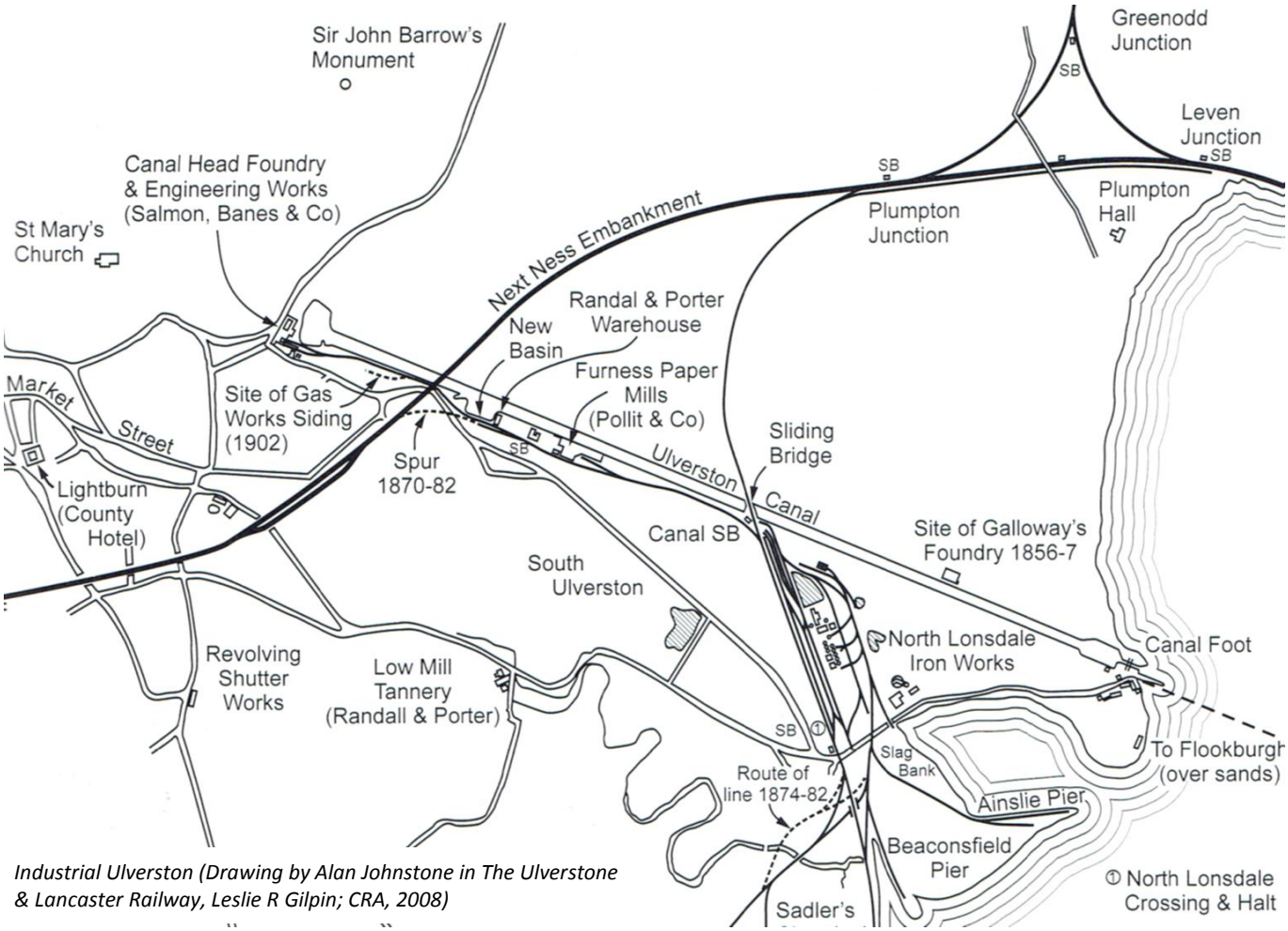
The fine tower of the 1874 Ulverston station, designed by architects Paley & Austin, is seen in this view of 1910. In the right foreground is Ulverston East signalbox. The island platform served both sides of the down main line facilitating cross-platform interchange between down trains and Lakeside branch services. (Original postcard. Geoff Holme collection: N953)

Ulverston Canal: Origins & History

The idea for a canal at Ulverston was put forward in 1791. A number of local merchants subscribed to the proposal, the purpose of which was to create a port for the town. John Rennie was employed to carry out the survey and he recommended the construction of a ship canal. The Act for building the canal was obtained in 1793 and the first sod cutting ceremony took place on 23rd August in that year. Construction took three years and the cost of the work was £9,000. The canal opened in 1796. Due to a trade slump in the 1790s, traffic using the canal was slow to grow and it was unprofitable for some twenty years. The economic problem was exacerbated by the physical problems caused by the uncertain tides and shifting sands that prevailed around Morecambe Bay.
The arrival of the canal led to industrial growth in the town, an iron foundry, smithies, shipbuilders, sailmakers and a timber yard all being developed alongside the canal. Exports included metal products, textiles and gunpowder.

By the 1820s the trade and economic situations had improved and the local industries and canal brought prosperity to the town. There were regular sailings to London, Liverpool, Preston and some Scottish ports. In 1835 a passenger service by steam packet to Liverpool was introduced. The canal company levied a charge, extortionate for that time, charging a rate of £10 per year for every passenger landed at Ulverston and in addition limited the amount of personal luggage to 5lbs. For the fifteen years from 1829 to 1844 a yearly average of 530 ships used the canal. In 1844 it was used to transport materials required in the construction of the FR from Ulverston to Barrow.

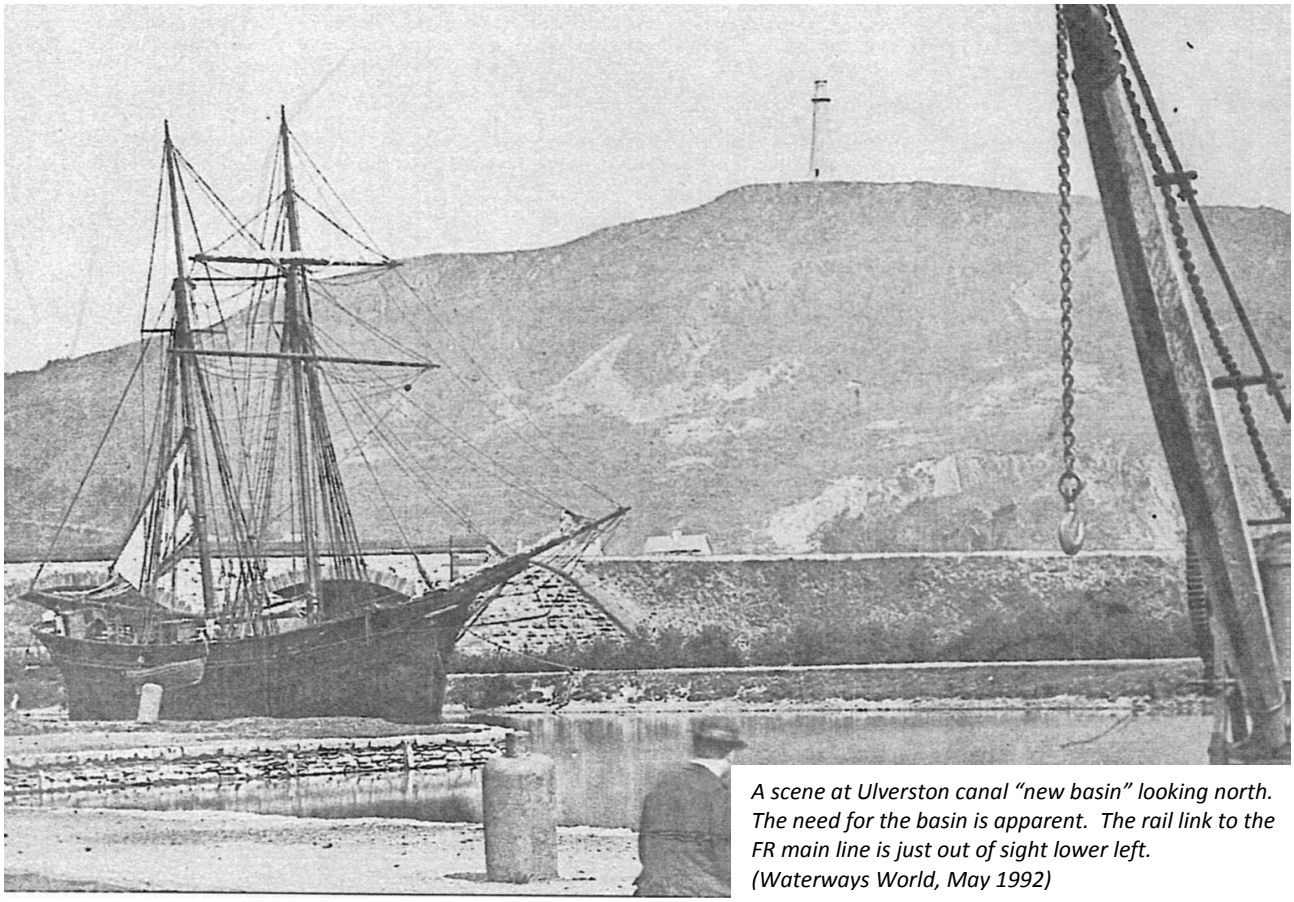
The FR in 1846 opened its line between Kirkby, Dalton, Barrow and Piel, which resulted in an increase to the tonnage of iron and slate shipped from the latter two places. However the arrival of the railway caused a decline in the Ulverston canal trade, although the town continued to thrive as a centre for shipbuilding. In 1849 a new breakwater was constructed in the Leven estuary to maintain and direct the flow of the channel towards the canal but this made no difference to the decline in traffic. In 1851 the U&LR was authorized but political problems and construction difficulties led to delays and the railway line from Ulverston through to Carnforth was not opened until 1857. In 1862 the FR absorbed the U&LR and in the same year it purchased the Canal for £22,000.



Industrial Ulverston (Drawing by Alan Johnstone in The Ulverstone & Lancaster Railway, Leslie R Gilpin; CRA, 2008)

Following the closing of the opening section on the Leven viaduct in 1869, thus curtailing boat access to the port of Greenodd, a steeply graded railway spur was built to form a link between the FR's main line and the slag heap of the former Low Furness Iron Works (Furness Paper Mills on the map above). A siding then ran back alongside the canal "new basin", built when the railway bridge cut off access to Canal Head for tall-masted ships. The spur closed in 1882 when the Bardsea Branch railway was opened for goods traffic. By this time the North Lonsdale Iron Works had opened (in 1876), and the canal siding extended from the Furness Paper Mills to the Iron Works and, probably, in the other direction to the Salmon, Barnes foundry. In 1882 the (lengthened) canal siding was diverted from running into the ironworks sidings into a junction with the Bardsea branch next to the Canal signal box.

The last commercial traffic was carried on the canal in 1917. It was formally abandoned by the LMS in 1945. The canal is now owned by the local authority and supplies water to the nearby GSK factory site.

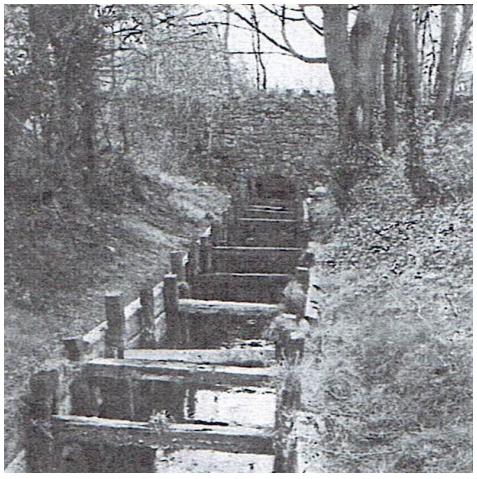


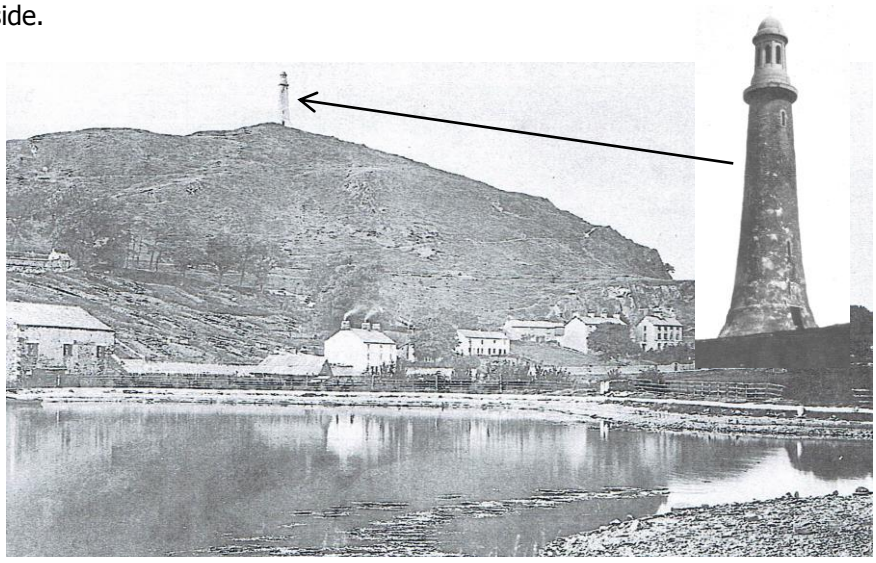
A scene at Ulverston canal "new basin" looking north. The need for the basin is apparent. The rail link to the FR main line is just out of sight lower left. (Waterways World, May 1992)

Ulverston Canal: Facts & Features

The canal is entirely straight and is one and a half miles in length. It is 66ft wide and 15ft deep. There is only one lock: a sea lock at the canal's entrance to Morecambe Bay. Both the canal and sea lock were built to dimensions capable of accommodating sea-going vessels up to 104ft long x 27ft beam. The water supply for the canal is provided from the nearby Newland Beck.

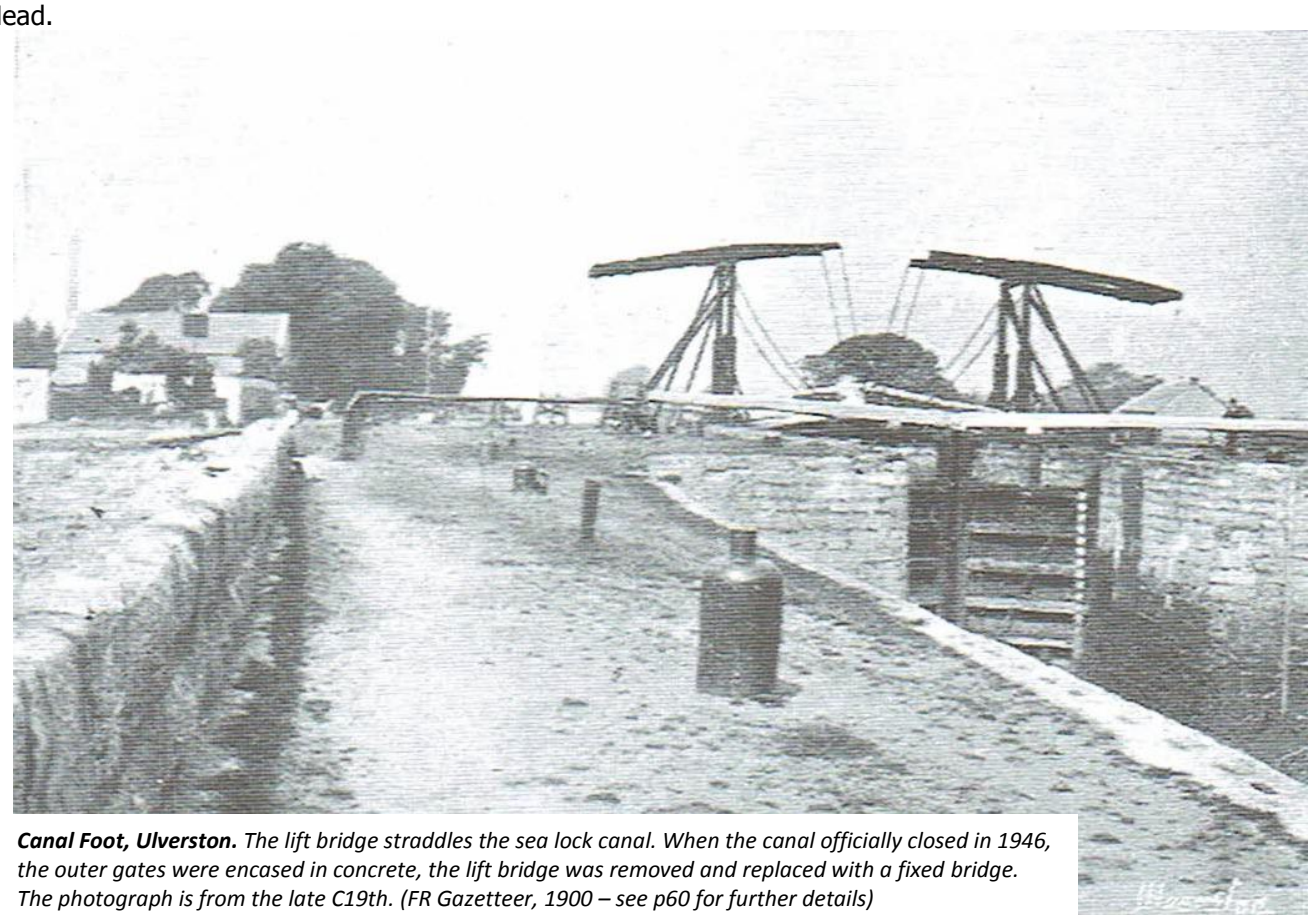
Remains of the stone built entrance lock, including gates and paddle gear are still extant at the eastern end of the canal. In the late 1960s a concrete dam was built across the seaward end of the lock. There was once a lift bridge across the lock but this has long since gone. Nearby is the Bay Horse Inn and there are a few old cottages in the vicinity. A short stone pier extends in to the bay at Canal Foot. The towpath was originally along the both sides of the canal but now runs along the north side.





Left: The back drain which ran alongside the canal on the north side with transverse wooden beams preventing the sides from collapsing. Right: Canal Head with Hoad Hill and Sir John Barrow's monument in the distance. (Waterways World, May 1992)

To the north, viewed from Canal Foot, the Leven Railway Viaduct crosses Cartmel Sands and to the south east is Chapel Island. There were two railway crossings over the canal. The former easterly crossing was for the North Lonsdale Ironworks (opened in 1873) and later the Glaxo works sidings (plant opened 1948) and the extant easterly one is the stone built double arch bridge on Cumbrian Coast main line. At the Ulverston end the canal basin and terminus are situated a quarter of a mile to the east of the town centre. The area is known as Canal Head.



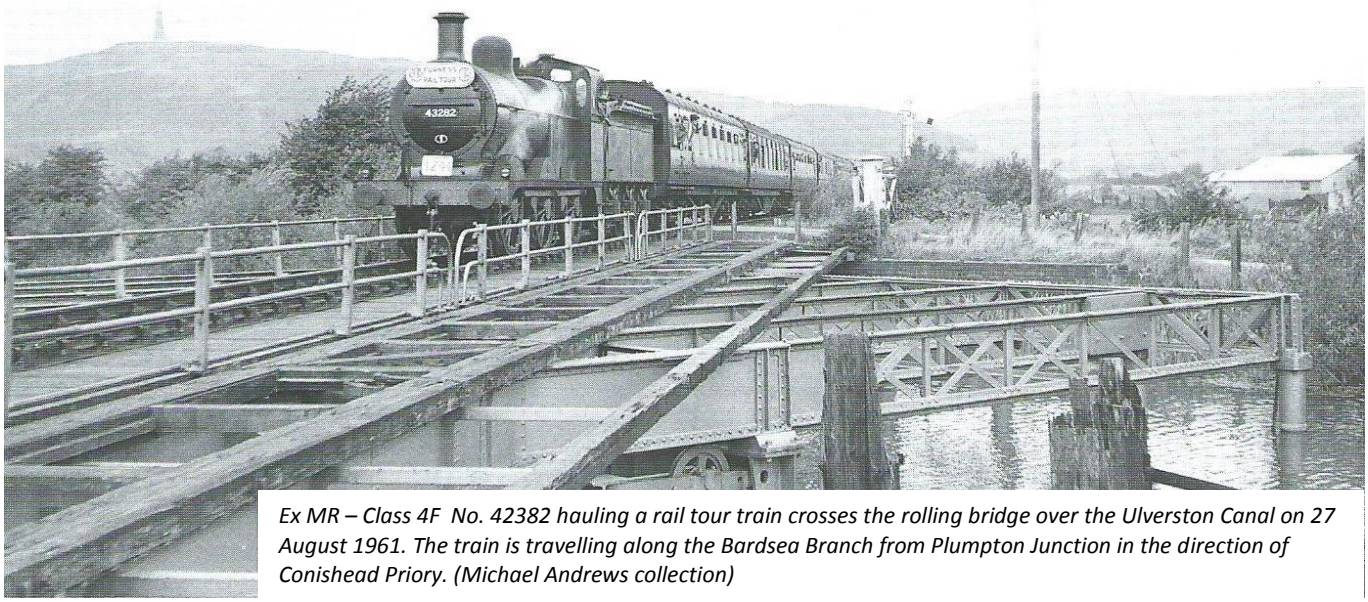
Canal Foot, Ulverston. *The lift bridge straddles the sea lock canal. When the canal officially closed in 1946, the outer gates were encased in concrete, the lift bridge was removed and replaced with a fixed bridge. The photograph is from the late C19th. (FR Gazetteer, 1900 – see p60 for further details)*

Rolling Bridge – FR's Bardsea Branch Railway crossing Ulverston Canal (*SD 304 781)*

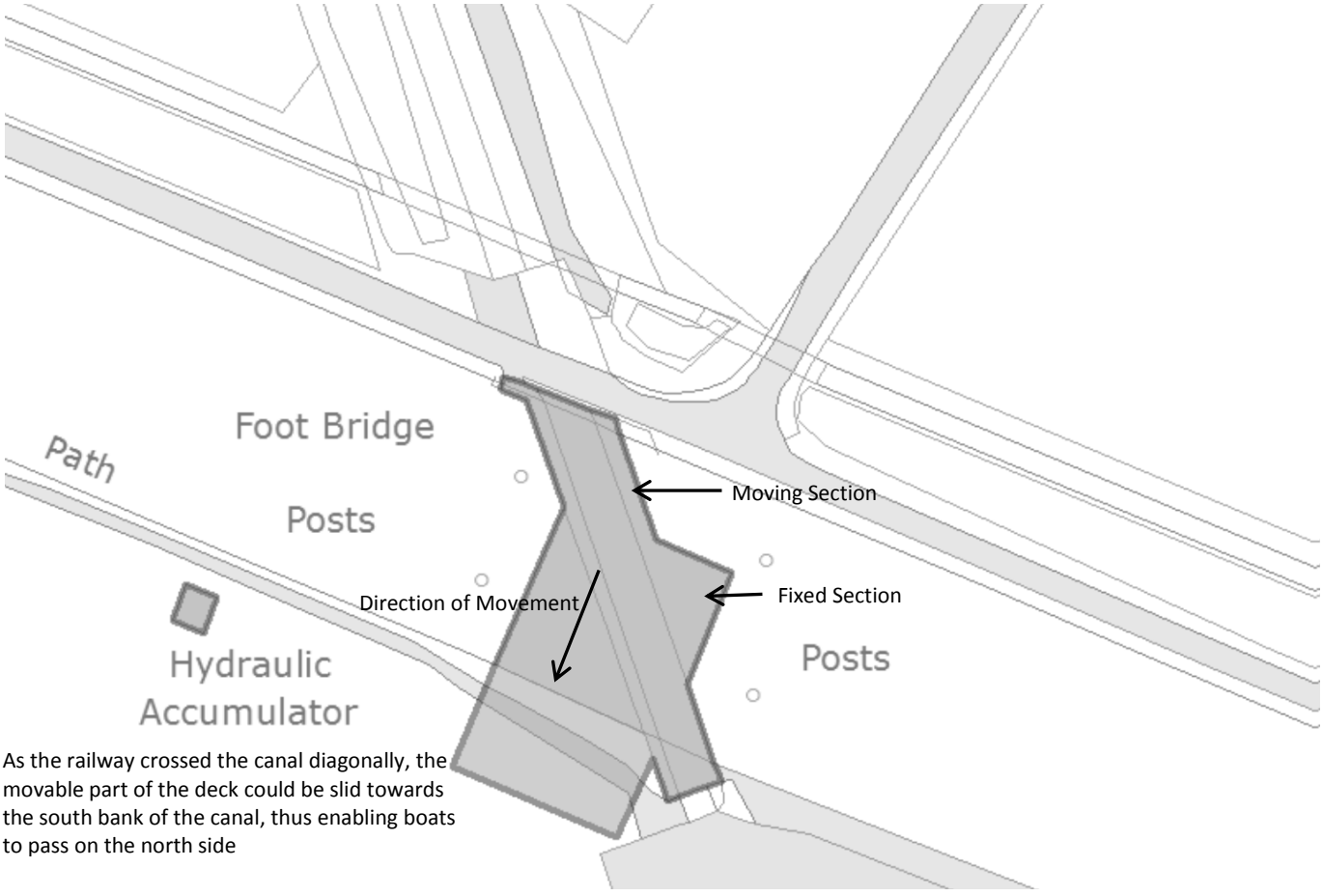
Where the former Bardsea Branch crosses the Ulverston Canal there is an innovative and unusual moveable railway bridge. The bridge was erected and in use by 1883. It is based on a design produced by F.C. Stileman (1824-1889), who was the FR's company's chief engineer. Messrs Westray Copeland & Co. of Barrow-in-Furness manufactured the machinery and the bridge structure.

Details of some of the construction specifications and dimensions are as follows:
Length on centre line 27 feet.
The lattice framework that supports the deck and double track railway is manufactured from steel.
It has eight main girders each 2ft 6 inch deep carrying a 2 inch thick timber deck with steel bridge rails.
Supported on 39 cast iron screw piles. Heaviest loaded pile was 54 tons.
Maximum deflection. - 1.5 inches.
Hydraulic rams were 5 inches and 6 inches in diameter.

The bridge operated hydraulically. It was unusual because it was in two sections, one was fixed and the other moved along it on a rolling principle. Iron wheels placed in the rolling section travelled on rails set in the fixed section. The wheels were turned by using hydraulically operated rams that pushed the moveable section of the bridge diagonally back and forth across the canal. Movement and interlocking of the bridge was controlled from the canal signal box which was situated on the south side of the canal alongside and west of the railway.
The fixed and moveable sections of the bridge, the deck and double track rail are still extant. Also extant is the hydraulic tower that provided power to facilitate movements of the bridge. The 3 storey tower is built from brick with a pitched slate roof and is situated on the south side of the canal, 50 yards west of the bridge. It contained a hydraulic accumulator, in the form of a 5 ft diameter pipe into which water was pumped and stored until needed to operate movements of the bridge. An adjacent building which has been demolished was the engine house.



Ex MR – Class 4F No. 42382 hauling a rail tour train crosses the rolling bridge over the Ulverston Canal on 27 August 1961. The train is travelling along the Bardsea Branch from Plumpton Junction in the direction of Conishead Priory. (Michael Andrews collection)



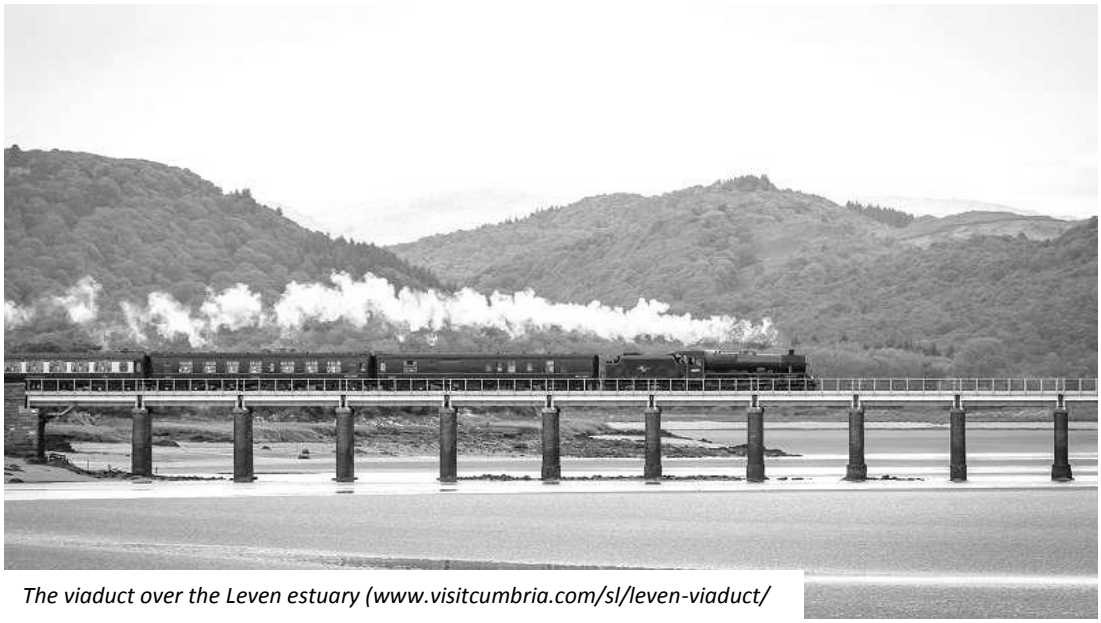
As the railway crossed the canal diagonally, the movable part of the deck could be slid towards the south bank of the canal, thus enabling boats to pass on the north side

OS Map of Rolling Bridge (Source: https://historicengland.org.uk/listing/the-list/list-entry/1404328

The cylinders and rams were removed from the bridge circa 1952/53 and the bridge became fixed. At the same time the bridge parking dock on the south side was filled in. The timber and decking has been removed. A pipe and pedestrian bridge were added later. Both the bridge and hydraulic accumulator tower are Grade II listed structures.

Leven Viaduct

.



The viaduct over the Leven estuary (www.visitcumbria.com/sl/leven-viaduct/

The River Leven is 8 miles long and drains from the southern end of Windermere. The estuary is tidal

The viaduct (built 1863) may be seen from Canal Foot, to the north east. For a description and some details on its construction, see the notes for Monday.

Bardsea Branch

In the early 1870s the FR was experiencing operating difficulties due to increases in goods traffic and operating costs caused by the need to bank freight trains in both directions over the long Lindal Bank between Ulverston and Dalton. To alleviate this problem the Company's management took the decision to build a new line to Barrow, avoiding Ulverston Station and Lindal.

This new route would leave the FR's main line at Plumpton, 2½ miles east of Ulverston and head in a south westerly direction via Bardsea towards Barrow from where it was planned to make an end-on connection with a second new line running north east from Barrow (Salthouse Jct) to Bardsea. The line was to be double track and built to main line standards. In 1876 the FR obtained an Act of Parliament to build the northern section of the line between Plumpton Junction and Bardsea. However due to a slump in trade and financial difficulties at that time the proposed southern section from Barrow to Bardsea was excluded from the Act and was never built. The new double track line, 2 miles in length, was officially named the Bardsea Branch. As built, it only reached Conishead, one mile short of Bardsea. It opened, initially for goods traffic, in 1882 and for passenger carrying traffic on 27th June 1883.

Direct access to the branch was only available to trains travelling from the east (i.e. from Carnforth direction).This was an operational encumbrance as the Ulverston to Conishead Priory passenger service had to perform a reversal movement at Plumpton Junction. This involved uncoupling the locomotive, which by using a diamond cross over ran round the carriages and then recoupled at the west facing end of the train. Exactly the same run round procedure applied to trains on exiting the Bardsea Branch.

There were two signal boxes on the branch, situated in close proximity to each other. One, at the canal crossing, controlled the rolling bridge/towpath gate and the other, named North Lonsdale Crossing, controlled the level crossing gate at North Lonsdale Road and the main access in and out of the sidings for the North Lonsdale Ironworks (NLI). With the opening of the Bardsea Branch (in 1883) a connection was provided between the extended "original" canal siding and the new branch. At this time the connection to the 1857 main line was removed.

Undoubtedly the most interesting feature on the Bardsea Branch was the unique rolling bridge that carried the railway over the Ulverston canal. (*See separate note above: "Rolling Bridge - FR's Bardsea Branch Railway crossing Ulverston Canal".)*

The only station on the branch was Conishead Priory which was at the southern terminus of the line. The station opened in June 1883. From the outset passenger traffic was sparse, particularly as for the first two years there were only two return passenger trains per day. This was then reduced to one return trip per day. During WW1 the FR took the decision to withdraw the passenger service, which ceased on 6th March 1916. The line between North Lonsdale Crossing and Conishead Priory was closed although the track remained in situ. The station building at Conishead Priory however has survived and is now a private residence. Following this partial closure the northern section between Plumpton and North Lonsdale Crossing remained in use as a freight line to serve the North Lonsdale Ironworks and other local industries in that area. NLI ceased the production of iron at their south Ulverston works in 1938. In 1948 part of the former ironworks site was purchased by Glaxo (now GSK) who opened a pharmaceutical manufacturing plant (extant) on the site. The Bardsea branch continued to provide a goods train service to Glaxo until April 1994. The last trains were rail tanks wagons that carried fuel oil for burning use in the boilers at the plant.

Conishead Priory

At Conishead, an establishment founded by Augustinian monks in 1160 as a hospital for quote "*the poor, decrepit, inignent and lepers of the Ulverston are*a" had its status raised to that of a Priory in 1188**.** The monks were the most influential people in the area until enforcement of the dissolution of the monasteries began in the 1520s. In 1537 Conishead was seized by the Crown, the monks were evicted and the priory building was dismantled. In 1540 the estate was granted by the King to Wm Stanley and a large country house was then built on the site. For the next 100 years there were a series of different owners. In in 1638 the Conishead estates passed, by marriage to a member of the Braddyll family who for over 200 years and through five of generations remained as the owners and established themselves as one of the great local families in the Furness area and Lancashire until 1847. The last Braddyll to live at the Conishead was Col Thomas Braddyll who, on inheriting the house and estate in 1818, quickly took the decision to rebuild the existing country house and replace it with a larger and expensive property. The architect was Philip Wyatt who produced a Gothic Revival style design for the new stately home. Internally it was lavishly furnished.

Unfortunately Col Braddyll had made some disastrous financial speculations in the Durham coalmines and in 1848 he was declared bankrupt and forced to sell the house and estate. It was sold on through a number of owners until 1878 when it was purchased by a syndicate who converted it to a hydropathic hotel.

By 1883 the FR built and opened its Bardsea Branch railway including a station named Conishead Priory, which was specifically provided to for passengers who were visiting and staying at the hydro. The hotel and hydro continued in business until 1928 when the Durham Miners Welfare organization purchased it and operated it as a convalescent home for miners from the Durham coalfield who were ill or had suffered industrial injuries. During WW2 it was commandeered for use as a military hospital and with 400 beds it was the largest military hospital in NW England. After the war Conishead reverted back to the Durham Miners whose tenure continued until 1972 when, after 44 years of ownership, they decided to dispose of the property. The building and its contents were auctioned off to a buyer who had ambitions to develop the site as a holiday camp. This did not materialise and the house remained empty until 1976 when the building and grounds were sold to Manjushri Kadampa, a Buddhist group who still own and use it as a meditation centre. A new Buddhist temple has been built alongside the 19thC stately home.

Conishead Priory (https://en.wikipedia.org/wiki/Furness#)

Conishead Priory Station, 1950s (https://furnessrailway.wordpress.com)

Roa Island & Piel Station

The line to Rampside and Piel (the station on Roa Island) was one of the original sections of the 1846 Furness Railway. It left the line to Barrow and its jetties at a junction just to the south of Roose – the station was opened as Roose Gate in 1850. The change of name was made in 1858.

The line was built to form a connection with steamer services to Fleetwood. Roa Island was purchased for this purpose by John Abel Smith in 1843. He built a jetty, which extended into deep water, and an embankment, joining the island to the mainland, capable of carrying a railway. The Furness Railway negotiated rights to operate trains on the causeway but omitted to extend the rights to include the steamer pier. Differences between Smith and the FR led to the Railway Company building a pier at Barrow, but this was dependent on tides – this not being the case at Roa Island. Eventually the dispute was resolved by a storm in December 1852 severely damaging both the pier and the causeway leading to the FR purchasing both for the sum of £15,000. Steamer services continued from Piel Pier, with destinations served being extended to include the Isle of Man and Belfast, until 1882, at which time they were transferred to newly constructed steamer berths in Walney Channel adjacent to Ramsden Dock. As direct boat trains to Piel were no longer needed, the line between Roose and Parrock Hall Junction was lifted and only local services between Barrow and Piel ran over the causeway. The pier, which was falling into disrepair, was dismantled in 1894. From 1882, the boat trains ran to Ramsden Dock to connect with steamers to Fleetwood, Belfast and Douglas, Isle of Man.

Piel and the Development of Tourist Routes

Piel Station and Pier (Roa Island) were important in the development of tourism in the Lake District. Smith, who had a large financial interest in the (financially struggling) Preston & Wyre Railway, started steamer services between Piel and Fleetwood in August 1846. In the first week of operation, some 1,500 passengers were carried, most of them visiting Furness Abbey. The steamer also provided a quicker route to the Lake District and the tourist business grew with "conveyances" running from Dalton to connect with steam yachts on Windermere and also from Kirkby to Coniston.

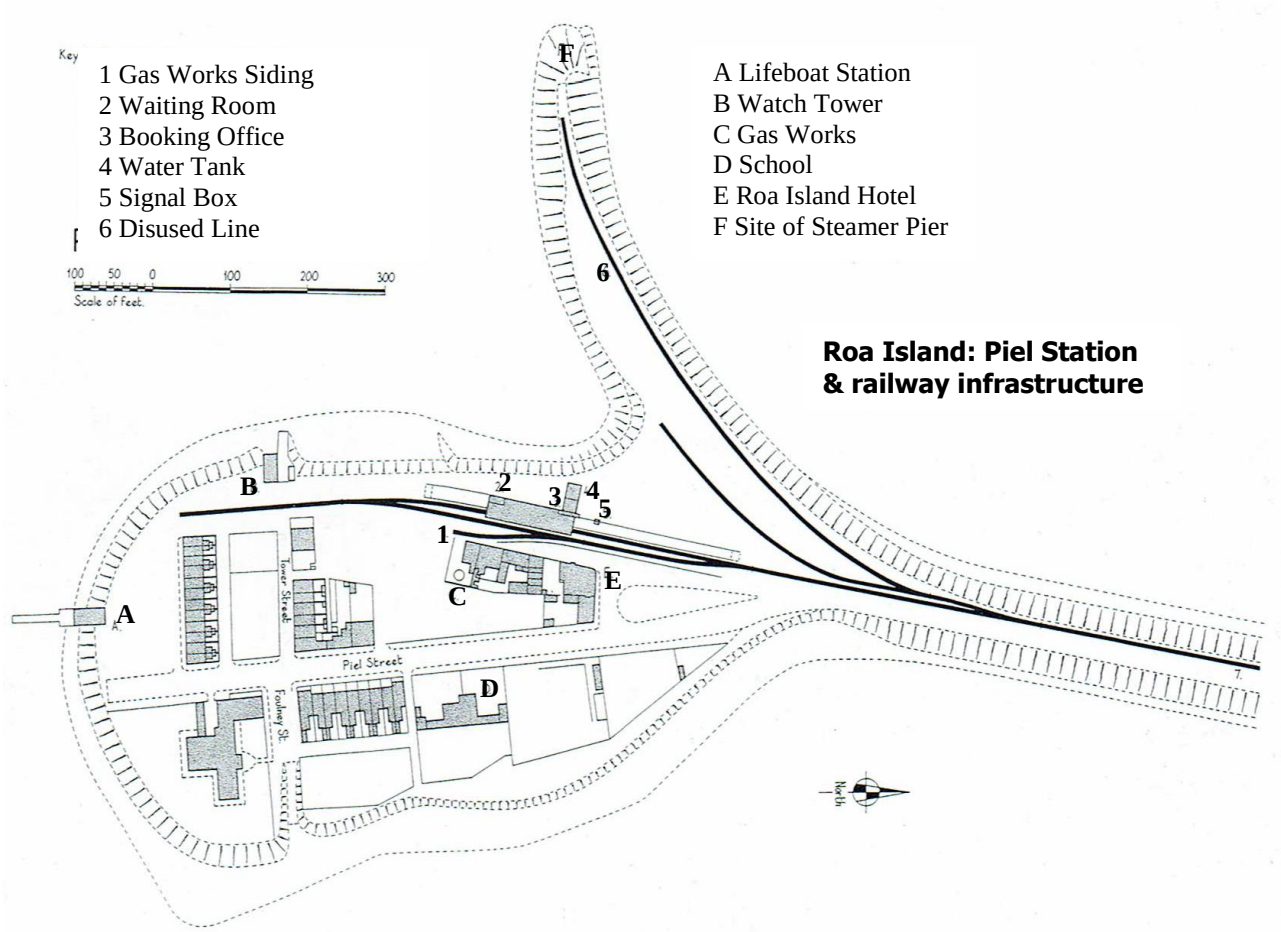
Financial and operational difficulties followed the initial operations but, by 1852, there were sailings from Piel to both Fleetwood and Morecambe; the latter in connection with the 'little' North Western Railway. The first railway built into the Lake District was the Kendal & Windermere which opened in 1846, reaching Windermere in 1847. Plane for further routes in the heart of the Lakes were thwarted by opposition, both local and by bodies such as the Royal Society of Painters in Watercolours. The line from Ulverston to Lakeside opened in 1869, providing a rail link from Piel to the steamers on Windermere. With the decline in mineral trade on the Coniston branch, the FR realised its potential for tourism: although had the line been built with tourists in mind, it may have taken a more direct route from Ulverston and run closer to Coniston Water. At the same time, the planning of Grange as a resort began.

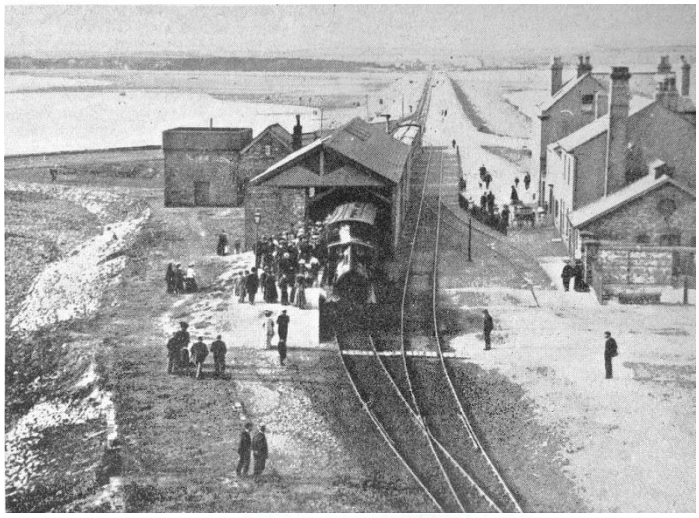
Passenger traffic became increasingly important as the trade related to haematite declined, and tourism was prominent in the plans of Alfred Aslett following his appointment as General Manager in 1896, following the death of Sir James Ramsden. New carriages (including some electrically lit corridor stock with automatically discharged aromatic disinfectant in the lavatories), combined road/rail/steamer services, full-colour posters, postcards, and guidebooks were introduced along with a range of cheap fares and other tourist-motivated innovations.

Tourism, fostered by the Furness Railway, and assisted by the general rise of a holiday-making middle-class, reached its greatest heights during the Edwardian Age – as was the case with other railways (e.g. the North Staffs). This rail-related tourism came to an end at the outbreak of World War I and struggled to recover afterwards.

As successful as the investment in tourism appeared to be, the financial return was much lower than that from the (lost) mineral traffic it replaced as a focus of the business. The railway became less attractive as a takeover target and, after grouping and beyond, both LMS and BR showed little interest in developing the region.

"The Furness Railway, despite its occasional misjudgement of priorities, had served its district well and its demise was locally recorded as a great loss" (David Joy)



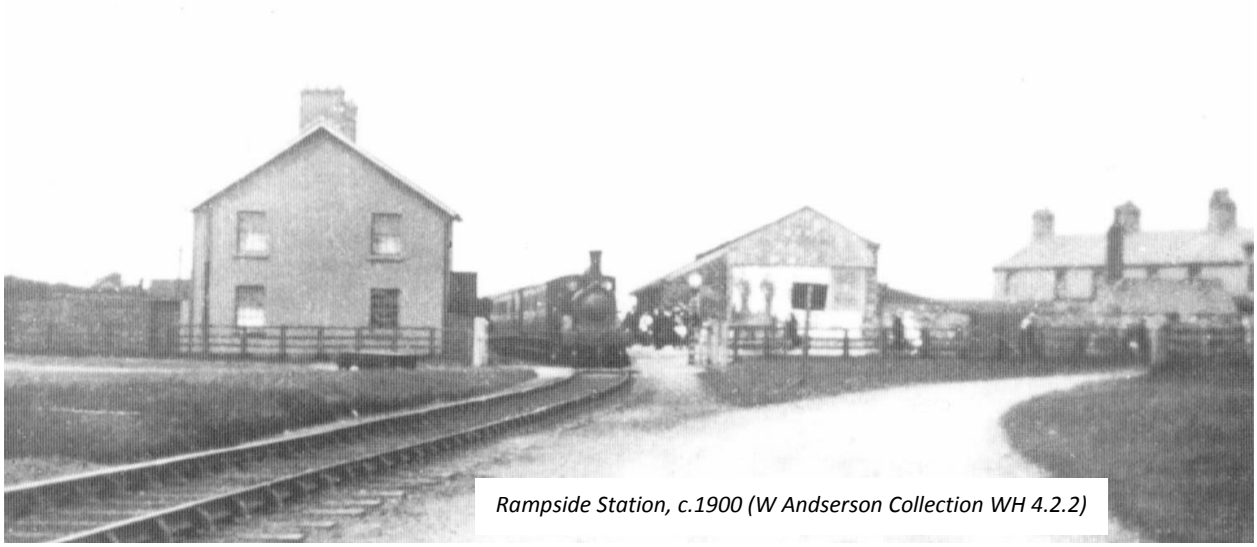


Looking north from the pilot's watch tower (1890s).
A train hauled by 2-4-0 locomotive built by Sharp Stewart in 1872 is in the station. On the left is the water tower and beyond that the curve that carried the original line (disused by the time of the photograph) to Piel Pier and steamers to Belfast and other destinations. To the right is a short siding serving the FR's gas works. Gas was required for the island and for the buoys marking the channel.
(Railway Magazine Feb Mar 1959)

Looking south (?early 1900s). The station had a single platform partially covered by a short train shed. A loop line ran outside the shed. A signal box, out of picture to the right and in front of the train shed, was installed in Oct 1900. After closure of the line, it became a ground frame box at the north end of Barrow Central station. The station hotel, in the centre of the picture, is all that remains today. (www.barrowpc.com))

Rampside

Concle station opened with the line in 1846. The change of name to Rampside was made in 1869 and the station closed with the line from Parrock Hall junction to Piel in 1936.

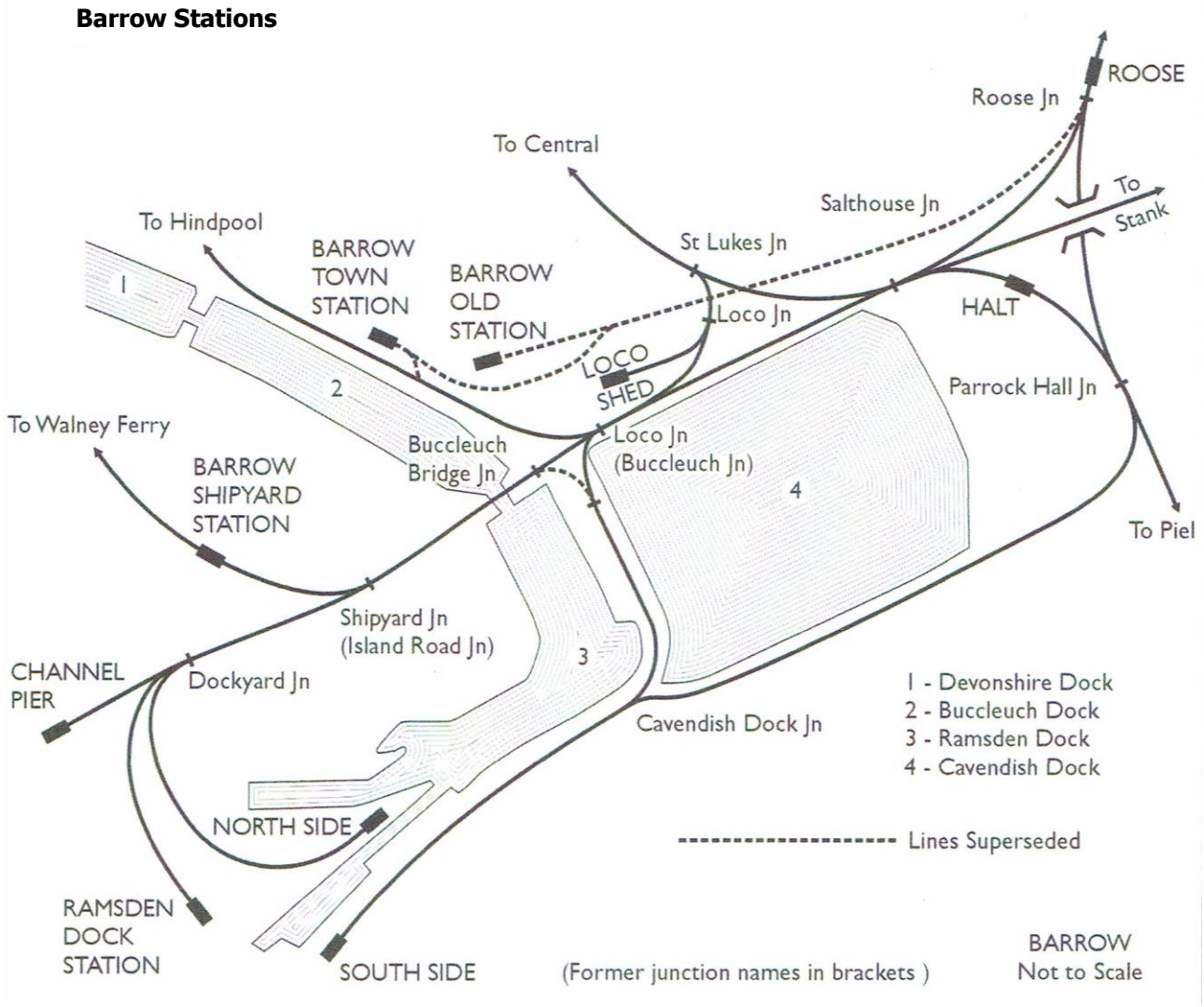


Rampside Station, c.1900 (W Andserson Collection WH 4.2.2)

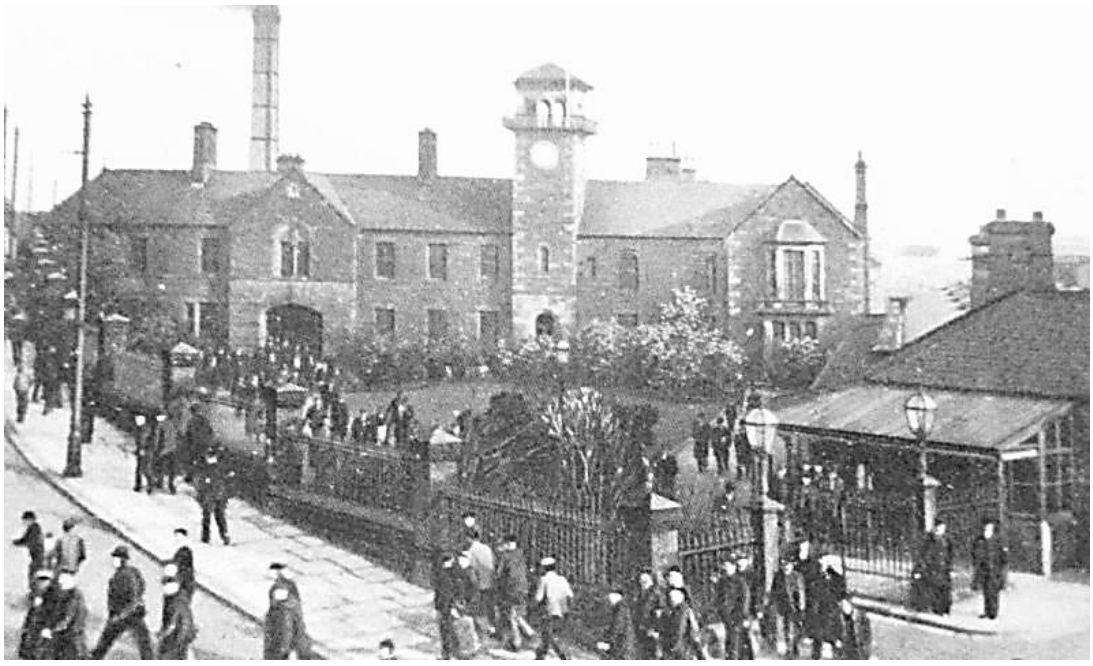
The train at the platform is for Piel. From the opening of the line in 1846 until 1853, when the FR purchased the causeway and the pier on Roa island, this was the end of the Furness Railway property. The station building and the adjacent Concle Inn still stand. The station master's house on the left has been replaced by a modern private residence.

Rampside station: then & now by Gerry Scott. (furnessrailway.wordpress.com/portfolio/history/

Barrow Stations



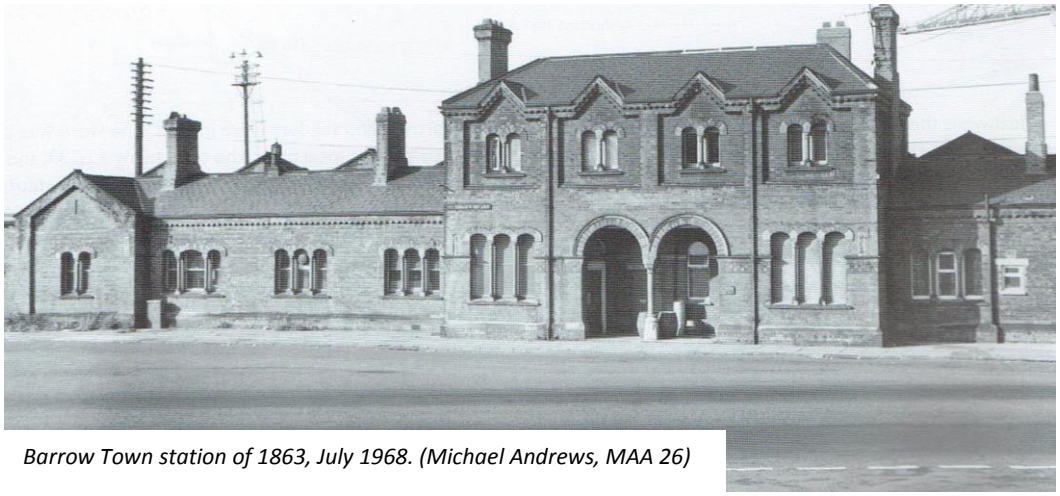
The first station in Barrow (shown as **Barrow Old Station**) opened with the Furness Railway in August 1846. This was a wooden structure which was replaced by Barrow Strand station (shown as Barrow Town) in 1863. The General Offices of the Company (previously housed in a railway-built terraced cottage) were moved to new premises built adjacent to the 1846 station site between 1850 and 1864. The southern portion of the building, with the clock tower, had been erected by 1855. All were demolished in 1978.



The Furness Railway General Offices: St Georges Square entrance; Saturday 26th May 1917. Crowds gather to see the award of the Military Cross to an FR night foreman. (www.nwemail.co.uk)

The building on the right is engine shed constructed on the site of the passenger platform of 1846. The west end of the shed was altered later, with the canopy being filled in, to make a porter's lodge.

Barrow Strand station was opened in 1863 and was designated **Barrow Town** after the opening of Ramsden Dock station in 1881. To accommodate increasing traffic the adjacent carriage shed was converted into an arrivals station in 1872. Barrow Town closed in 1882 with the opening of Barrow Central station on Abbey Road – the site of the current Barrow station



Barrow Town station of 1863, July 1968. (Michael Andrews, MAA 26)

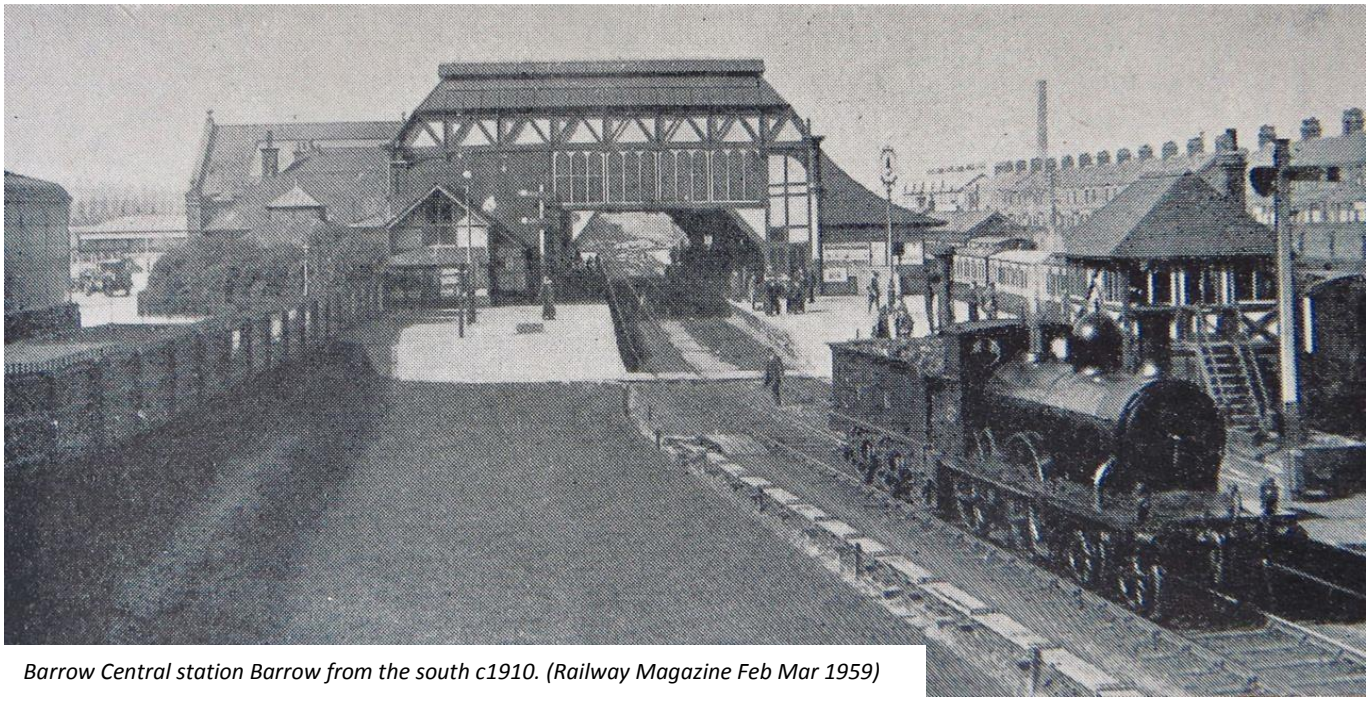
Barrow Ramsden Dock station opened in June 1881 to serve the boat trains as steamer services were relocated from Roa Island. It replaced Piel station for these services.

Barrow Shipyard station opened in May 1899. It was built at the request of Vickers Sons & Maxim to bring in workmen, who travelled from as far afield as Millom and Coniston in the north and Grange in the south. There were no timetabled passenger trains. The station closed in July 1967.

Roose station was built to serve industry and then housing in its vicinity. It opened in June 1851 and is still open, albeit unmanned and with bus shelters having replaced the original station buildings. The factories it served have been demolished and replaced with a housing estate.

Salthouse Halt opened in May 1920 for summer Saturday service to Piel. It was not a success and the station closed the following year.

Barrow Central station opened in June 1881 as a replacement for Barrow Town station. It had a mock-Tudor façade and a high overall roof. The station remained in this form, other than the platforms being lengthened, until it was destroyed by enemy action in 1941 and replaced in the mid-1950s. It is now known simply as 'Barrow'.



Barrow Central station Barrow from the south c1910. (Railway Magazine Feb Mar 1959)

Furness Abbey & Station

Furness Abbey station opened in 1846 and became an important exchange station. During the 1850s, the FR had extended to Ulverston (1854) and Coniston (1859), with trains were being timetabled to these towns from Barrow and Piel. Trains ran from Barrow to Furness Abbey and then on to either Coniston or Ulverston.

Coinciding with the opening of a curve between what became Dalton and Park junctions (see diagrams on pp6-7) Carnforth to Whitehaven became the main line, with Furness Abbey to Barrow labelled the "Barrow Branch" and Furness Abbey to Piel, the "Piel Branch". However, Furness Abbey remained the exchange station for passenger services and trains for Whitehaven reversed there. Services ran from Barrow and Piel to connect with the through trains. Furness Abbey became an important stop on the FR Inner and Outer Circle Tours connecting tourists from Blackpool (via Fleetwood) with the Lake District. (See notes for Saturday).

The station closed in 1950. Abbot's Wood was the home of Sir James Ramsden. South Lodge is extant.

The Vale of Nightshade, Furness Abbey & Station (OS Map, 1911; nls.uk)

The empty former Preston family manor house was purchased by the Furness Railway in 1847.

The architects Sharpe and Paley converted it into a hotel (top left of photograph) with 36 bedrooms, and three bathrooms! The public rooms included an entrance hall and a reading and sitting room, both with stained glass windows, a billiard room, and a ballroom.

huddlehub.co.uk)

The private station platform for Sir James Ramsden can be seen in the top centre of the aerial view of the station and abbey area (above right). His mansion, Abbots Wood, is out of view to the top right.

The photograph (right) is a view of the down platform in 1905.

The hotel was extended (to the north) in 1866–69, linking it to the railway station, and included some station facilities – see photograph bottom right.

huddlehub.co.uk)

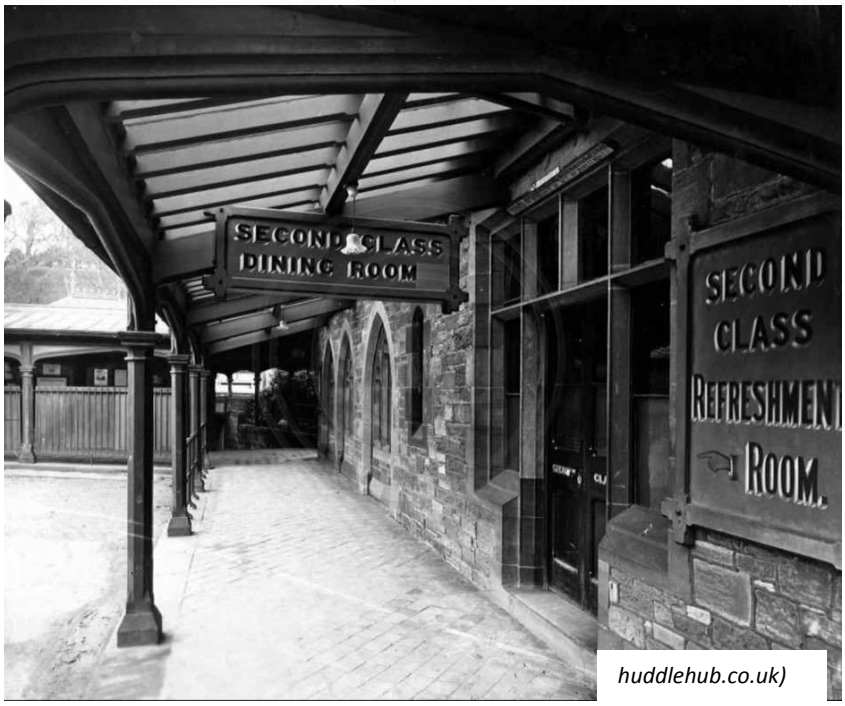
FURNESS ABBEY STATION, DOWN PLATFORM.

In 1953–54 the hotel was demolished. All that is left today is a boarded up former pubic house formed from the north wing.

Ramsden's house (Abbots Wood) was designed by the Lancaster architect E. G. Paley, and built between 1857 and 1859 for Sir James Ramsden After his death in 1896, the house and estate passed to his son, Frederick, who did not marry, and who died in 1941.

The house was used by the army during the World War II The manor's condition subsequently deteriorated, and it was demolished in 1961. Some of the estate buildings were left standing, including four lodges, the home farm, and cottages, all of which had been designed by the Lancaster practice of E G Paley.

The grounds of the estate are maintained as a Country Wildlife Site.



huddlehub.co.uk)

SUNDAY 28th APRIL – Haverthwaite-Lakeside-Bowness, Backbarrow & Lindale, Grange & Kents Bank Stations

Today we travel by train and steamer from Haverthwaite to Bowness, as did Edwardian tourists on the FR's Outer Circle Tour. We then look at the sites of Backbarrow Ironworks and Cotton Mill, returning back to the hotel via Grange-over-Sands and Kents Bank stations, the latter being where the Bay crossing from Hest Bank made land. We drive through Lindale to view the iron obelisk erected in memory of John 'Iron Mad' Wilkinson.

Lakeside Branch

In contrast to the Coniston branch, the branch to Lakeside was built with tourism in mind. Tourists using the Coniston branch faced an uphill walk from the lake back to the station.

The branch was opened by the FR in June 1869 from a junction with the Ulverston(e) to Carnforth line at Plumpton. A second junction, forming a 'Y', gave direct access to the branch to trains from the south. This was Leven Junction. The line basically followed the River Leven from these junctions to its outflow from Windermere. Built to take double track over its length, in practice this only went as far as Greenodd, with a passing loop at Haverthwaite station. Goods branches came off at Greenodd for the Furness Chemical Company, Dickson's' Sidings, for Black Beck Gunpowder Works and Haverthwaite for the goods yard and a narrow gauge tramway to Low Wood Gunpowder Works.

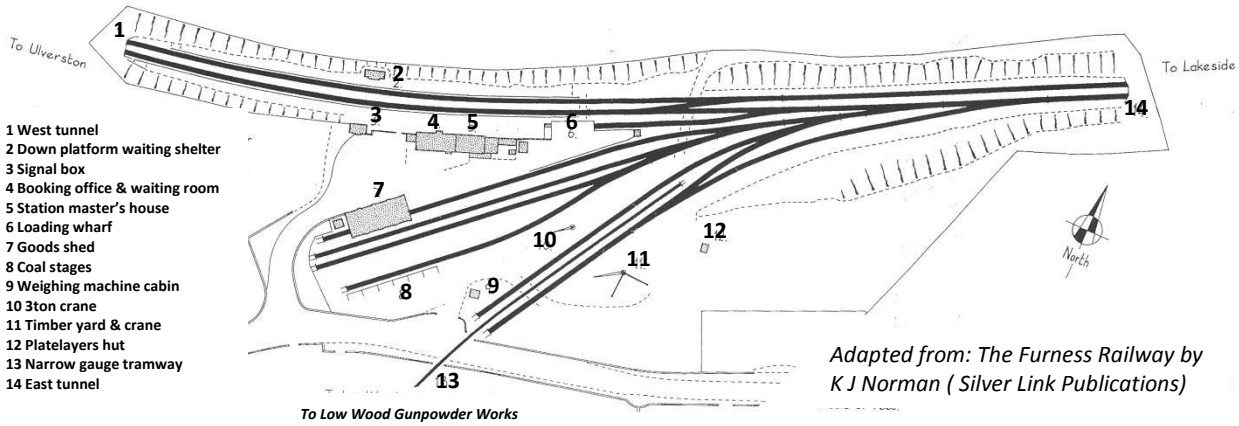
The line of approximately 8 miles was opened before the stations along the route were completed. The intermediate stations were Greenodd, Haverthwaite and Newby Bridge. Initially the railway finished here but when the terminus moved on to Lakeside, it allowed for the use of larger steamers. From the junction to Greenodd the route was very straight. There were two viaducts that crossed the river Leven, one at Greenodd and the other a little further up the river at Lady Syke. From here on the hills started to close in on the line. By the time Haverthwaite was reached it was in a noticeable valley before opening out just as the terminus at Lakeside was reached.

The main traffic into the branch line was tourists, together with the coal for the Windermere steamers they were attracted to, iron ore for the Backbarrow Ironworks and sulphur and saltpetre for the gunpowder works at Black Beck and Low Wood. Prior to this, goods had been transported by 'flatties' up the River Leven as far as the tidal limit close to Low Wood works; Black Beck supplies possibly going up Rusland Pool. Leaving the branch, the freight traffic consisted of pig iron, gunpowder, 'blue' products from the Backbarrow Mill and wooden bobbins from the Finsthwaite Area. With the complete purchase of the Windermere Steam Yacht in 1872, the Railway Company was in a position to focus its attention more on the tourist traffic to the Lake District. The Midland Railway, having direct access to Furness rails at Carnforth, also wanted to exploit this market.

By the turn of the century the tourist traffic had increased rapidly with good numbers of day trippers and people staying for longer periods. The peak came in the years just before World War I, before the era of the motor car.

There was a revival in tourist numbers during the immediate post-WWII years. Passenger services to Lakeside then declined and eventually ceased in 1965, although goods were carried to and from Backbarrow Ironworks until early 1967, when the ironworks closed and the twice weekly service to the works was no longer needed.

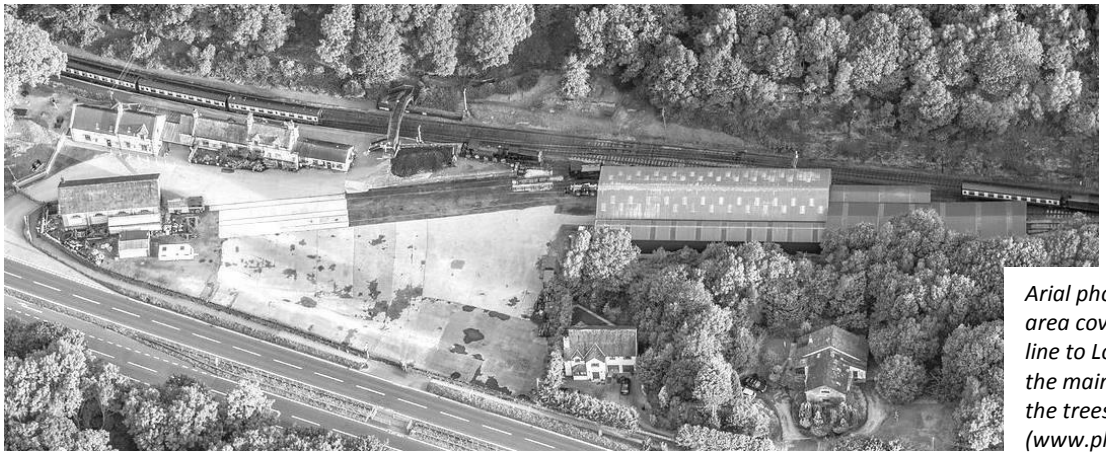
Haverthwaite Station



Adapted from: The Furness Railway by K J Norman (Silver Link Publications)

As can be seen in the plan above, there were plenty of sidings for the transhipment of goods that included access to two lines for the movement of gunpowder products. Coal stages and a timber yard had designated areas; the

timber yard had its own crane. The passenger service had a ticket office, waiting room and ample platform space on the south side with just a waiting shelter on the platform if travelling towards Newby Bridge and Lakeside. The narrow gauge connection to Low Wood can be at the bottom of the plan.



Arial photograph showing the area covered by the plan. The line to Low Wood ran across the main road and through the trees to the bottom left. (www.photonorth.uk/media/)

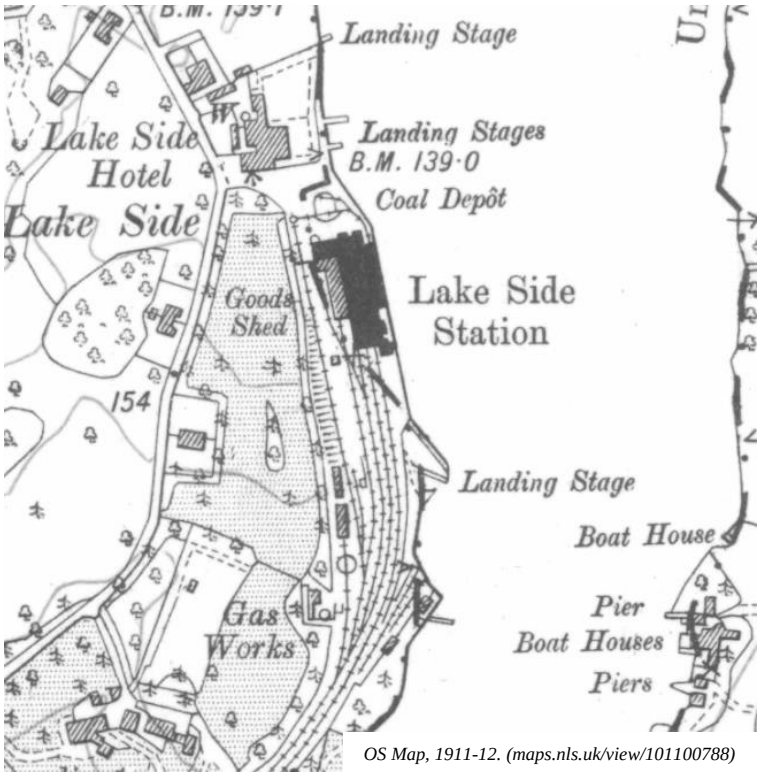
Low Wood Gunpowder Works

The tramway between Haverthwaite station sidings and the gunpowder works, with its tworeversals to reach the valley floor, are shown in this OS map of 1912 (see top right).

Peter Holmes writes:
This works was opened in 1799, and by the 1870s there was a horse-worked internal railway of 3ft 6in gauge. Application to the local authority for permission to install two level crossings was made in 10/1883. One of these was on the Haverthwaite to Newby Bridge road (now the A 590) where a steep and sharply curved extension of the internal railway gave access to the goods yard at Haverthwaite Station, by means of two reversals and a bridge across the River Leven. The second crossing was on the west side of the works, where the internal railway crossed the Haverthwaite to Cark road (now the B5278) to reach an isolated powder storage magazine at SD 342833. The works covered a large area, the convention being that the process buildings were well separated to avoid sympathetic explosions. A similar arrangement was found at the other gunpowder works in the area, Black Beck (in Furness) and Elterwater, Gatebeck and Sedgwick (all in Westmorland).

The office and workshop buildings of Low Wood were at SD 346837 while the station extension terminated at SD 350842. Production ceased in 5/1935 and the track was lifted a few years later. Five wagons survived until the 1970s, and two vans are now preserved at Haverthwaite Station of the Lakeside & Haverthwaite Railway.

Lakeside Station



OS Map, 1911-12. (maps.nls.uk/view/101100788)

Principal features of the station included:

- 2 platforms of 745 ft and 205 ft parallel to the 633 ft pier

- a long head-shunt to the north-west of the mainline that provided stabling for excursion traffic

- an extensive range of buildings at the end of the 206 ft train shed

- a "Palm Court" type restaurant and refreshment rooms

- a goods shed, a decorative water tower and a 42 ft turntable installed by Messrs. Westray & Foster of Barrow

- a single-road engine shed

- a narrow-gauge tramway across the front of the main station buildings to provide coal for the steamers from a standard gauge siding to the west of the station.

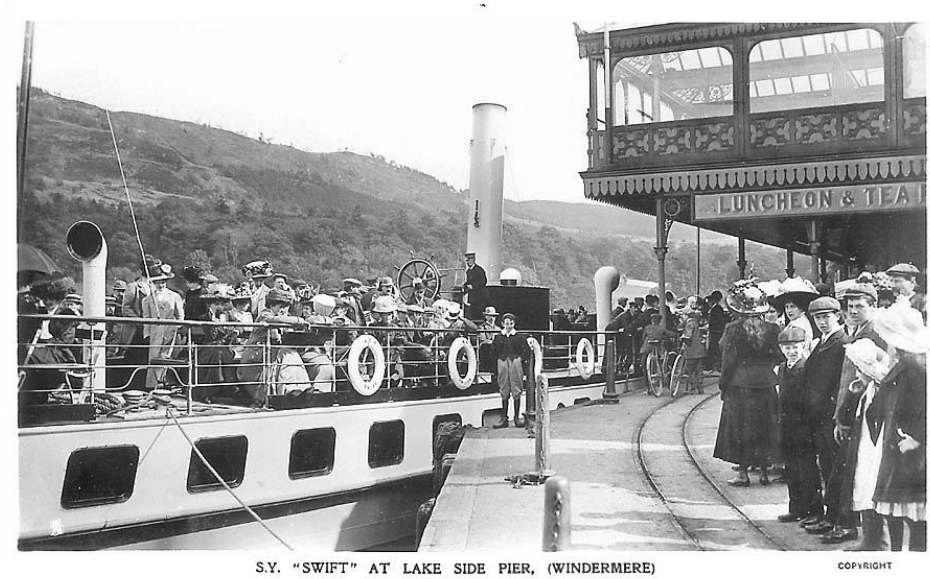
Approach to Lakeside station from the south, c.1957. The steamer quay is just visible to the right of the station building. (www.newtonabbotrailwaystudies.co.uk/portfolio)

The train shed, which had direct access to the steamer landing, housed two platforms served by three roads. There was also a goods shed, an engine shed with turntable, and a water tower. Officially described as an example of "the Italian style of architecture", Lakeside Station was a considerable visual display. It was later described by O.S. Nock as "a miniature edition of Fishguard Harbour or Harwich (Parkeston Quay)",

Lakeside Station; date unknown (RCHS Collection))

When it was first built, the station building, with its yellow bricks and black banding, was considered by many local residents as being too striking, in contrast to the grey Lakeland stone buildings nearby. Nevertheless, it was an imposing building.

With the combination of railway station and landing pier, passengers could walk easily from train to boat.



This postcard shows the narrow gauge tramway used for transporting coal to the steamers. Part of the "Palm Court" type restaurant is to the top right.

Before departing on a lake cruise, passengers could also take advantage of the refreshment pavilion. It was not always as extensive as shown here. Between 1st June and 17th August 1906, some 836 breakfasts, 4,305 lunches and 3,551 teas were served. The facility was extended for the 1907 season.

Some of the original ironwork remains in the current, 1906-sized, overhead refreshment room but the hanging baskets and the "Palm Court" musical ensembles are no more.

Swift-Tern-Raven at Lakeside Station (date unknown; but certainly pre-1927)

The peak periods for operations were during the Edwardian age prior to WW I and the inter-war years. There was a steady decline in passenger numbers after WWII but, given the popularity of the steamers today, one has to wonder whether closure was perhaps somewhat premature.

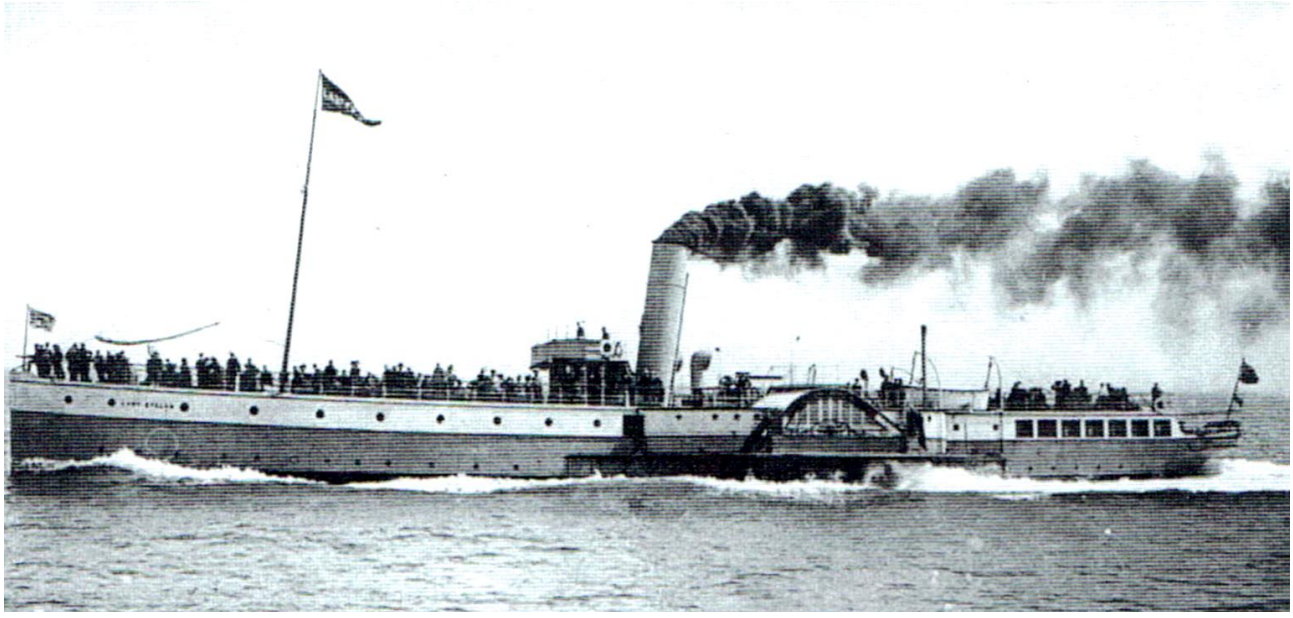
Passenger facilities closed in September 1965 and freight services ceased with the line closure in April 1967. The last "service" to travel to Lakeside was an SLS brake-van special on 2nd September 1967.

The southern end of the line was lost to trunk road improvements but, fortunately, the 3 miles section of the line between Haverthwaite and Lakeside was bought and restored, with the first train of the Lakeside and Haverthwaite Railway leaving Lakeside running in May 1973. .

Regrettably in the intervening years most of the station buildings and the train shed at Lakeside had been demolished. The station building was declared unsafe because of dry rot and was lost only a few months before the L&HR acquisition. However, trains still run in conjunction with Windermere steamers, thus re-creating and continuing a tradition dating back 150 years: the sesquicentenary of the line and Lakeside station opening being 1st June 2019.

Windermere and Morecambe Bay Steamers

Many passengers travelling on the steamer service between Lakeside, Bowness and Ambleside would start their journey (often Blackpool holidaymakers on a day trip) with a crossing from Fleetwood to Piel or, after 1882, to Barrow. The journey would than continue, by train, to Lakeside where the Windermere steamers would be waiting.



The paddle steamer 'Lady Evelyn' on a cross-Bay service between Barrow and Blackpool: a service inaugurated in 1900. (CRA M10310)

At the time of the opening of the Oxenholme-Windermere section of the proposed Kendal & Windermere Railway in 1847, three small paddle steamers were being operated by the Windermere United Steam Yacht Company from a small jetty on the River Leven at Newby Bridge. One was unique in that it was double ended and could operate in and out of the narrow river without having to turn around. When the FR decided to build its new deep-water jetty, combined with a railway station, at Lakeside there was already a growing passenger trade being generated by railway at Windermere. The building of new larger steamers became imperative and a series of screw-propelled craft were ordered. 'Swan', the first of these, was also the last steamer to be ordered by the Windermere United Steam Yacht Company. She was 147 ft long and 17 in the beam and could carry 450 passengers in two classes – both with adequate cabin accommodation in the event of inclement weather. Transported in sections from the builders yard (T B Sleath of Rutherglen) to be assembled at Lakeside, *Swan* was launched four days after the opening of the branch on 5th June 1869. She was replaced in 1938 by a new diesel-powered vessel of the same name built in steel by Vickers Armstrong in Barrow, as were the two (virtually identical) vessels, *Teal* and *Cygnet*, built in 1879 to replace the earlier small steamers that had started the passenger craft operations from Newby Bridge.

The fleet of *Swan* (1869) and *Teal & Cygnet* (1879) was added to by *Tern* in 1891. Apart from a distinctive canoe-shaped bow, *Tern* was similar in appearance, albeit a little larger, to *Teal* & *Cygnet.* It was decided, in 1899, that an additional steamer was required. This fifth craft (*Swift*) was to be built on the same lines as *Tern* but with 5ft of additional length and 2ft of additional beam, the latter to provide space for the increasing bicycle traffic. However,

when ordered, she was completely different from the other vessels in that she had a through deck from bow to stern with a saloon below. All the others had well decks forward and aft with a saloon amidships.
Shortly after WWI, both *Teal* and *Cygnet* failed to meet Board of Trade requirements, their hulls were strengthened. *Teal* carried on working on Windermere but only until 1927 when she was scrapped. A new *Teal* (diesel-engined) was built in sections by Vickers and launched at Lakeside in 1936. She is still in service. *Cygnet* had a new Parsons internal combustion engine fitted in 1924 sailed on until 1953, when she passed into private ownership, but sank in 1962 and was declared a total constructive loss. Both *Swift* and *Tern* could not resume sailings after 1945 due to coal shortages, leaving only the oil-burners, *Swan, Teal* and *Cygnet* operational. *Swift* and *Tern* were converted to diesel in 1958. *Swift* was withdrawn in 1984.

Three of the oil-burners, *Swan, Teal* and *Tern* are operational today.

***Top**: Tern (built as a steamer in 1891; modified in 1958 & 1990. Now near to its original 1891 appearance converted to diesel power in 1958. Note the distinctive canoe-shaped bow*

***Centre**: Swan (the second vessel with this name; built, diesel powered, in 1938)*

***Bottom**: Teal (the second vessel with this name; built, diesel powered, in 1936)*

For further details, including motive power and passenger capacities see www.windermere-lakecruises.co.uk/

Bowness & Pier

Bowness is an intermediate stop for the steamers. Though the immediate surrounding area is different, the pier buildings today have changed very little from the picture below.

The lake steamers operated throughout the year to provide a service to local inhabitants up to the winter season of 1919-20 when services were withdrawn due to the mounting deficit from the service. To alleviate hardship to lakeside dwellers, the FR negotiated with the Lake District Road Traffic Company and the British Automobile Traction Company for a substitute road service to be initiated. Like other railway companies, the FR purchased and operated its own motor bus service, purchasing a Ford motor omnibus at a cost of £370. The service made a loss, but one significantly less than with the lake steamer service. As shown below (photograph from early BR days) the reduced cost and associated benefit of motor transport made itself felt on operations around the pier.

Bowness Pier in BR days

So the fortunes of the Windermere steamers have been very much dependent on the transport arrangements to bring visitors to the Lake District supplemented by a number of social changes. In the late Victorian Years numbers grew, but, as years went by, with the benefit of increasing prosperity, including paid holiday arrangements, more and more people were able to travel by rail, and sometimes coastal steamer. Thus day-trippers became the life-blood of the Windermere steamers and as a consequence the railway lines to Lakeside and Windermere as well, with the heyday being from 1900 - 1939. From the 1950's this continued in regard to the steamers, but travelling to the Lake District, for the majority, gradually changed from rail to the motor car and motor coach.

Lakeside Station Signal Box (RCHS Collection)

BLACKPOOL and the Lakes.

The Popular Paddle Steamers
'Lady Evelyn' or 'Lady Moyra'
SAIL BETWEEN
FLEETWOOD and BARROW
DAILY (including SUNDAYS)
from Whitsuntide until the end of September
IN CONNECTION WITH
Circular Tours & Day Trips to Lakeland.
Steamer Fares—Barrow (Ramsden Dock) & Fleetwood
SALOON: Single 2/6, Day Return 3/6.
FORE CABIN: Single 1/6, Day Return 2/6.

THE OUTER CIRCULAR TOUR

Embracing FurnessAbbey, Windermere Lake and Coniston.

From	1st	3rd
BLACKPOOL	12/-	8/-
FLEETWOOD	10/6	7/3

THE INNER CIRCULAR TOUR

Embracing FurnessAbbey The Crake Valley and Coniston Lake.

From	1st	3rd
BLACKPOOL	9/6	6/-
FLEETWOOD	8/-	5/3

For further information respecting the sailings of the Steamers, apply to Mr. A. A. Haynes, Superintendent of the Line, Barrow, or at all Furness Railway Stations; also at Messrs. Thos. Cook & Son's Offices and Agencies at Barrow, Blackpool, Fle Bolton Burnley, Oldham, Rochdale, and

Geoff Holme Collection

Grange-over-Sands Station

Before the arrival of the Ulverstone and Lancaster (U&LR) railway in 1857, this popular seaside town had been a small fishing village situated on the north coast of Morecambe Bay. Initially Grange was regarded by the railway as being of little importance. The original station (opened with the line in 1857) was very basic and limited to a 24ft x 9ft size wooden hut. This situation changed after January 1862 when the U&LR was taken over by its northern neighbour, the Furness Railway (FR). Local entrepreneurs James Ramsden and Alexander Brogden who both had connections with the FR soon recognized the potential for transforming Grange from a village into a seaside resort, designed to attract tourists, who would be able to travel there by FR trains or in excursion trains from elsewhere using the FR's lines. When the FR directors were alerted to the potential of an increase in the company's passenger carrying business they took the decision to build a new and larger station at Grange. Edward G. Paley (1823–1895), a Lancaster architect, was engaged to design the new station. Also, in 1863, Ramsden and Brogden set up the Grange Hotel Company Ltd, which promoted the building of a large hotel, overlooking the station and again Edward Paley was engaged to provide the design. The hotel opened for custom in 1866. The new station had opened in 1865 and during that period the FR had built nearby, a large park including ornamental gardens and a lake. Also, on the seaward side of the railway embankment, the FR built a public promenade. At a later date they created subways to provide access to the shore. The FR was also indirectly involved in providing finance for the construction of a gas works and mains water supply for the burgeoning resort town. A goods yard and sidings were built to the east of the station on the north side of the east bound line (direction towards Carnforth). The yard included a goods shed, carriage shed and stables.

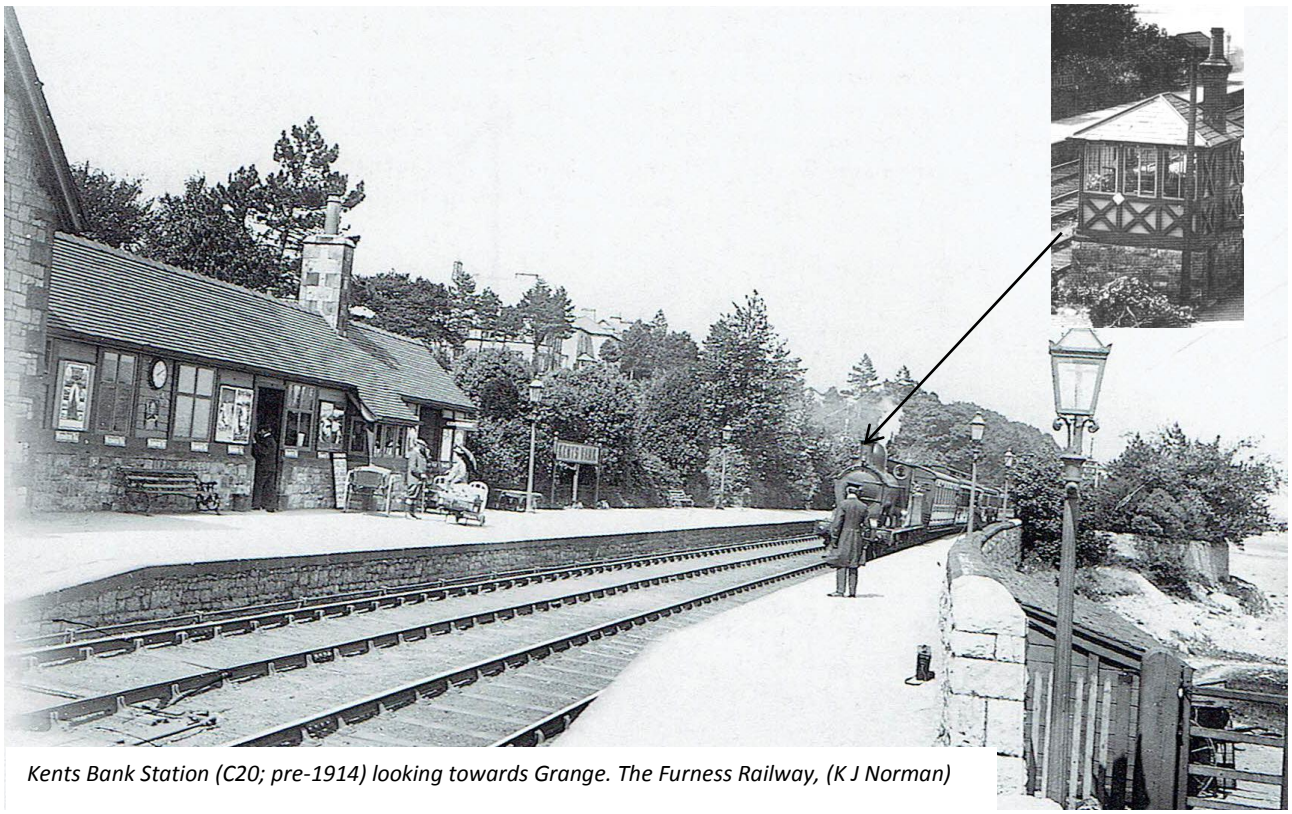
Grange-over- Sands Station in the 1880s. The Station Master with his staff, three platelayers and a few friends pose for the photographer. (Grange over Sands Photographic Society)

Grange Station is undoubtedly an architectural gem. The main building is in an attractive Italianate design. Built from local limestone; its two outer bays are two storey; the centre bay is single storey. There are a series of hipped roofs and glass & iron awnings to provide protection from the weather. The iron work is are adorned with floral motifs The booking office, waiting rooms and station masters house are situated on the up side of the line. The north side building (direction towards Barrow) has a screen wall with complementary glass and iron awnings. The Grange Hotel is built to the same Italianate style. Both station and hotel are Grade II Listed Buildings. The station was restored in 1997 and is in a conservation area.

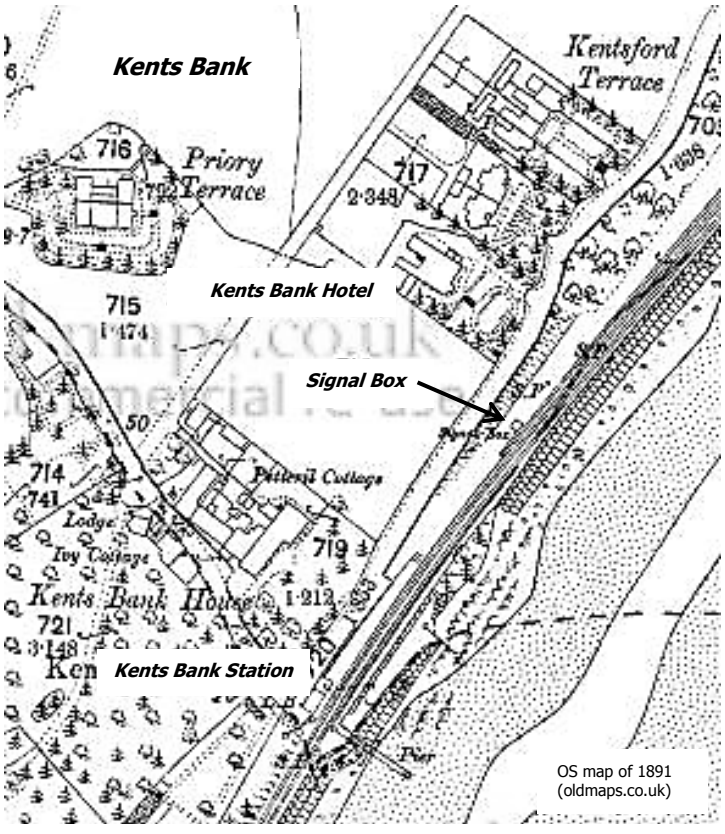
Kents Bank

The hamlet of Kents Bank originated at the starting point of the route east across the sands of Morecambe Bay to Hest Bank which, until the opening of the U&LR in 1857, had been the most important route between the Furness peninsula and the rest of Lancashire since monastic times.

Kents Bank station was opened, with the Ulverstone & Lancaster Railway, in 1857.



Kents Bank Station (C20; pre-1914) looking towards Grange. The Furness Railway, (K J Norman)



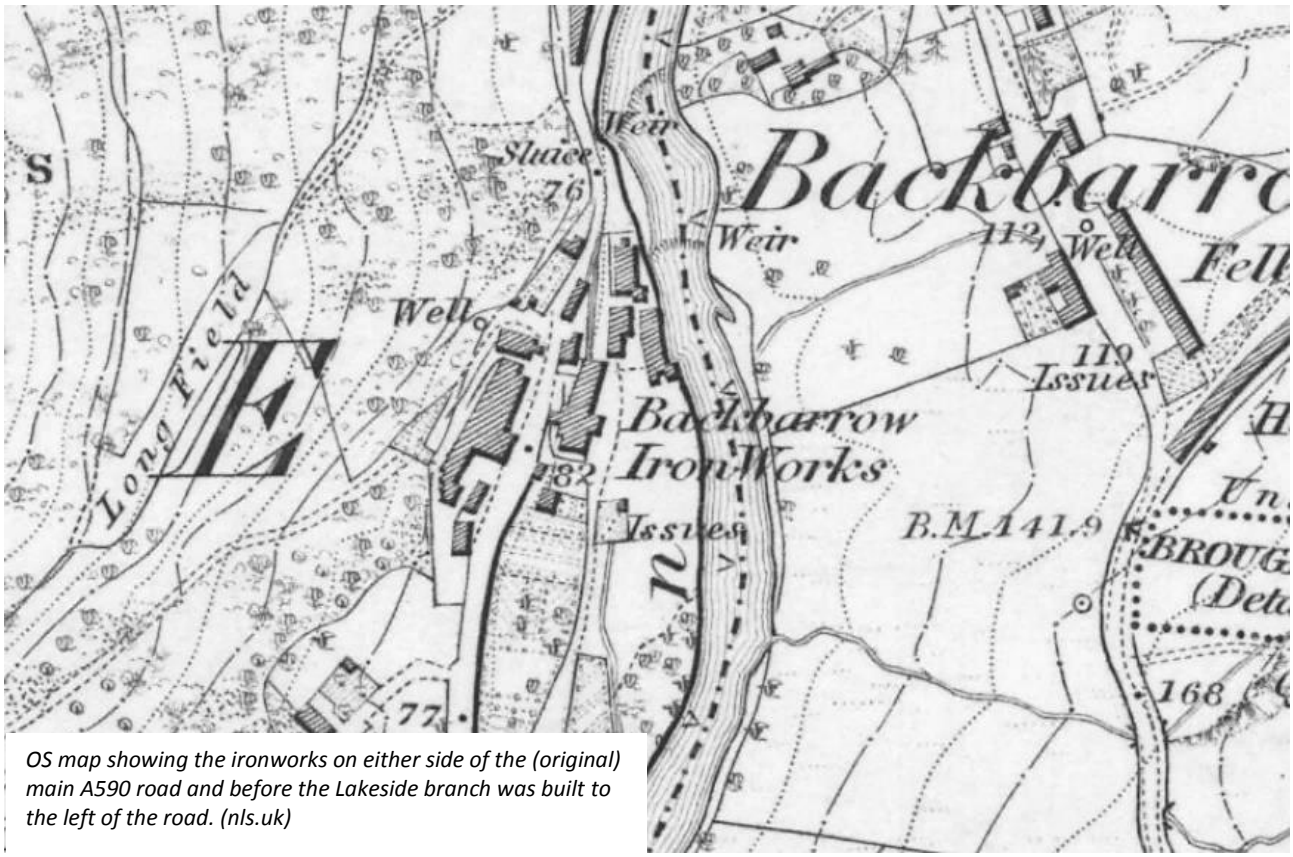
OS map of 1891 (oldmaps.co.uk)

The train, with a clerestory coach, is behind a 0-6-0 locomotive designed by William Pettigrew, the FR Locomotive & Carriage Superintendent. The gabled stone building (just in view to left) is the station house dating from Ulverstone & Lancaster days. The stone and wooden extension, containing a waiting rooms and toilets, was added by the FR in the 1890s. These station buildings are extant.
The signal box (inset) was at the eastern end of the east bound platform (obscured by the locomotive in the main picture) and is a typical example of a FR country station signal box.

Prior to the arrival of the railway in 1857, Kents Bank consisted of a cottage and an inn (to the NW of the station - marked as Petteril Cottage & Kents Bank House on the 1891 OS map. The inn would have served travellers arriving from Hest Bank via the Oversands road (dashed line on map). The arrival point is adjacent to the small trees to the right of the above picture and is accessed through the gate at the end of the west bound platform.

By 1891, the inn had closed, several new cottages built (to both the NW & NE of the station) along with Kents Bank Hotel to the NE.

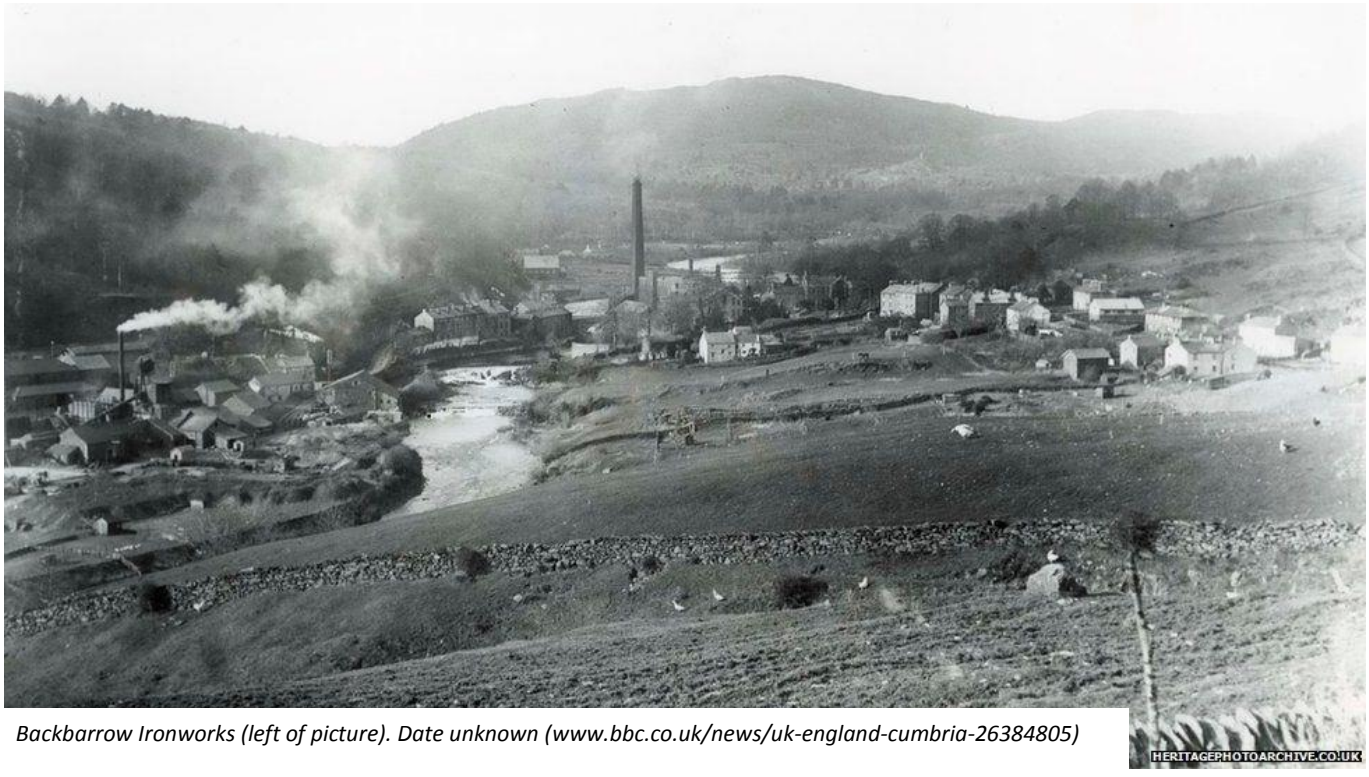
Backbarrow Ironworks



OS map showing the ironworks on either side of the (original) main A590 road and before the Lakeside branch was built to the left of the road. (nls.uk)

The ironworks is thought to be one of the oldest continuously worked ironmaking sites in Britain.

The surviving structures of Backbarrow Ironworks in South Lakeland have been described by Historic England as "the best illustration nationally of iron-smelting technology development from the early C18 to the C20". The site has featured on the Heritage at Risk register for many years, and there have been a number of previous attempts to "save" it without success. Until now that is. It would be useful to look at the history of the site.



Backbarrow Ironworks (left of picture). Date unknown (www.bbc.co.uk/news/uk-england-cumbria-26384805)

There was a weir and bloomery forge here around 1685.

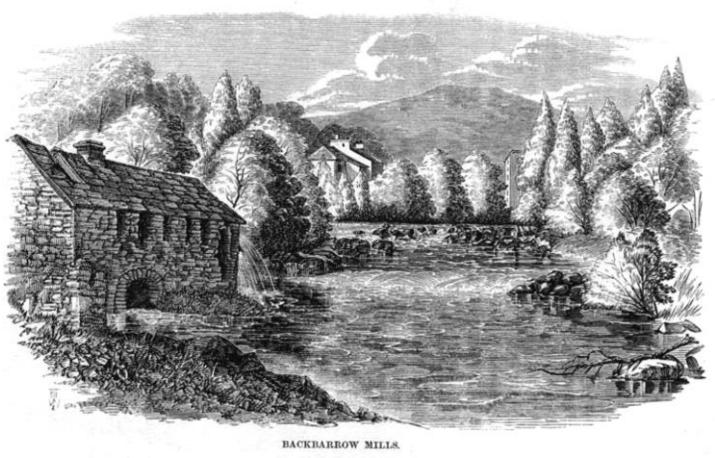
The UK's first blast furnace was built in 1711 at Backbarrow by Isaac Wilkinson and developed by his son John Wilkinson. This furnace was fuelled by charcoal; hence the huge amount of coppicing locally. In 1870 the original charcoal furnace was in operation with a waterwheel driving iron bellows.

Backbarrow ironworks was in operation for more than 250 years. Some of the products of the ironworks were gun carriages, cannon and cannon balls. Iron ore from Low Furness would arrive at the quays in Haverthwaite and then be transported to Backbarrow by horse and cart. When work ceased in 1967 it fell into disrepair. The old furnace is believed to be the only remaining example of its type.

Under the supervision of Historic England work is underway to conserve the remains of the scheduled ancient monument – which include the furnace stack, hot air stoves and blowing engine – alongside work to develop the rest of the site for housing. Potentially dangerous sections have been fenced so, for example, no-one can wander inside the furnace stack. The Backbarrow Ironworks Heritage Trust has been established to take over responsibility for the ironworks once development of the whole site is complete in 2019. Until then there is no public access to it.

Backbarrow Cotton Mill

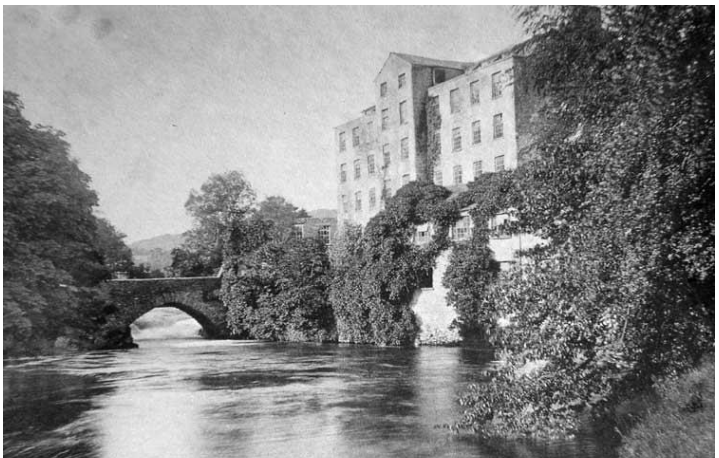
The location of the mill had been an important industrial site for several hundred years, using water power from the river Leven. The monks of Cartmel Priory established a corn mill on the site around 1565 and later there was a fulling (a process to clean woollen cloth) mill and a paper mill. These both closed once the cotton mill opened.


BACKBARROW MILLS.

The cotton mill in Backbarrow was established in 1782. It was owned by Birch, Robinson and Walmsley from 1790 to 1812 and then by Ainsworth, Catterall and Co until 1837 when it was taken over by Thomas and W Ainsworth.

A bill of sale in 1807 described the site as having three mills, four storeys high, and one mill two storeys high, together with three water wheels and associated mill gear. There were workshops for joiners, clocksmiths (who used their skills to repair the textile machines), blacksmiths, offices and a manager's house. There were 80 houses for other workers. These were said to be comfortable, substantial buildings.

Sketch of Mill and Plan of Mill Houses

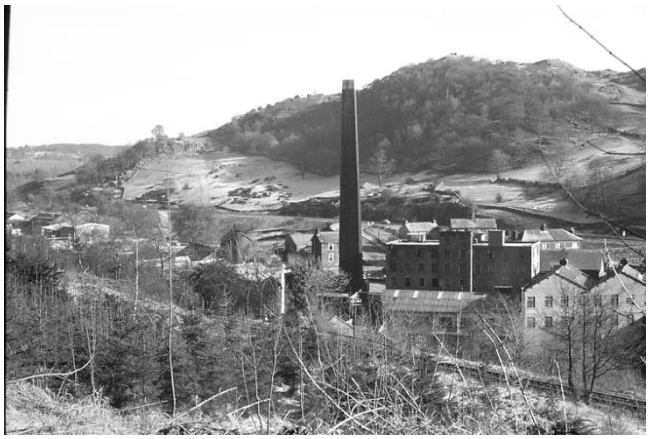


Backbarrow Mill, 1870s (http://www.cumbria-industries.org.uk/ .

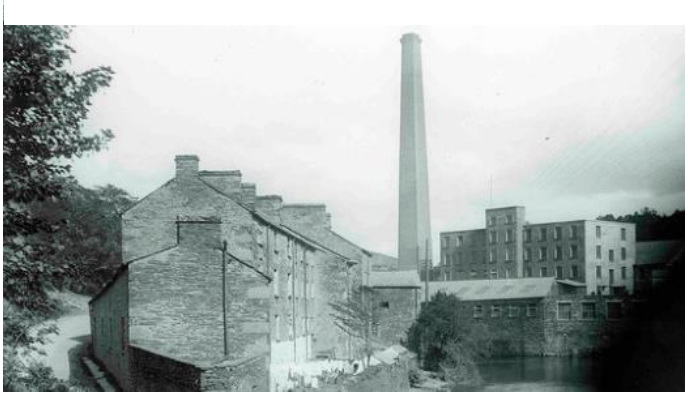
Just ten years later, the mill had become notorious for the ill- treatment of children. In 1805 there were 140 apprentices and in 1814 there were 111. A parliamentary commission was set up in 1816 to inquire into conditions under which apprentices lived and worked. By that time, the apprentice accommodation at Backbarrow housed up to 200 children.

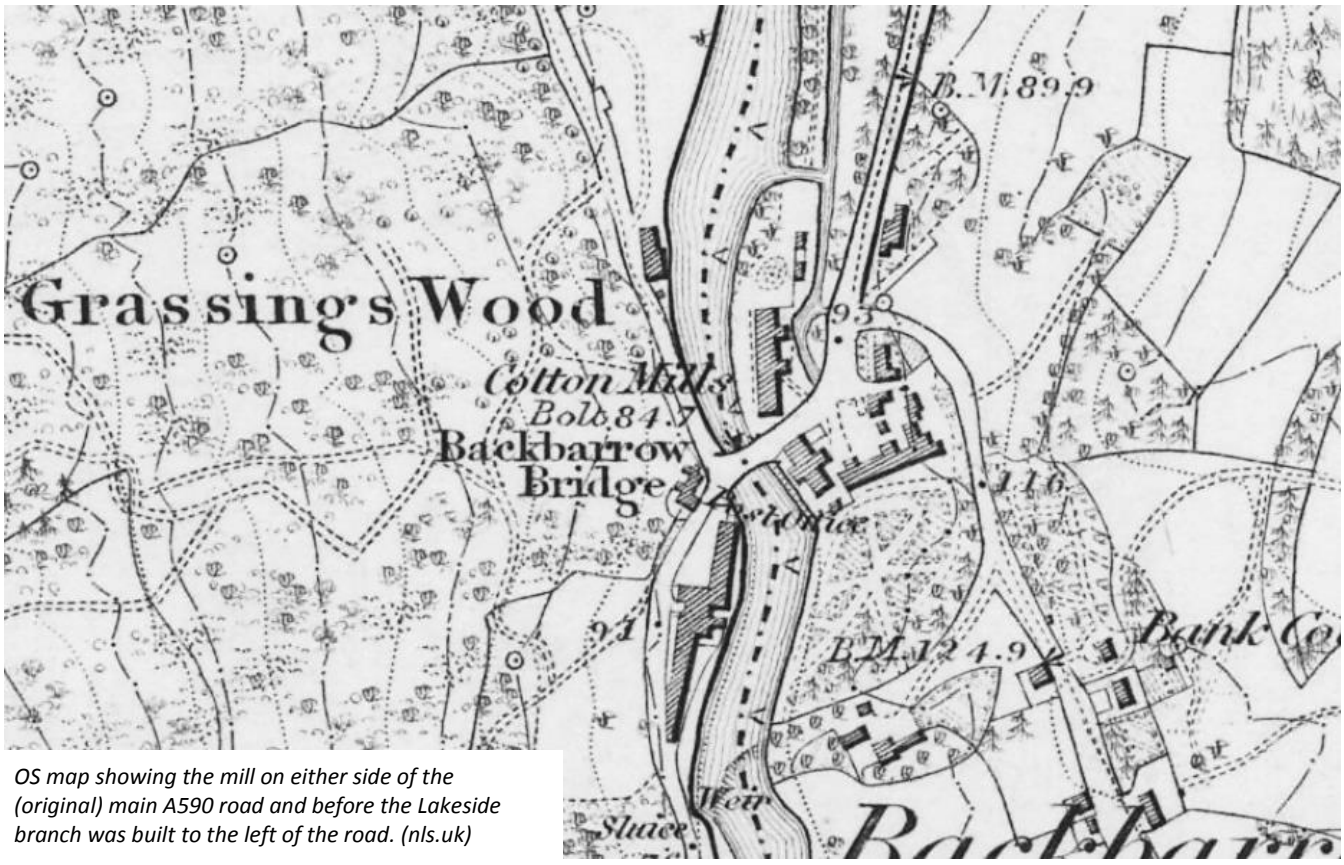
The apprentices, aged between seven and eleven years, were orphans from Liverpool, Whitechapel and Brighton. When the water levels were low, the children had to turn the water wheels by hand. Also at times when the river was low a night shift was introduced. On Sundays, their only day off, the children had to walk two miles, to go to church at Finsthwaite. Sometimes when the mill was short of money or when the river was low, the apprentices were laid off and had to beg for food. They were little better off when there was work. They worked a six day week, from 5am to 8pm and had just one hour off for all meals. There were no seats in the mill building. At the parliamentary enquiry it was admitted in evidence that several of the children had become crippled as a result of their work and most were forced to beg at times when work was slack.

A disastrous fire gutted the Ainsworth's cotton mill in 1868. Although the cotton mill was refitted with new machinery it was never reopened, the company having enough spare capacity in its other mills in Lancashire. In 1880, a woollen mill was in production in one of the former cotton mills, but that soon closed too, when its owners found they could make enough cloth elsewhere.



Views of the Mill in the 1970's





OS map showing the mill on either side of the (original) main A590 road and before the Lakeside branch was built to the left of the road. (nls.uk)

By 1890, two mills remained on the site and were acquired by the British Ultramarine Company to manufacture ultramarine blue, lime blue, wash blue paste, red iron oxide and Prussian blue. These pigments were exported across the British Empire.
Reckitt's took over the mill in 1928 and began production of the famous 'Dolly Blue', used as a laundry whitening agent. The introduction of domestic washing machines and a new range of detergents, significantly reduced demand for 'Dolly Blue' and the mill was finally closed in 1981.

The site is now the Whitewater Hotel and timeshare complex. A display of machinery used in the old factory is maintained by the hotel's proprietors.

John Wilkinson Monument, Lindale

John Wilkinson was born in 1728 and was known in later life as 'Iron Mad' Wilkinson. He lived in the village of Lindale near Grange-over-Sands. During his early years he helped at his father's furnaces in Lindale and Backbarrow. As a young man, Wilkinson had grand ideas which required bigger and stronger furnaces and he started his own businesses in the West Midlands.

At the crossroads on the road to Grange-over-Sands stands an iron monument erected to the memory of its most famous son. The 40 foot obelisk, which weighs twenty tons, is one of the country's most curious of ancient monuments.

Wilkinson built the world's first iron barge in 1787 and was also instrumental in the building of the famous iron bridge over the River Severn at Coalbrookdale. The bridge was notable as it used joints, pegs and keys in place of nuts, bolts and screws.

John, 'Iron Mad', Wilkinson had iron coffins at his two homes. At Castlehead, an iron coffin was ready to receive the corpse, but the coffin was too small to take both the body and its leaden and wooden shrouds.

Hastily, a message was sent to Bradley ironworks to construct a larger coffin and this was shipped, together with the 20 ton iron memorial obelisk and a massive iron plinth upon which to place it, by boat to the port of Ulverston.

In 1828 plans were made to sell the Castlehead Estate. The vendors thought that his tomb, which was visible from the mansion windows, would deter prospective buyers, so the memorial obelisk was thrown into the shrubbery where it lay and rusted until 1863. At dead of night, workmen dug up his iron coffin and moved it to St Paul's Church, Lindale-in-Cartmel where it was buried in consecrated ground.

In 1863, a new owner of Castlehead called Earnest Mucklow retrieved the obelisk from the shrubbery and had it transported to the village, Lindale, and erected beside the coach road where it remained for many years. Slowly, it fell into disrepair until it was rescued from a scrap metal merchant in the 1980s. After an appeal for funds by Upper Allithwaite Parish Council, the obelisk and its plinth were dismantled and carried to Buxton where the obelisk was refurbished by Dorothea Restoration Engineers, Ltd. The plinth was beyond repair and was replaced by Thomas Armstrong of Cockermouth. The memorial was re-established at Lindale in October 1984, with enough funds left to pay for maintenance, where it stands now in a little garden for the public to see. An interpretive board explains Wilkinson's life.

MONDAY 29th APRIL – Arnside, Kent Viaduct, Tewitfield Locks & Carnforth

Arnside Station

Arnside station was opened in August 1858 (some 12 months after the opening of the line for passengers) following agreement with the Admiralty not to build the previously agreed moveable opening on the Kent viaduct. A further condition, agreed with the Kendal Chamber of Commerce in 1859, was that a wharf (extant) and a road to Sandside were built. By this time there was little river traffic to the port of Milnthorpe. Interestingly, the opening span on the Leven viaduct was closed in 1866.

In 1857 Arnside was a tiny fishing village of approx. 20 dwellings, including a pub. It was developed by the FR and became a thriving holiday resort.

Arnside station looking towards the Kent viaduct. The iron footbridge was constructed in 1910 following complaints from the local vicar. He was concerned about the danger to passengers having to cross the main line by means of a level crossing when travelling to Carnforth or using the branch line to Hincaster (& Kendal), which operated from a platform behind the up platform building shown here. This 1914 building served both the line to Carnforth and the branch to Hincaster. (http://chris-upson.com/photos/ArnsideKnott/Station.jpg).

Kent Viaduct

The viaduct over the River Kent is to the west of Arnside station. The first viaduct was built between October 1856 and July 1857. It was rebuilt in 1915. (See below for the history of the Kent and Leven viaducts).

The Kent and Leven Viaducts

The first use of jetted piles in the British Isles was for the construction of two major railway viaducts across river estuaries joining Morecambe Bay, for the U&LR. One of these is Kent Viaduct over the River Kent estuary built between October 1856 & July 1857. The second is the Leven Viaduct near Ulverston, built between April 1856 & June 1857. Both consist of a large number of short spans between cast iron columns.

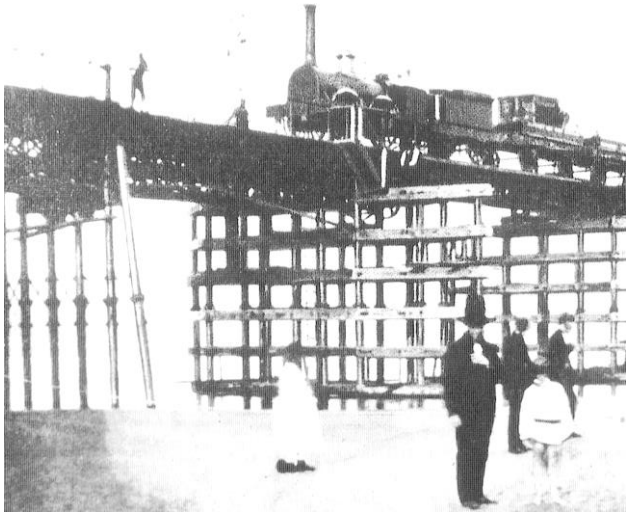
Kent Viaduct's 50 and the Leven's 48 spans are 30ft centre to centre. The supporting 10in diameter columns are grouped: some raking, some vertical. All are founded on tubular cast iron piles with large discs at their bases, jetted into position through the sand and silt sea bed and filled with concrete. The Leven Viaduct has 48 spans. The Kent and Leven viaducts are 1658ft and 1575ft long respectively.

The jetting method of sinking piles was used in the construction of both viaducts as a pile hammer was found to be impractical on the sandy ground. Air or water (or both) was used under pressure to help the driving process.

Initially, there was a single railway track and each column group consisted of three vertical and one raking column. The doubling of the track in 1863 meant the widening of the viaduct. This brought the addition of another vertical and another raking column to each group.

The Leven Viaduct originally had telescopic opening spans, 36ft wide. The tracks were set at a height of 26ft above water level. The viaducts originally had one wrought iron lattice girder spanning longitudinally under each running rail. These were replaced between 1885 and 1887 and some spans were altered.
By 1915, the cast iron columns had deteriorated to such an extent that it was decided to encase them in brickwork and concrete. This work was done to both viaducts.

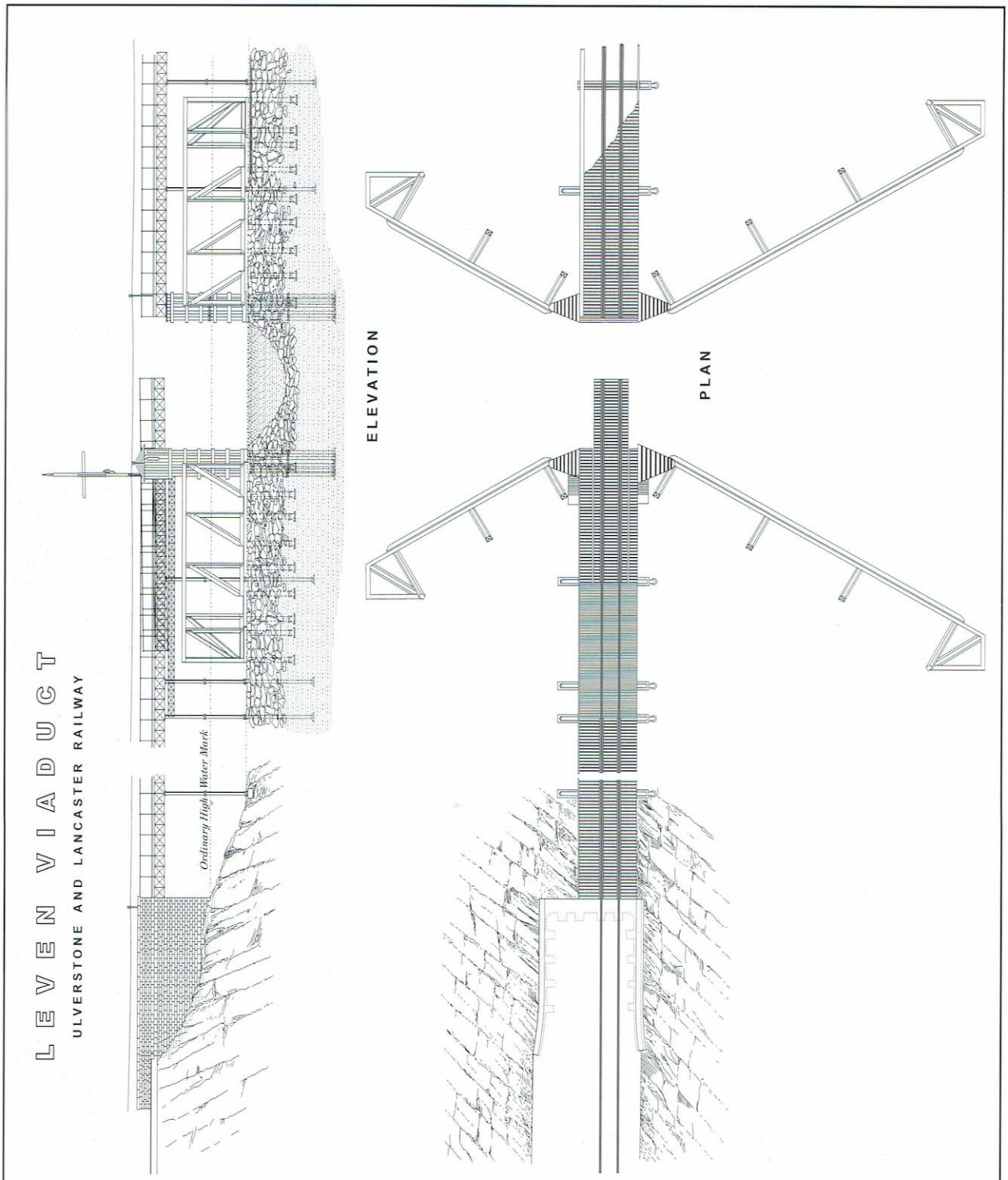
Above: *The Kent Viaduct looking towards Arnside, c 1890.The photograph shows just how slender and delicate the Kent and Leven viaducts were. (The Ulverstone and Lancaster Railway, Leslie R Gilpin (Cumbrian Railways Association, 2008)*



Left: *The Leven Viaduct, July 1857. A test train of U&LR iron ore wagons, hauled by one of John Brogden & Sons' locomotives, stands on the sliding bridge: possibly the first train to cross the viaduct. (Peter Robinson Collection)*
The locomotive is believed to be the former East Lancs Rlwy 0-4-2 Scarborough. *The gentleman in the tall hat is believed to be John Galloway.*

An opening section was not built on the Kent Viaduct, although it was in the original plans. Objections from the Kendal Chamber of Commerce and the Admiralty (who had changed their mind) who both insisted that it be built, were overcome with the U&LR agreeing to build a wharf at Arnside and a road along the shore to Sandside.

The opening on the Leven Viaduct was closed in 1869 following the FR 1866 agreement to build a rail connection between the canal basin and the main line and to convey traffic from the basin to Greenodd at special rates.



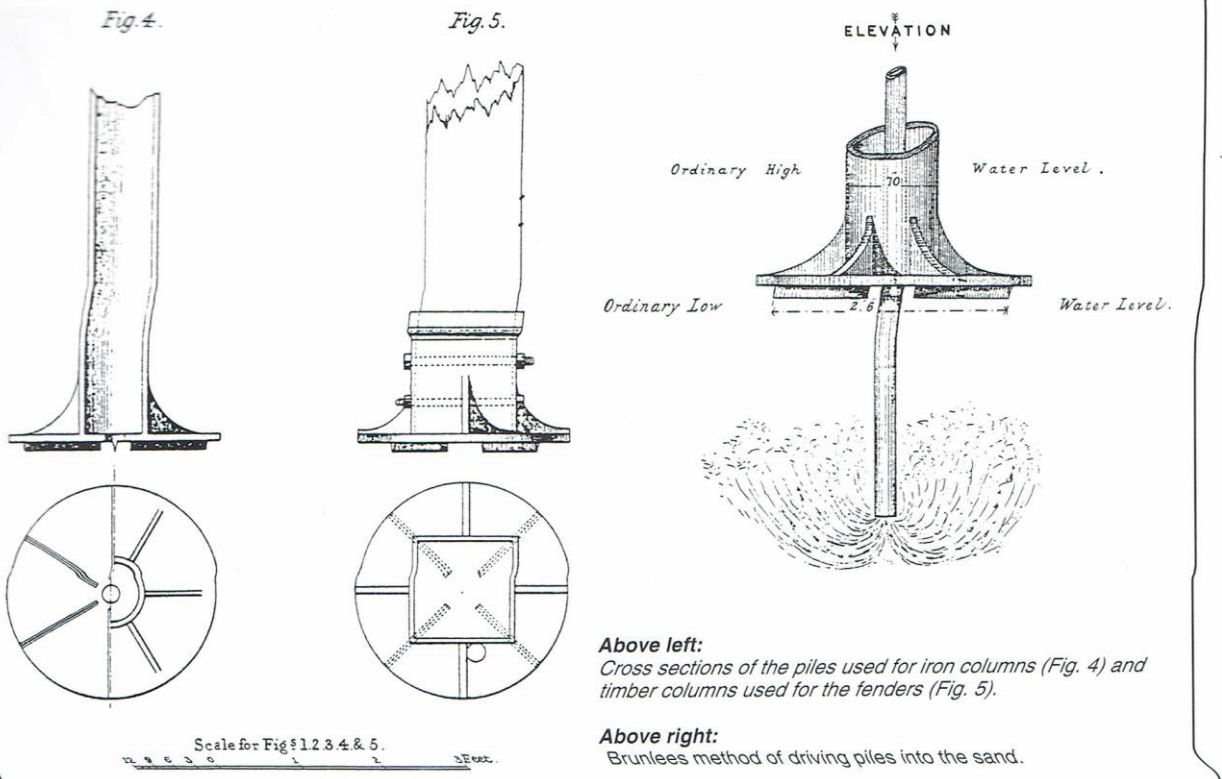
Associated engineer: Sir James William Brunlees
Main original contractors - Kent Viaduct: James Featherstone; Leven Viaduct: W. & J. Galloway

The Kent and Leven viaducts of the U&LR *were admired by the engineering world of the time and drawings of them appeared in various publications. This contemporary plan and elevation show the arrangement of the opening span of the Leven viaduct. The fenders either side of the navigation channel are shown as built. The company had, however, originally agreed with the Admiralty that the fenders would run the full length of the seaward side of the viaduct.*

(Drawing by Alan Johnstone based on details from The Engineer*)*

In 2006, the Leven Viaduct was the setting for a pioneering use of robotic fabrication. The deck needed replacing and this new method cut construction time from two seasons to one. Two specially designed gantries simultaneously lifted out both old tracks, and then lifted in the new steel one, which had been fabricated using off-site robotic welding techniques.

The project team was awarded the Institution of Civil Engineers North West Merit Award for 2007 for their work as it "epitomises the spirit of innovation".

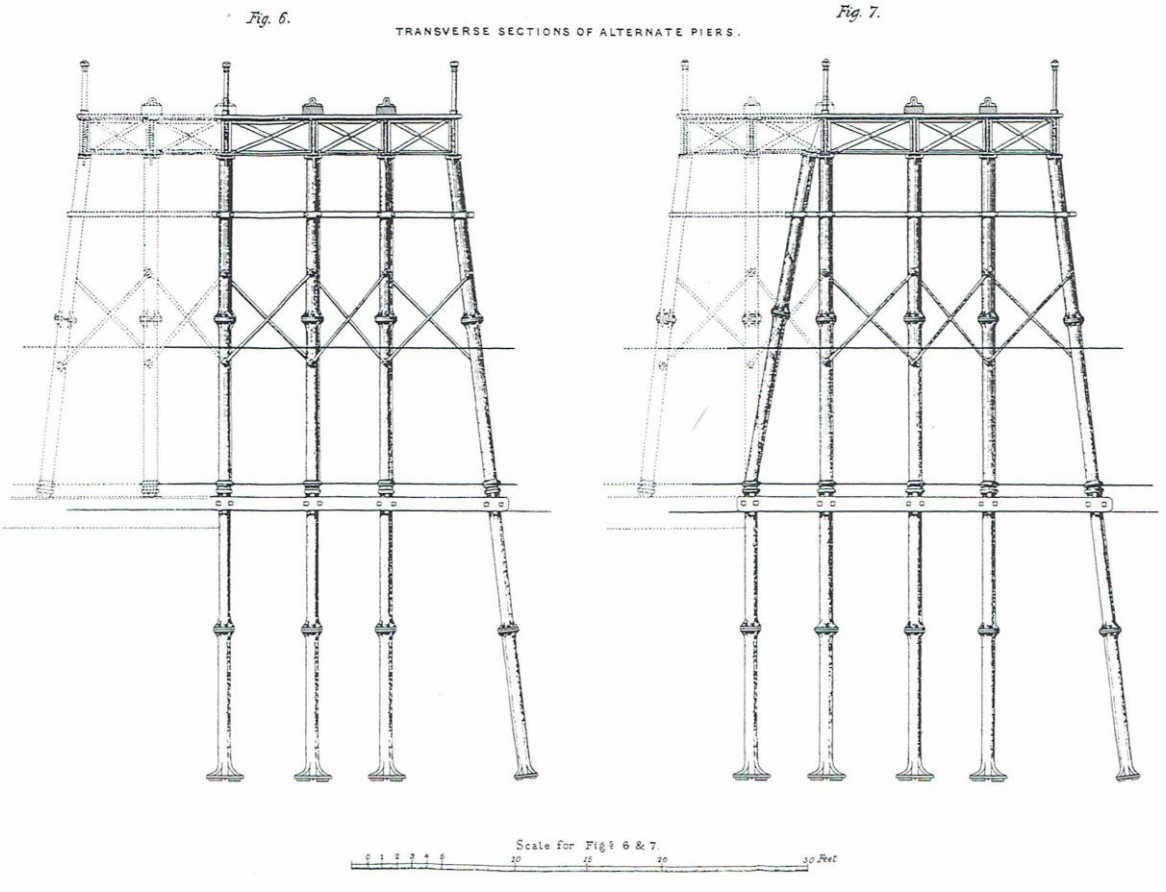


Above left:
Cross sections of the piles used for iron columns (Fig. 4) and timber columns used for the fenders (Fig. 5).

Above right:
Brunlees method of driving piles into the sand.

Below:
The viaduct piers as built, indicating how they would be extended for doubling the line. (Figs. 6 & 7).

(All from The Engineer*)*

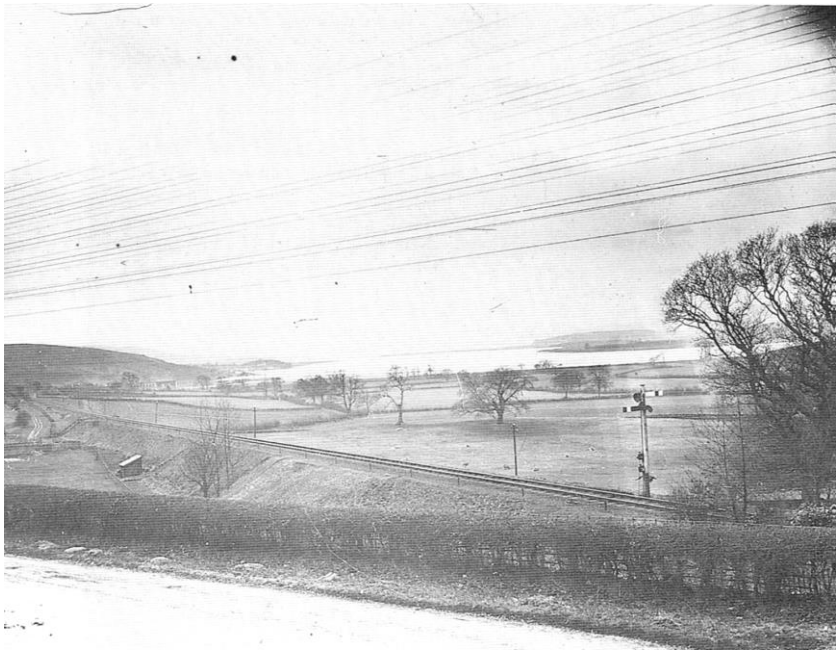


Kendal Branch (Arnside to Hincaster)

The 5-miles long branch which linked the FR main line at Arnside with the LNWR main line at Hincaster (between Carnforth and Oxenholme) was opened in June 1876. This was a single track, doubled only at Arnside and Sandside. It was built primarily to enable coke, produced in the South Durham coalfields to be transported to the ironworks at Ulverston, Barrow, Askam and Millom without the need for the trains having to travel through the busy exchange sidings at Carnforth.

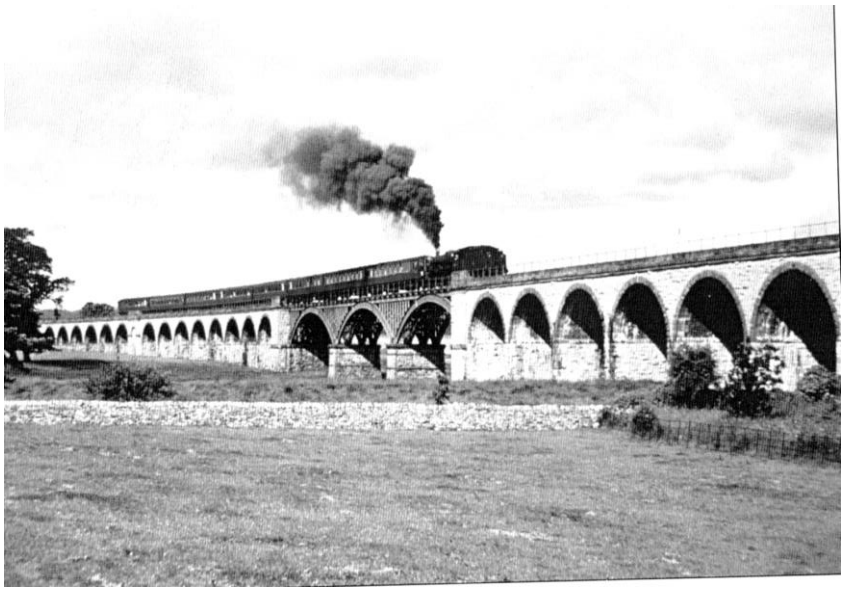
Although the line's prime initial purpose was to carry mineral traffic and it went nowhere near Kendal, it derived its name from running powers granted by the LNWR allowing the FR to run a passenger service between Grange and Kendal. It was locally called the "Kendal Tommy". Regular passengers on the six trains per day (in each direction) included day pupils at Heversham School, who used the service from as far afield as Grange and Kendal.

It would have been opened sooner had it not been for a protracted dispute with George Edward Wilson over whose land it was proposed the line should go. Eventually the dispute was settled and resulted in the Bela viaduct and a Paley & Austin, Swiss-chalet style station at Sandside (close to Wilson's seat at Dallam Tower) where at least one train per day would stop. Unfortunately neither survived after the line's closure north of Sandside in 1963. Ironically, the coke trains continued to run via Carnforth until its exchange sidings became choked with traffic during WWI. Passenger services were withdrawn on the branch in 1942. Between Sandside and Heversham the line climbed from sea level to nearly 200ft in only 2 miles. Traffic from a nearby quarry kept the line open until final closure in 1971.



Heversham, the second intermediate station on the line, opened in 1890, was situated just to the right of the picture (left). From Heversham the line ran south along an embankment towards Bela viaduct and Sandside. The line would swing to the right (far left of the picture) and then cross the viaduct.

The Heversham station signals can be seen to the right of the picture. The signal arms, of two different designs, were on a common post and operated by station staff from a ground frame on the platform.



Unlike Sandside, there were no goods facilities at Heversham, due to the price asked for the land by the owner, Capt. Bagot of Levens Hall.

Bela viaduct was necessary as the line was built further west than in the original plan, thus creating the incline up to Heversham. In the original plan the line would have been a short distance inland, to the east, and have gone much closer to Dallam Tower. The viaduct had 26 arches, with stone pillars, and crossed the River Bela at its confluence with the River Kent.

Lancaster Canal and Tewitfield Locks *(SD 519 738)*

The 18thC promoters for the construction of the Lancaster Canal had ambitions to build a broad canal, 75 miles long, linking Kendal in Westmorland via Lancaster, at that time a thriving seaport, with the Lancashire coalfield in the Wigan area. The canal's main purpose was to carry limestone from Westmorland and North Lancashire to South Lancashire, and coal from the Bolton-Wigan area in the opposite direction. John Rennie senior surveyed a route from Kendal to Westhoughton. The Company obtained its Act of Parliament in June 1792 and construction soon began. Rennie senior was appointed as engineer responsible for canal's construction. William Crosley senior acted as his assistant. Later Wm Crosley junior became resident engineer for the northern section from 1817 to 1819, and for supervising all the remaining canal works after 1820.

The first 40 miles of canal from Tewitfield (north of Carnforth) to Preston opened in November 1797. Then followed by 10 miles from Johnson's Hillock (north of Chorley), to Aspull, near Wigan) in July 1799. The section north from Tewitfield to Kendal did not open until 1819. Unfortunately during its 200 years existence the Lancaster Canal has suffered a series of mishaps that caused the segregation of the original planned route into a number of separate sections. As a result the current navigable section of the Lancaster Canal, including its Glasson Branch and the Ribble Link is now reduced to a distance of 60 miles. Commercial traffic ceased north of Lancaster in 1944.

In the 1960/70s the increase in leisure cruising ensured that most, but not all, of the canal remained open. At the southern end of the canal the Johnsons Hillock - Walton Summit branch, which had lost its regular traffic back in 1932, was dewatered in 1968 and the route was then severed by the M61 motorway. At the northern end the 14½ miles length from Tewitfield to Kendal was lost in 1968 when the opening of the M6 motorway blocked the canal's route to Kendal. Currently to the North of the M6 at Tewitfield, short sections of the canal remain in water for 9 miles to Stainton, near Milnthorpe. Beyond Stainton the canal is either dry or has been in filled all the way to Kendal. In 1963 the Lancaster Canal Trust was formed and for almost 50 years the Trust has actively campaigned for restoration of the northern section of the Lancaster Canal, which for publicity and other purposes is officially referred to as the Northern Reaches.

Today's visit provides the opportunity to view and walk the flight of eight broad locks at Tewitfield. Use of these locks ceased in 1942.

The lock flight spreads over ¾ of a mile, raising the canal 75ft. The sets of timber gates were removed and weirs made at the northern end of each lock. At the southern end of Lock 5 a small stone occupational bridge (No.140), spans the canal. A set of original gates is preserved near Lock 8. After abandonment the lock gates were replaced by concrete weirs to allow water to flow southwards and feed the navigable section below the bottom lock. Culverts and channels to the east of each lock act as overflows. Looking east on the south side of the M6 motorway bridge a shallow tree-lined depression marks the site of the abandoned excavations of 1797 which were originally intended by John Rennie senior to form the route to the north. Subsequently the route was changed. If and when the Northern Reaches of the Lancaster Canal are restored the plan is to remove the top lock and build a tunnel underneath the M6 Motorway

Canforth Station

The original station was built by the L&CR Railway who appointed Sir William Tite, the famous architect to design the station building. The single platform station opened in 1846. Tite's original small two-storey gable building looked like a small house in the Tudor cottage architectural style. It was built from brown sandstone. Still extant and situated at the south end of the former northbound main line platform it is incorporated in the station building and currently in use as a café. In 1857 the U&LR arrived at Carnforth with their new line from the west and Carnforth became a junction. At this time the L&CR and U&LR proceeded to enlarge the station by creating a new single storey building built on to the north face of the original building and in a matching architectural style. Another platform was added. The new building included a refreshment room and public waiting rooms, but the booking office remained in the original L&C building.

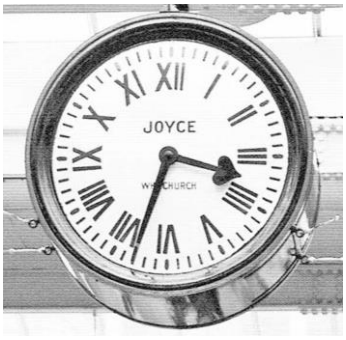
Ten years later, in 1867 the F&MJR arrived with their line from the east. The original stone building was extended in a matching style. In the period 1870 -80 the station layout was remodelled on a "V" plan by the LNWR and FR working jointly to change the track layout and building design. A single platform for the Furness line to Barrow curved sharply away to the west. This platform was covered by an iron ridge and furrow overall roof. A stone screen wall had turrets at each end and iron brackets were monogrammed with the company's initials. The LNWR platform of the joint station retained the company's style and monograms. Acting independently the LNWR built a new entrance building on the east side of the station running parallel to the south bound up- line. The new building was built in a slightly different style of architecture to that of the main building. It has a gabled front with rectangular mullion windows, each having eight identical glass panes separated by a stone column. At this time the F&MJR station, used primarily by boat trains, was closed. From this time boat trains stopped at the eastern end of the curve and the train split, with most carriages continuing to Piel and the remainder being taken, by a MR locomotive, into the FR & LNWR joint station (see diagram on next page).

Between 1937 and 1939 the station was completely rebuilt by the LMS who, demolished the overall roof on the FR building replacing it with a flat canopy supported on steel stanchions to enable the construction of a second platform for the Barrow line. The new platform and its canopy were built in reinforced concrete. In 1970 station operations and train services were rationalised and the main line platforms were taken out of use and shortened. The station became unstaffed and over time its buildings gradually deteriorated. Fortunately in the year 2000, Network Rail and the Carnforth Station Trust embarked on a full restoration project of the station building. This has resulted in the station becoming a popular tourist attraction housing a heritage centre including a permanent exhibition displaying the station and local railway history, small shops, a meeting room and a 1940s era refreshment room, named "Brief Encounter" This is derived from the title of the 1946 classic film "Brief Encounter". During filming the director David Lean selected Carnforth Station to provide sets for some of the scenes in order to give authenticity to the story which takes in a railway station refreshment room: identical to that at Carnforth but recreated, for filming, at Denham studios.

Some other notable features that can be seen at the station are:

- The Furness Railway's signal box which commenced operation 1882. It is built from brown sandstone and in the same architectural style as the adjacent station buildings. The FR's coat of arms appears on the north side and a roundel for a clock on the south side. The operating levers were on the upper floor level, which was accessed via an internal staircase.
- The station clock (extant), manufactured by Joyce of Whitchurch, was installed by the LNWR in 1895 on the main island platform. It is unique as the clock face is separate from its operating mechanism. The circular clock case which has two faces with Roman numerals is suspended from a frame fixed to the platform roof. The operating mechanism including a pendulum is contained in a tall wooden cabinet erected at platform level. Fitted between the top of the cabinet and the clock case is a rod which acts as a drive shaft for the movement of the hands on the clock faces. Scenes in "Brief Encounter" were shot on the station platform with the clock in view.

The Station Clock



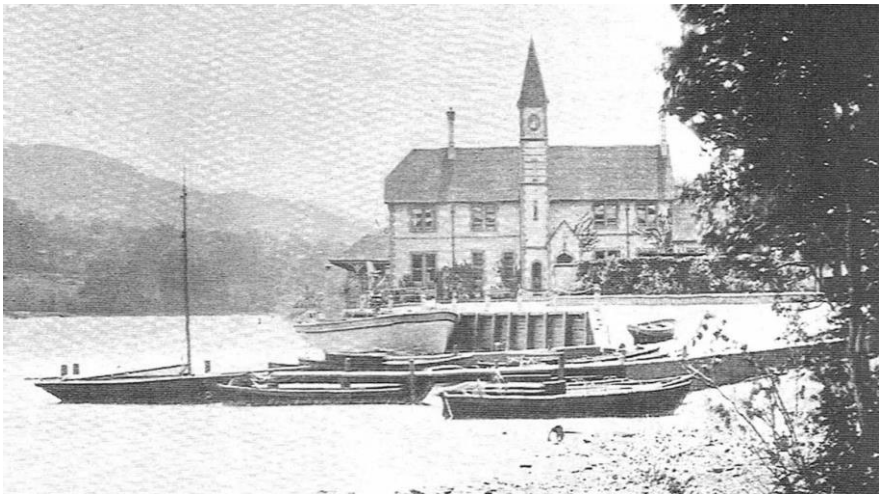
The Carnforth Station and Railway Trust initiated a search in 2001 to find the missing clock face and the mechanism from the original 1895 station clock. The search eventually traced the two items to a collector in Twickenham who had purchased them at a railway auction. The clock face and mechanism were purchased by the Trust and then reunited with the wooden cabinet and clock case, which had been removed from the station for renovation, and then re-hung from the station roof in 2002. Doors with glass panes were fitted to the wooden cabinet housing the mechanism.

Carnforth 1882. Station Junction signal box – Drawn by Philip Grosse and published in his book The Railways of Carnforth (Barrai Books, 2014)

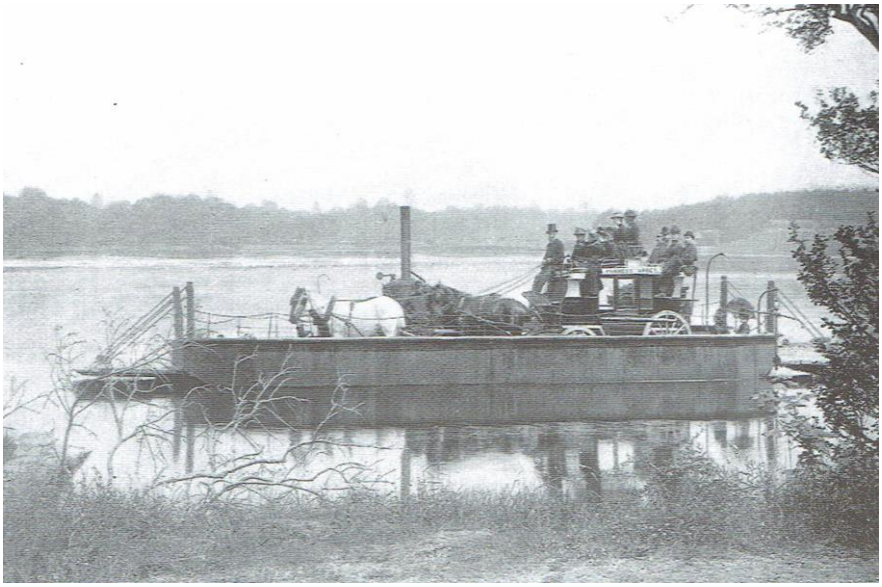
The station depicted was opened in August 1880. The buildings on the Furness (left) side of the station are still in use. The 1895 clock (seen here) was found in the care of a clock repairer in Twickenham and returned to Carnforth in 2002. For more details, maps and illustrations see the excellent book The Railways of Carnforth by Philip Groose (Barria Books, 2014) which was named the RCHS David St John Thomas Book of the Year in 2015.

The following photographs are taken from
'The Illustrated Guide to the Holiday Resorts on the Furness Railway: Illustrating and describing he districts adjoining', Furness Railway (W Holmes, Otto Printing Works, Ulverston, 1900)

Top Right: A view of Lakeside station from Windermere, looking south.
The building was built with yellow bricks and had black banding. This was considered by many local residents as being too striking in contrast to the grey Lakeland stone of buildings nearby. It was, though, an imposing building officially described as being Italianate in style – and it was the terminus station on a branch line!



Middle Right: There has been a ferry at the site of the current Windermere Ferry, which crosses from a point on the east shore south of Bowness to the opposite shore at a point near to Sawrey, for more than 500 years. The earliest craft were rowed across the lake. The first cable ferry, powered by steam, commenced operation in 1870 – this is likely to be the craft shown here. The current ferry boat, named *Mallard*, was built in 1990 and can carry up to 18 cars and over 100 passengers.



Bottom Right: Abbots Wood was the home of Sir James Ramsden. The pathway in the lower half of the picture led to Furness Abbey station where a train left from a private platform to take Sir James to his office in St Georges Square, Barrow.

Footnote: These photographs were published in a 174-page, fully illustrated guide to the area covered by the Furness Railway; by both its rails and its tours. The latter, twenty of which were advertised, were by steamer, rail and motorised coaches – the latter replacing horse drawn charabancs.