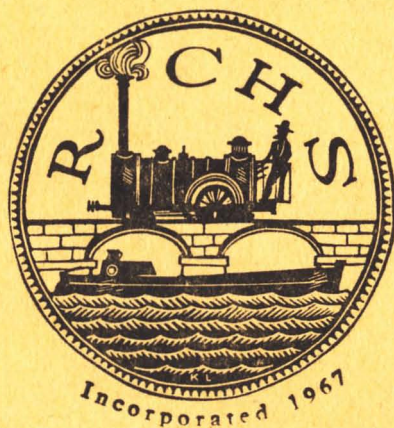


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RAILWAYS AND CANALS: A STUDY IN COMPETITION

By P. S. Richards

Just as the canal system owed its origin to the growing dissatisfaction with the bad roads of the 18th century, so a large part of the railway system grew up in the first place to supplement the inadequate services provided by the waterways, and to introduce better transport into those areas where canals had not penetrated (Stamp & Beaver, 1959 p. 642). The canals in Britain were built by private enterprise, they competed with the Turnpikes, and the companies were modelled on the lines of the Trusts, that is they were toll-takers and not carriers. Canals in Britain, however, had many disadvantages. Much time was wasted because of the great variation in depth and width, size of locks, and gauge of tunnels and through long-distance transport was compelled to pass over the property of several different companies.

Canals could either dry up or become very shallow in summer and were liable to freeze up in winter thus causing delays in transporting goods. The railway companies made a great point of the fact that their traffic would not be subject to delays from such natural hazards.

At first, despite the problems and delays caused by the weather, the improvement in speed upon road transport, the reduction of freight rates to about a third or a quarter of the amounts charged on the roads and ability of the canals to carry bulky raw materials and finished goods in hitherto inconceivable quantities sufficed to enable many of the canals to pay enormous dividends (Stamp & Beaver, 1959, p. 637). The profits from the Mersey & Irwell Navigation for the thirty-nine original shareholders were such that an average dividend of 50% for nearly 50 years was paid out. Nothing but fierce competition, it was plain, would break such a monopoly, and that was what the railway, most formidably, provided (Simmons, 1962, p.51).

Once it was obvious that the railway had to come, then the canal owners were determined it would be on their terms as far as possible, and they would exact what recompense they could and as many bridges and viaducts as the company could be forced to build to suit their convenience.

Two physical reasons explain why railways and canals often follow parallel or even identical routes. By their very nature canals must have low gradients and thus they followed the valleys and suitable gaps in ranges of hills. The early railways, especially those built by George and Robert Stephenson (Richards, 1965, p.21) had to follow routes where gradients were at a minimum. It was, therefore, advantageous for railway lines to exploit the physical features already used by canals. For three quarters of their lengths the London & Birmingham Railway and the Grand Junction and Warwick & Napton Canals run side by side. (In 1930 the Grand Union Canal was formed by the amalgamation of the Grand Junction Canal, the Regent's Canal and six others. It can now carry 100 ton barges (Stamp and Beaver, 1941, p.586). Secondly canals are frequently frozen or dried up and then railways provide alternative means of transport.

APRIL, 1970

When the House of Lords sat in Committee hearing evidence on the Bill to promote the London & Birmingham Railway many witnesses complained of both the generally slow rate of transport of canal traffic and the delays occasioned by freezing in winter (often amounting to a fortnight) and by the annual dredging.

The slowness of transport by canal often meant loss of trade or damage to perishable goods and many people thought railways would prevent these delays, allow markets to be captured and retained, and perishable goods to reach their destination in good condition. Mr. Oliver Mason, a former Birmingham merchant, told the House of Lords' Committee that he had often been put to great loss and could not carry out orders since he often was unable to get his goods to their destination quickly enough. He further stated that if he lost the opportunity of shipping by a vessel that sailed only once a year from a port, he lost the order. He had often suffered in this way.

Mr. W. Meade Warner, a farmer near Leighton Buzzard had offers to supply London with butter and milk; these were impossible to fulfil because of the lack of speedy transport. Animals that went to the London market by canal were often in a very poor state when they arrived.

Because of the close juxtaposition of railway and canal, the canal owners strongly resisted the coming of the railway. In all cases where land belonging to either the Grand Junction Canal or the Regent's Canal was needed for the railway it was refused and the Grand Junction Canal Company strongly petitioned Parliament not to allow the Bill to become law (Richards, 1965a p.318 et. seq.)

After Parliamentary sanction had been obtained the Canal Companies were to obtain as much from the London & Birmingham Railway as possible, and to hinder the work of construction wherever possible. The contractor for building the line at Wolverton was delayed in his work by the opposition of the Grand Junction Canal which refused to allow a temporary bridge to be built over the canal. The Company took legal action on this matter and a Rolls Court gave a decision against the Canal Company. Mr. Grant, a landowner at Tring, who had interests in the Canal, persuaded the Railway Company to build a culvert to drain his land, and when in later years it proved insufficient, he even persuaded them to pay half the cost of deepening it. The Canal Company influenced the Railway Company to build an iron railing round the Canal at Weedon in 1840; another instance of a rival company making the most of any chance to force the railway to incur expenses on their behalf.

In 1842 the Railway Company concluded an agreement with the Grand Junction Canal Company for the supply of water at Wolverton, Bucks. Judging by the previous correspondence on this point the Canal Company obtained very advantageous terms. At any rate the Railway Company did not obtain water from this canal again; it sank its own artesian wells at Pinner and Sudbury in Middlesex and Blisworth in Northamptonshire. In the same year the Board of Directors of the London & Birmingham Railway were debating whether to increase their tracks from two to four when it heard that the Grand Junction Canal were proposing to turn their canal into a railway

and that a Bill was coming before Parliament in the next session. The Board decided that they should buy the Canal and use the railway formed from it as a relief line. However this did not take place and eventually two extra tracks were built adjacent to the original two and were completed by 1846.

The truth was that, for most purposes, the railway could offer better facilities than the canal, at a more economic rate. It was much more flexible in the units it could handle and the network of railways, as it grew in the Victorian age, was far more extensive than that of the waterways had ever been. It was a simpler matter to build sidings or a branch line from an existing railway to a factory than to cut a new waterway. Although the canal companies tried hard to resist the railways, some like the Lancaster Canal with much greater success than the Grand Junction Canal, the railways had little difficulty in establishing their ascendancy and they soon became monopolists, much as the canals had been in the days before the railways came (Simmons, 1962 pp. 52/3).

ACKNOWLEDGMENTS

To Professor W. G. East, MA, of the University of London and Professor A. E. Moodie, BA, PhD, of the College of Liberal Arts, North Western University, Illinois, for help in writing this article which is adapted from an unpublished MA thesis of the University of London, 1957. To British Rail Historical Records Office to quote from documents in their possession; detailed references will be found in the thesis referred to above.

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★ ★ ★

Letter from Signalman at Stammerham Junction to Horsham,
26 October, 1883.

Sir,—I beg to inform you we cannot get our lamps to burn yet, they go out about midnight, or burn badly, London and New Cross can say what they like, I know how to clean a lamp as well as they do, its nothing but bad oil. Never had all this fuss till last July. Just got another can of bad muck. Your obedient servant W. Garner.

THE ARBURY CANALS

By Philip Weaver

(continued from p.7)

5. *The Seeswood Canal*

Water from Seeswood Pool, the main source of supply for the canal system, was led along a feeder into Hall Pool, flowing over the 'cascades' into Garden Pool and then along the canal system to work both mills before finally being fed into the Coventry Canal. Water levels were controlled by a series of weirs which ran to waste ultimately in Wem Brook.

In 1777 Sir Roger decided to make the feeder navigable and to build a lock so that access could be gained to Seeswood Pool. Work on deepening the channel for navigation began in December of that year and the sluices were modified in 1778 in order to make available another two feet of water from the lake. By 1784 the lock was completed on a site at the Astley end of the embankment.

It would appear that this section of canal was used mainly for pleasure boating and fishing, although coal and wood are known to have been boated along it to various outlying estate cottages. The length of this branch was approximately 1980 yards from the top of triple lock to Seeswood Lake.

6. *Coton Lawn Canal*

Coton Lawn Canal ran from a landing stage on North Walk, through Spring Kidden Wood, across Coton Lawn to join the Arbury Lower Level just below Garden Lock. It was on one level. Surveying this branch with a view to making it navigable commenced around 1769, but it was not opened for boating until 6 January 1795

Its use was mainly for transporting produce around the estate, and also for pleasure boating and fishing. The length of this branch was approximately 2112 yards.

7. *The New Cut*

The New Cut was a short navigable branch cut from the basin above the locks at Collycroft to a new wharf on the road linking Arbury to the Coventry-Nuneaton Turnpike.

It was constructed some time in 1793 mainly in order to provide a short route to the lower level from the pits at Griff and so save lock-age water when supplies were low. It was among the stretches of canal which were enlarged to provide reserves for working the worsted mill and so offset the use of Collycroft locks. The length was approximately 440 yards but this has been included in that of the lower level.

8. *The Griff Hollows Canal*

Griff Hollows Canal started at a junction with the main line of the Coventry Canal at a place called 'The Hollows' $2\frac{1}{2}$ miles south of Nuneaton, and proceeded westwards to a wharf to which coal was brought from the collieries by means of a tramway. The branch canal followed to a large extent the same course as a small feeder running into the mainline.

On 23 November 1785 Sir Roger met his agent Thos. Hutchins in Griff Hollows and walked over the line for a new canal to communicate with the Coventry canal and by the 28th construction had commenced. However it was not until 25 March 1786 that Hutchins on behalf of Sir Roger applied to the Coventry Committee for leave to make a communication between his colliery at Griff, and their canal at a certain place called Griff Hollows and this was accordingly granted. Work proceeded slowly and it was not until Sunday 29 July 1787 that the canal was opened for traffic. The notorious Griff Hollows bridge was built early in 1787.

Strangely this divorced branch of the Arbury Canal system was the last to survive being in constant commercial use for a hundred and seventy four years.

The Colliery was closed in 1961 and coal traffic ceased. Today it lies idle, waters undisturbed apart from an occasional pleasure cruiser. The distance from wharf to junction is approx. 1320 yards.

Engineering features

The Locks. There were thirteen locks lifting the canal 93 ft. 6 in. from the Coventry Canal to Seeswood Pool. The average lift was 7 ft. 2 in. but this varied slightly, but never more than an inch or so. As originally built there was four feet of water over the sills, the depth of the canal also being somewhat of that order except Griff Hollows Branch which as it was cut mostly in rock had a depth of 3 ft. 6 in.

The six staircase locks at Bedworth or Collycroft were laid out as a four rise, immediately succeeded by a two rise with a short right angled pound in between. They were 40 ft. long x 6 ft. wide and had double head and tail gates equipped with balance beams. Paddles were of wood operated by rack, pinion and windlass.

The engineer was William Bean, an eminent lock builder from Derbyshire who was engaged by Sir Roger, and the cost averaged £33.5.8d. per lock, this giving some idea of the rather austere nature of the whole system. Construction was begun at the end of 1782 and continued over a period of years, the first boat passing through on 24 February 1794.

The locks at either end of Coventry Wood Canal were first used in 1772. They were of brick construction with Attleborough Stone coping, as was Garden Lock which was completed in 1773. Dimensionally they were approximately the same as at Bedworth, but differed slightly in design as they had single head and double tail gates. Paddles for emptying were in the tail gates, and ground paddles, connected by 'soughs' were provided for filling. All three locks were built by John Morris of Coton who was estate bricklayer and mason.

Above Garden Lock, the canal ran through a stretch of ornamental water known as 'Swanland', climbing to Hall Pool level by another three locks, the first two being a two-rise known as Holly Kidd Lock and the third but a short distance away was a special design known as 'The triple lock'. Again the use of brick featured largely in construction with the usual stone coping. Builders were William Bean and John Morris.

The two rise had a single head gate, the central and lower gates being double. Paddles were provided in both sets of double gates and

a ground paddle at the head for filling. The 'Triple Lock' was equipped with two separate entrances and was shaped like a 'Y'. One set of gates connected with Hall Pool branch and the other with Seeswood Canal, both on the same level. Head gates again were single and tail gates double all being provided with balance beams, with the usual system of paddles. Construction was most probably carried out during the period of Sir Roger's Continental tour after his first wife's death i.e. from 1774-1776.

Seeswood Lock gave access to the summit level on Seeswood Pool via the Seeswood Canal. It was opened about 1785, and there is but one recorded date of it being used, Wednesday 15 August 1787, when Sir Roger and his wife Hester took the 'Hester Barge from the boat house through the locks up to the Lake and back to Hall Pool.

That the locks on the Canal were lightly built is seen by the number of times repairs were being carried out by William Bean, and soon after Sir Roger's death in 1806 all gates were reported to be 'out of repair and decayed'.

The only other engineering work of any magnitude was an aqueduct over the four rise at Bedworth carrying water from the lower level to mill wheel. It was surveyed by William Bean on 11 September 1787 and the foundations were laid on the 29th. By 3 November it was ready for lining with clay puddle. What happened during 1788 is obscure but on Thursday 25 June 1789 'Beans Aqueduct Bridge fell down'. It was rebuilt and ready to carry water by September 24th of the same year. First cost was £22.3.6d., rebuilding £32.3.6d.

Table of Lengths

Coventry Communication Canal	1078 yards
Arbury Lower Level	1540 "
Coventry Wood Canal	528 "
Arbury Upper Level	2508 "
Seeswood Canal	1980 "
Coton Lower Canal	2112 "
Griff Hollows Canal	1320 "
Total	11,066 "
= 6 miles 2 furlongs 3 chains	

The commonly circulated story that Sir Roger travelled direct from Arbury to the Houses of Parliament is quite unfounded as will be seen by examining all the evidence. He was M.P. for Middlesex from 1743/47 when no through route to London existed by water, moreover he made all his journeys by road, using a post chaise as far as Dunchurch where he joined the Birmingham-London stage coach.

The Oxford Canal, opened to Oxford in 1789 would have provided a through route via the Thames had the last link in the water chain, namely Collycroft Locks been completed. However they were not opened until 24 February 1794, and by then Sir Roger had ceased to serve as an M.P. and was 75 years old. An alternative route via the Grand Junction Canal was not completed until 1805 and by then Sir Roger would have been 86.

It is well known and on record that boats were man-handled from the Arbury Lower Level into the Coventry Canal, and two such occasions are described. The first was to take part in the opening

ceremony of Coventry Basin and the second when Sir Roger visited Banbury to view progress on the Oxford Canal also attending a General Assembly of the Oxford Company.

For the first description we turn to one of the many letters written to Sir Roger in Venice by his agent Thos. Hutchins and dated Arbury, 22 June 1775.

"Yesterday we entered the bason at Coventry with six boat loads of coals, the two first of which containing 15 tons each we gave to 300 poor people in parcels of 200 each. We went from the Colliery about 10 in the morning and arrived at Coventry at two, great numbers of people upon the banks and several went with us all the way. I hope you will not be displeased at me taking the old pleasure boat out of the Upper Canal and putting it into the lower one, in which Mr. & Mrs. Howletts, little Mary and three others their visitors, strangers to me, went with me and headed the fleet.

In the first boat of coals there were a Flag, French Horn, Hautboy Violin and Basoon. The last boat a flag only, the Colliers all in colours of their own providing. Some of the Proprietors met us on Holeshill Heath (*sic*) in their pleasure boat. A fine day added much to the appearance.....

The journey home took from 7 pm. to 11 p.m.

The second journey using the canals took place during 1778. Monday 21 September was spent fitting and furnishing the 'Hester Barge', and moving down from the boathouse on Hall Pool, through the six locks to the basin at the top of the projected flight of locks at Bedworth. Thos. Hutchins was left to get 'her' down into the Coventry Canal and in all probability he would have used the incline down the old horse tramway to the original wharf.

On 22 September, accompanied by his wife Hester and Hutchins, the party embarked on the boat at Griff Hills Bridge and journeying by way of the Coventry and Oxford Canals reached Stretton Wharf at 8 p.m. where they were met by coach and conveyed to Newnham Hall where they were guests of Lord Denbigh for the night.

Next morning (23 September) the coach took them back to Stretton Wharf with Lord Denbigh, Mr. C. Fielding and Miss Carpenter who went with them as far as Brownsover in the boat. They dined at Hillmorton aboard and then proceeded as far as Napton where they were met and taken to Ladbroke. The boat was then taken on by its crew as far as Fenny Compton.

Leaving Ladbroke next day in Mrs. Palmer's chaise and accompanied by Charles Palmer and his wife in another chaise from Banbury they embarked on the boat at Fenny Compton and proceeded to Banbury where they dined aboard. The party then returned to Fenny Compton and inspected 'ye great Tunnell', and returned to Ladbroke where they stayed the night.

On 25 September they returned to Fenny Compton and re-embarked breakfasting on the boat with Charles Palmer and his wife who later accompanied them as far as Napton. Dinner was taken aboard as they proceeded back to Brownsover where Lord Denbigh's coach met them and took them on to Newnham, the boat following on the Stretton Wharf.

Next morning a coach took the party to Stretton to join the boat. Dinner was again taken aboard during the journey back to Griff

Hills where they 'drank coffee' and then took the Coach back to Arbury. Poor Thos. Hutchins was left to get the Hester back on to the upper level!

One further voyage is worth recording and that was a journey from Banbury to Arbury by Charles Parker and Mrs. Kempson *in a canoe*. They were met at the Lodges by Sir Roger on 10 August 1779. Unfortunately there is no detailed record of this journey.

The years of decline

The driving force behind the building and development of the Arbury Canals, Sir Roger Newdigate, died on 25 November 1806 and one of the last things he supervised was the erection of a round lock house at the top of Collycroft Locks. After his death decline was rapid, although for a period of some six or seven years the canals continued to be used. No maintenance however was carried out and the locks were soon being dismantled in order to provide material for use on the estate. By 1819 navigation on the upper canals had been abandoned, but the original communication canal was still in a 'usable state up to the usual landing place'.

It would seem that Mr. Evans, agent for Mr. Newdigate who succeeded to the Arbury Estates on Sir Roger's death was mostly responsible for the dismantling, and when proceedings were instigated in 1819 against Newdigate because of damage by flooding, a report on the state of the canals was made by B. Bevan. This gives many interesting details concerning the construction of, and also dismantling the locks. When the gates were dismantled, weirs were constructed across the head of the chambers using stone and bricks from the walls for this purpose.

It is surprising that so much evidence still exists to-day. One can still see remains of the triple lock and riser below it, Seeswood Pool and Hall Pool are still there, but of the Garden and Kenilworth Pools nothing remains. Collycroft Locks have long since vanished leaving a few mounds of bricks upon the hill side. It is however possible to trace the remains of the whole system, although the greater part of it is dry.

Griff Hollows Canal alone has survived in its navigable state, and with the closing of Griff Colliery in 1961 came the end of what must have been one of the most interesting private ventures concerned in the development of canal transport.

ADDENDA

Remains of the canal system may still be traced using O.S. 1" scale Sheet No 132. For those wishing to do this, the principal Grid References are as follows:

Arbury Canal

Junction with Coventry Canal	SP 366883
Collycroft locks and Worsted mill (site of)	SP 356882
Griff Wharf (1793)	SP 355887
Killingworth (Kenilworth) Pool	SP 351884
Lodge Lock	SP 349886
Coventry Wood Lock and Mill	
('The Mill on the Floss' of George Elliott fame)	SP 344885

Garden Lock	SP 338892
Triple Lock	SP 333895
Seeswood Pool Lock	SP 329905
End of Coton Canal	SP 334904

<i>Griff Hollows Canal</i>	
Junction with Coventry Canal	SP 366896
Griff Basin	SP 354897

Much of the Arbury Canal above Coventry Wood Lock is contained within the Arbury Estate to which the general public are not admitted and permission should be obtained from Mr. F. H. M. Fitzroy Newdegate, Temple House, Arbury, Warwickshire before attempting to explore this section. The canal immediately adjacent to Arbury Hall itself, including the Triple Lock, may be seen whenever the house is open to the public.

Bibliography

The history of the Arbury Canal system has been obtained entirely from the Newdigate family papers which are now housed in the County Record Office at Warwick. (Ref. CR 136). These include Sir Roger Newdigate's personal diary, much of his correspondence, reports on the canal and adjoining collieries and some of his account books.

I wish to acknowledge the permission given by Mr. & Mrs. Fitzroy Newdegate to inspect their family records and remains of the canal and also the valuable assistance rendered by the County Archivist and his staff at Warwick.

* * *

THE STAGE COACH IN THE ISLE OF WIGHT

By Harold W. Hart

The Stage Coach tends to be associated with long distance travel in the eighteenth and the early decades of the nineteenth centuries, consequently the one-time existence of these vehicles within the 155 or so square miles of the Isle of Wight occasions some surprise when brought to light.

The steamboat service between Southampton and Cowes was started early in the days of steam navigation, *viz* 1817, but although the vessels were instrumental in encouraging the public to travel to the Isle of Wight for pleasure and recreation, public transport services within the Island were of earlier origin, having developed from the operation of a single chaise, the driver of which led his horse by a strap attached to the bridle; this vehicle took to the road shortly before 1760. The steamers which started to ply between Portsmouth and Ryde in 1825 and between Lymington and Yarmouth five years later, replaced the somewhat irregular trips by sailing vessels, and increased the routes covered by the existing Island coaches.

Ryde in the mid-nineteenth century consisted of an upper and lower town, Lower Ryde being described as a straggling place, inhabited for the most part by fishermen and coasting seamen. The approach from the sea, prior to the opening in 1814 of the first section of the existing pier, was hazardous, for the extensive sands now fronting the fore-shore were then a vast expanse of extremely soft mud which was water-covered only at high tides. This treacherous layer has, within the passing of years, received the deep covering of the present firm sands which can take considerable surface weight. On the other hand, the approach to Cowes was easy and convenient and passengers requiring to join a coach found their vessel tied up alongside what constituted the Town Quay, this being the open space immediately behind the 'Fountain' Hotel. This house, with the 'Bugle' at Newport and a few establishments in the vicinity of the Ryde Pier entry, formed the focal point of the Island's passenger road services.

The 'Bugle' can be considered as the birthplace of the Isle of Wight public transport system, for the aforementioned single horse chaise was operated by a landlord of that house. With the vehicle, a boy was provided whose duty it was to open and close the numerous gates normally left across the roadways: this conveyance long remained the Island's sole public carriage.

Early in the 19th century, certainly by 1810, there was a morning departure of some form of coach from the 'Fountain' at Cowes to Newport, a start being made as soon as possible after the arrival of the packet vessel from the mainland; a further service left Cowes at 5 p.m. There was also a conveyance from the 'Vine', booked to depart as soon as the incoming mail had been sorted, whilst a further run was made from that point to Newport during the afternoon, all with return services. These two coaches continued to serve the public, with slight alterations in the departure and arrival times, until about 1826 when the facilities were:

1 coach twice daily each way from the 'Fountain' at Cowes to the 'Sun' at Newport.

1 coach twice daily each way from the 'Vine' at Cowes to the 'Bugle' at Newport.

1 coach twice daily each way from Ryde to Newport.

No mention was made as regards 'inside' or 'outside' conveyance, and as only one fare was announced it can be assumed that the vehicles employed resembled the end-door omnibus as similar to those in general use elsewhere. The Newport to Ryde fare was at first 2s. 6d., then 3s., but subsequently was reduced to about 1s. 6d.

By 1840, the coach which left Cowes at 10.30 a.m., after reaching Newport, passed on to Blackgang, Sandrock, Niton and Ventnor, where connexion was made with the 3.30 p.m. 'Rocket' to Ryde. It then returned to Cowes. Another vehicle for Ventnor left the 'Vine' at 2.0 p.m. and, after following the same route, started the return run at 8.0 p.m. These were all daily services although some modifications were made on Sundays and in the winter months. At this time, details of the Ryde to Ventnor service were usually lacking in

the guide books, but probably only one coach operated.

Western Wight was, however, still untouched by anything in the nature of a regular passenger service and as late as 1860 the Newport to Yarmouth road was served on Newport market days only, the western terminus being Freshwater Gate. There were still no vehicles serving points immediately west of Blackgang.

Announcements regarding road travel were made in the press after 1850, and thereafter a reliable form of reminder to the public took the form of notes in the popular travel guides. Measom's Guide to the Brighton & South Coast Railway of 1853, which contained a page or so of advertisements, gave the following information:

"Ryde—Pier Hotel

Post Horses and Carriages of every description always ready.

Ryde—Yelf's Commercial and Family Hotel

Coaches to Ventnor and all parts of the Island start from the house.

Shanklin—William's Hotel

Four horse coaches to and from Ryde pass the door every day.

Ventnor—St. Boniface Hotel

Original 'Vectis' coaches leave Beasley's Hotel opposite the pier, Ryde, for St. Boniface Hotel, Ventnor, every afternoon at 3 o'clock after the arrival of the 2.30 packet from Portsmouth which takes from the 10.15 and 11 o'clock trains from Waterloo and also the 11.40 train from Brighton. Also, the 'Vectis' leaves the Medina Hotel, East Cowes, every morning at half past 12 for the St. Boniface Hotel after the arrival of the 10.45 packet from Southampton which takes from the first trains from London, Dorchester and Salisbury.

Freshwater—Plumbley's Freshwater Bay Hotel

Conveyances to and from all parts.

West Cowes—Fountain

Flys, Carriages, Post Horses, etc., at the shortest notice."

Some coaches, following the practice on the mainland, bore names, the following being particulars of such vehicles serving the Island around the year 1840:—

'Felicity'	Ryde and Ventnor
'Quicksilver'	Newport and Cowes
'Rocket'	Newport and Ryde
'Rocket'	Ryde and Ventnor
'Royal Mail'	Newport and Ryde
'Royal Telegraph'	Newport and Cowes

Vehicles bearing the names 'Union' and 'Vectis' followed these and later still a 'Jubilee' coach appeared. Some may have been omnibus type conveyances.

By 1855 there were six or seven runs each way on the Newport to Ryde road and four or five from Newport along the Medina to Cowes. Ryde was at that time linked to Ventnor by five return trips, other services being similar to one trip out and back each day.

The first railway in the Isle of Wight was opened, between Cowes and Newport, on 16 June, 1862, the Ryde to Shanklin section of the

Ryde-Ventnor line, which also served Brading and Sandown, being brought into use in 1864. These lines, and others which followed, rang the passing-bell for the coaches. The Ryde to Ventnor service of British Rail has now been cut back to Shanklin, passengers for Ventnor having to join buses in Shanklin station forecourt. In this connexion, the following quotation from the *Isle of Wight Observer* during 1864, before the Shanklin to Ventnor section of the new railway was opened to the public, is of interest:

"The coach still occupies an hour from Shanklin station to Ventnor and the inconvenience of the change is so great that parties still employ carriages throughout (from Ryde) to escape it".

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BY RAIL AND CANAL TO MID-WALES IN 1853

By J. Horsley Denton

One of the curiosities of railway history in Shropshire was the apparent reluctance of the ironmasters and other numerous industrialists on the eastern side of the county to join up with the first long-distance railway route which passed only a few miles to the east, over the Staffordshire border. The Grand Junction Railway opened in 1837, and linked Birmingham and the Black Country with Liverpool and Manchester. London was fully joined to the chain a year later with the opening of the London & Birmingham. The year after that a feeble attempt was made to link Shrewsbury with Wolverhampton but nothing further was done in this direction for some years and the first railway to reach Shropshire came from the opposite direction, from the Wrexham coalfield.

The North Wales Mineral Railway, striking off from the as yet unopened Chester & Holyhead at Saltney, was opened to Wrexham and later extended to Ruabon. The original modest aspirations of this company were then enlarged and with a change of title to the Shrewsbury & Chester Railway, this line entered Shropshire and reached the county town by 1848. The continuation on to the London—Birmingham—Lancashire trunk route was, in theory, opened by the Shrewsbury & Birmingham Railway in the following year, but the machinations of the wily Captain Mark Huish were so damaging to the S & B that the authorized link was never fully effective and the Shrewsbury company threw in their lot with the GWR with the latter's arrival in Wolverhampton in 1854.

Meanwhile, however, the mid-Wales towns of Welshpool and Newtown, destined not to see their first railways for some years and then

only in isolation to begin with, were suddenly provided with a remarkable link with the national railway network. The Montgomeryshire branch of the Ellesmere Canal passed under the Shrewsbury & Chester Railway near Rednal & West Felton Station en route to Llanymynech, beyond which the Montgomeryshire Canal extended the line as far as Newtown. Undoubtedly the canal was of great service to the farmers of the upper Severn Valley, particularly for the conveyance of lime, without which the permanent pasturelands of the broad valley floor could not properly have survived, but thoughts of swift passenger traffic were probably far from the minds of the promoters when the canal was conceived.

Yet in 1853, even before the railway link to the Midlands was properly established, an announcement appeared in the local press of a remarkable daily flyboat service which connected with trains for Liverpool, Birkenhead, Chester and Shrewsbury at Rednal station. By modern standards of water travel the speed was quite phenomenal and the conscientious boatmen to today, anxious not to break the 4 mph speed limit and thus destroy what remains of the towpath and bank would be excused for disbelieving the feasibility of the schedule if he forgot that one of the secrets of a well designed flyboat is that it should practically leave the water and aquaplane, reducing the wash to a minimum. Needless to say this feature is more appropriate to a horsedrawn boat than to one relying on a turning screw for its motive power.

The Montgomeryshire Canal alone had a lockage of 225 feet from Llanymynech to Newtown and including the Montgomeryshire Section of the Ellesmere Canal between Rednal and Llanymynech, the total journey covered 32 miles with 22 locks, 15 of them falling from Newtown to Carreghofa followed by a rise of seven to Rednal. This difficult run was accomplished with numerous stops in 5 hours 12 minutes.

The flyboat left Newtown basin at 7 a.m. and after calling at Foundry Bridge, Brynderwyn, Garthmill, Berriew, Brithdir and Belan, arrived at Welshpool, 14 miles from Newtown, from which it departed at 9.9 am. The fare from Newtown to here was 2s. 4d. First Cabin and 1s. 6d. Second. Calls were then made at Buttington Bridge, Pool Quay, Bank, Burgedin, Four Crosses, New Bridge and Carreghofa before reaching Llanymynech, 25 miles from Newtown (1st: 4s. 2d.; 2nd: 2s. 8d.) and continuing from there at 10.47 am. After calling at Pant Bridge, Maesbury for Oswestry, and Queens Head, the flyboat arrived at Rednal at 12.12 "in time for trains which reach Chester at 2.45 p.m., Birkenhead 3.45 p.m. Liverpool 4.5 p.m. and Shrewsbury 12.50 p.m." The fare from Newtown was 5s. 0d. First Cabin and 3s. 0d. Second.

The 'Passenger Terminal' at Rednal is an interesting building situated on the canal opposite the road up to the railway station. It is half-timbered, two storeys high, with the upper storey having an entrance from the road, and on the floor below, a door leading straight on to the canal a few feet above water level. Inside there is presumably a staircase to connect the two floors but the building is so small that it is difficult to think of it as a goods warehouse. One

is left with the interesting speculation that it really was built as a 'canal passenger station' to act as ticket office and waiting room. The thin timber framing filled with brickwork panels tends to add to this theory for it creates an impression of effect rather than the robustness which is present in other warehouse buildings on the canal.

The return trip was even faster. Passengers leaving Liverpool at 9.45 a.m. Birkenhead 10 a.m. Chester 10.40 a.m. and Shrewsbury 12.35 p.m. could catch the 1.5 p.m. 'Down Packet' from Rednal and arrive at Newtown Basin at 6.10 p.m. after the same number of intermediate stops. In addition to the fares stated for each stage, there was a flat rate for parcels—those under 28 lbs being charged 6d. and above 28 lbs but under 56 lbs, 1s 0d.

Included in the notice in the local papers (dated 1 June 1853) was a second timetable for the flyboat service that had also been established between Llangollen Road Station and the town of Llangollen. On this there were no less than three boats each way, leaving Llangollen at 8.25 a.m. 2.50 p.m. and 6.45 p.m. which connected with trains due to arrive at Shrewsbury at 11.5 a.m. 4.55 p.m. and 9.55 p.m. and Chester at 10.20 a.m. 5.20 p.m. and 8.50 p.m. The return journeys to Llangollen left from the canal near Llangollen Road Station at 11.36 a.m., 4.30 p.m., and 7.50 p.m. and took just under an hour. There were no locks on this route but one assumes that speed had to be reduced for the crossing of Pontcysyllte and that it would be severely limited on some of the tortuous curves between Trevor and Llangollen. (An RCHS trip some years ago took about four hours to cover this journey!)

It is difficult to guess what speed was normally attained when these flyboats were on the move. On the Newtown run, even assuming that the locks were always held ready for the flyboat to enter, the minimum assumed time taken in locking would suggest to the present writer that in order to maintain the stated schedule, speeds of between ten and fifteen miles per hour would probably have to be reached between locks. A pair of horses in fit condition would probably achieve this figure after overcoming the struggle to gain the first inertia following a stop, but frequent changes of horse would have to be made and one cannot help feeling that our knowledge of these technicalities is somewhat lacking at the present time. There are so many factors to be considered. When locks, for instance, are less than a mile apart, the maximum speed could only be maintained for a short distance for the boat would have to slow down to a manageable speed long before the next lock was reached—there was no engine to slip into 'full speed astern' to act as a brake. But *did* the boats have some kind of drogue or sea anchor which would help in this? Although the carefully timed schedule suggests that the timings could be maintained, some canal enthusiasts will doubtless delight in the notice at the foot of the advertisement: 'The precise times of Arrival and Departure are not guaranteed, as they must depend, to some extent, *on the arrival of the Railway Trains at Rednal and Llangollen Road Stations*' (the italics are mine); poor British Rail—they were being held responsible for eventualities even in 1853. Or, as owners of the canal, was this a typical LNWR dart at a rival railway company?

THE ALFORD CANAL

By Peter R. White

The principal navigable waterways of Lincolnshire were formed from natural rivers which were deepened and straightened from the 17th century onwards: the Witham, Ancholme, Trent and Welland. A very early artificial waterway can be found in the county—the Fosdyke (probably of Roman origin) from the Witham at Lincoln to the Trent at Torksey—but apart from some of the larger fenland drains which were suitable for navigation, the first artificial waterway to be constructed in relatively modern times was that from Tetney, on the North Sea coast near the Humber estuary, to Louth, a market town of some importance in east Lincolnshire, located where the chalk Wolds meet the coastal boulder clay: The Louth Navigation, for which the first Act was passed in 1763, followed the sea-level course of the River Lud from Tetney, thence rising by a series of locks some 45 feet to Louth itself.

The 'canal mania' period of the early 1790s produced several schemes for Lincolnshire, namely the Stainforth & Keadby (linking the rivers Trent and Don), and branch canals from the Witham to Horncastle (utilizing the River Bain), the Ancholme to Caistor, and from the Witham at Chapel Hill to Sleaford. Although the Caistor scheme was only partly completed and that at Horncastle only after considerable additional capital had been raised, all these projects were constructed in the following ten years.

One of the largest market towns in Lincolnshire thus not served by canal was Alford (population 1,040 in 1801), which, was located on the chalk/clay boundary, between Louth and Boston. In 1805 a scheme was produced for a canal south-east from Alford to the decaying port of Wainfleet¹, but little support was forthcoming. Who was then responsible for reviving the notion of an Alford canal we do not know, but on 10 March 1825 W. Tierney Clark, an 'engineer' of Hammersmith, London visited the town at the request of a local committee to examine

'whether or not the line of canal laid down some years since by Mr John Hudson from Alford . . . to the German Ocean, is the proper line for a navigable canal'²

For Hudson's original route eastward to the coast along Anderby Drain Clarke substituted a shorter route, from a basin at Anderby Creek to a basin on the east side of Alford. At Anderby, piers were to be built on the north and south sides of Anderby Haven (some 600 and 200 feet long respectively) into the German Ocean, to form an enclosed basin, from which entrance to the canal would be made via a sea-lock some 18ft 6in wide and 72ft long. From here the canal was designed to be wide enough for two vessels of 15ft 6in beam and 6ft draught to pass each other, and remained at sea level for some 3 miles until rising some 8 feet 6 inches in one lock before continuing the remaining 1½ miles to Alford. Feeders were to be adapted from streams flowing from Holywell, on the west side of Alford, and Well Hall, south west of the town. The somewhat extravagant dimensions of the plan require explanation, and so far as width is concerned,

15ft 6in was then the standard width of coastal vessels and Humber keels which might be expected to come up the canal from Anderby. Such operation was already practised on the Louth navigation, and gave through working up the Humber to the coal and industry of the West Riding without the need for trans-shipment. However, there could be little justification for building a canal wide enough for two such vessels to pass at any point, and furthermore Clarke's scheme for keeping the canal at sea level for the first $3\frac{1}{2}$ miles would have further increased the excavation required. The latter feature appears to relate to Clarke's curious proposal that only the upper part of the canal (*i.e.* above the lock) should be fed by local streams, the lower part to be filled by the tide! (see below).

Clarke, in his written report of 18 August 1825, also produced estimates of cost and revenue, the former not to exceed £40,000, plus a possible £9,000 for drainage work. At the time, corn and other local produce had to be transported to the Louth or Horncastle canals, and an 'export' trade from Alford of some 20,200 tons per annum was anticipated, including not only the usual agricultural produce, but also bricks and tiles, which were then made in considerable quantity from local clay in Alford and nearby Farlethorpe³. 'Imports', consisting of coal, manufactured goods, stone and groceries, were estimated at 4,100 tons per annum. Taking a tonnage rate of 2s. per ton for all traffic, some £2,430 per annum revenue would thus be received. This data was used in a prospectus issued by a local committee, who anticipated a good return on capital as the promoters of the Louth Navigation were making some 15 to 20 per cent⁴.

The proposed piers at Anderby were evidently the cause of some concern, for in the Archives Office at Lincoln⁵ we find copies of evidence presented on 2 December 1825 by Thomas Searby, a seaman, as to sandbanks and other hazards of coastal navigation in the neighbourhood of Anderby. Both he and another seaman, William West, concluded that the site was a suitable one, for sandbanks caused less obstruction here than at other points along the coast.

On 9 January 1826 the promoters of the canal held a general meeting at Alford⁶ under the chairmanship of F. J. B. Dashwood, at which it was decided to obtain a Bill in Parliament, and Stephen Langton and John Kipling were added to the committee. It was reported that some £5,000 had been subscribed for shares at the meeting and during the week in which it took place, in addition to earlier payments.

The Alford Canal Act (7G4.c.xliv) received the Royal Assent on 5 May 1826, the authorized capital being £43,000. The work was to be completed by October 1833, the whole length to be puddled.

The failure to build the canal after obtaining the Act has been ascribed to lack of capital, but as indicated above, a significant amount was raised before the Act was passed, and from material preserved in the Langton deposit at the Lincolnshire County Archives Office, problems over the survey by Clarke would appear to be a more likely explanation.

The survey on which the prospectus was based was made, not by Clarke himself, but as wording on the prospectus map of 1825 indi-

cates, by J. Fawcett of 3 New Ormond Street, London under Clarke's direction. Before going ahead, the promoters had obtained a letter from no less an engineer than Telford, approving Clarke's plans, which they had printed. As Telford was later to admit⁷, "In giving my former opinion, I may not have been fully aware of all the circumstances".

Following his election on to the committee on 9 January 1826, Stephen Langton wrote to Clarke on 22 January⁸ and again on 12 July querying levels of the proposed canal, with respect to availability of water at summit level and the effect of spring tides. Langton appears to have been a professional architect, and was (or considered himself to be) something of an authority on matters of surveying. While the present writer cannot claim any expertise on these matters, it seems clear from correspondence between Langton and Clarke that the latter was incompetent. In the margin to Clarke's letters, Langton comments in red ink in somewhat sarcastic terms on the latter's logic! Langton himself held at least nine £50 shares in the canal company.

Not receiving any reply from Clarke, Langton wrote again on 27 April 1827, in connexion with reducing dimensions of the canal, requesting a reply in time for the Annual General Meeting on 12 May; a scheme was duly produced by Clarke for a single-barge canal. However, he continued to maintain his insistence of filling the lower part of the canal by spring tides, the upper part from natural feeders. He even suggests that at low spring tides the lower part might be dry and the upper full! (A remark which gives Langton full opportunity). While dealing with Clarke, Langton had sent a list of questions about the validity of the plans to another engineer, Thomas Tredgold of 16 Grove Place, Lisson Grove, London. The latter replied on 9 June 1827, confirming that expenses would be reduced by eliminating the deep cutting to sea-level over the lower portion. Tredgold's report was printed, presumably for distribution to other shareholders, but the former also sent a written letter to Langton, which implies that work might be starting on the canal, and that 'The tide will not fill the canal as Mr Clarke expects.' Tredgold's competence was confirmed by Telford⁷.

From a comment by Langton to a letter from Clarke sometime in 1827 ('Mr Clarke's party carried their point in excluding these papers from the reference') some disagreement between Langton and other members of the committee, is apparent, the papers in question being perhaps the printed comments of Tredgold. Clarke replied to Tredgold's report on 31 July 1827 (Langton comments, 'vague assertions'), disagreeing with Langton's suggestions and maintaining that the lower portion must be kept at a low level to admit neap tides. Langton concludes that Clarke does not know what he is talking about (especially in connexion with one remark in which Clarke implies that water might flow uphill!). The Langton deposit at Lincoln includes further correspondence between Langton, Clarke and Tredgold, but with no apparent conclusion. No extensive construction work appears to have been undertaken, although one gentleman at Alford, anticipating construction, built a public house (now private) at the intended Alford basin, which duly acquired the

name "Coate's Folly". The continued dispute over Clarke's survey, coupled perhaps with lack of capital, would have delayed the start of construction until the period stipulated in the 1826 Act (above) would have passed. No further Acts were obtained by the committee.

Despite the lack of a canal, Alford expanded in population from 1,040 in 1801, to 2,300 in 1851, a similar rate of increase to Lincolnshire as a whole. In 1848 the East Lincs line from Grimsby to Boston via Alford and Louth was opened, and remains so today (December 1969) although closure from Grimsby to Firsby has just been approved by the Minister of Transport. Alford was also the scene of a short-lived steam tramway to Sutton-on-Sea from 1884 to 1889 and several projected railways, but grew little after 1851 in population or industry.

The story of the Alford canal has thus little to contribute to the history of the town itself, owing to its lack of construction, but throws some interesting sidelights on the competence of the civil engineering profession in the immediate pre-railway era.

NOTES

- 1 Priestley, J. *An Historical Account of the Navigable Rivers, Canals and Railways throughout Great Britain* (1831, David & Charles reprint 1969)
- 2 Clarke's report 18.8.25 (Langton deposit, 5/4). Hudson was possibly the engineer of that name who reported on dock schemes at Hull and Grimsby in the 1970s, see Swann, D. 'Engineers of the English Port Improvements 1660-1830' *Transport History* Vol. 1, p.264.
- 3 Lincolnshire Industrial Archaeology Group, notes to Alford tour 1967.
- 4 At this time however, tolls on the Louth navigation were rather high, and inhibited growth of local industry—see Lyons, N.J.L. 'Some Comments on the Louth Navigation Act of 1828', *Lincolnshire Industrial Archaeology* IV (1969), 2-10.
- 5 Langton 5/2
- 6 Printed copy, Langton 5/13
- 7 Handwritten letter from Telford (to Langton?) 4 March 1828, Langton 5/14.
- 8 "As the third President of the Alford Canal Committee", Langton 5/5

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CORRESPONDENCE

Thames & Severn Canal

Sir,—I am grateful to Mr. C. P. Weaver for his review of my Book on the Thames & Severn Canal, but there are a few points in his criticisms which I would like to take up.

My suggestion on page 80 that the round houses were 'probably unique' was evidently an overstatement, though it still seems probable that the Thames & Severn was 'unique' in its extended use of the design. I think it is unlikely that Smeaton's Eddystone Lighthouse, with its pronounced batter and highly complex masonry structure, could have been the source of inspiration. Local examples are more likely to have been the precedent: apart from a number of circular

Cotswold dovecots, there is an interesting residential round tower in Cirencester Park, which Mr. Warren Marsh, who a few years ago was Hon. Secretary of the Gloucestershire Society for Industrial Archaeology, pointed out to me was built prior to 1779 and is very similar to the canal round houses.

Mr. Weaver says that Thames Head bridge remains intact. Yet in September, 1967, when I took a party of members of the Gloucestershire Society for Industrial Archaeology to Thames Head, intending to show them the deeply grooved stone on the eastern face of the bridge (illustrated on page 125 of my book), we found nothing visible on that side except the earthworks of the widened road and the County Council's commemorative bronze plaque. The time at our disposal, did not, however, allow of a detailed examination.

On page 148 I summarized various proposals for increasing the supply of water, and mentioned consideration of erecting another engine at one of several possible sites. The most important of these was indeed, the proposal formulated in 1810-1811 by James Black in consultation with James Watt for an engine at Ewen, a proposal which was reviewed on several subsequent occasions until the shortage was remedied by increasing the supply to the Thames Head Well. Interesting though many of these proposals were, they were abortive, and to have examined them in detail, even if publishers' limitations of space had allowed, would have made tedious reading.

Mr. Weaver's assertion that my explanation of damage to those locks which had been shortened by throwing a masonry arch across the upper end of the chamber 'is mechanically impossible' raises an interesting point. It may be that I over-simplified or misconstrued the statement of engineers that 'owing to the cavity under the platform of the Upper Gates—the air cannot escape' and caused damage in forcing its way out, but that statement was made and was accompanied by the remark that vents ought to be provided to prevent a recurrence of the trouble.

I made no attempt to include *all* the voyages of tourists either before or after the period of restoration—again, to have done so would have been tedious even if space had allowed. I made it quite clear that powered vessels made their way through the tunnel—indeed that steam tugs were used by the company—but I chose to mention only those voyages which were relevant to my story in describing the state of the canal or the methods used to man-handle boats through the tunnel in the closing years.

As for the details of locks given in Appendix 5: I stated in a note at the foot of page 224 that I had inserted figures in the last column only where *reliable* information showed that the falls differed from those recorded in 1810—there was no point in repeating figures already shown in the second column. Bradshaw included distances in the case of only eleven of the twenty-eight locks in the Stroud valley, and no measurements other than the maximum size of vessels. Some of the distances there recorded in miles and furlongs differ slightly from those shown in my table in miles and chains, but mine were taken from a list compiled by Richard Hall, surveyor, in 1810 and afterwards copied into the company's 'Fact Book' by the manager,

John Denyer. This list, which includes distances and measurements of every individual lock, I have always regarded as the only complete and fully reliable list. The admirable section drawn by John Taunton, the company's engineer and manager at a later date, proves that alterations were made in some of the falls at a later period; but between all other published lists there is a great deal of discrepancy, and I have not found it possible to reconcile their figures. Nevertheless, there remain certain unresolved questions concerning the locks, particularly those in the lower part of the Stroud Valley. Hall's list and the Fact Book are explicit on the length of 68 to 69 feet, and nowhere is there any record of these locks being lengthened—yet narrow boats 70 feet long later passed through them. So either these locks were longer when built, which is Mr. Hadfield's opinion but one I have not so far felt able to accept, or they were subsequently lengthened, which I have assumed to have been the case.

HUMPHREY HOUSEHOLD

Level Crossings at Peterborough

Sir,—In his letter in the January issue of the *Journal* concerning the history of the two notorious level crossings at Peterborough, Mr. H. V. Borley points out that the first moves to bridge them were taken as long ago as 1871. The campaign directed to this end had been opened nearly a quarter of a century earlier by the *Stamford Mercury*, the only local newspaper circulating at that time in Peterborough. In the issue of 11 November 1848 an item headed 'Strong complaints about the E.C.R. level crossing at Peterborough' alleged that 'the increasing railway traffic through Peterborough, together with the shunting and stowing away of the carriages and trucks of the different companies, sometimes keeps the road closed for more than a quarter of an hour, there being 70 trains of all sorts in and out of the station every day . . . No other course seems open than to build a bridge over the line.'

Considering that well over 80 years were to elapse before the bridge was built, it can be claimed that few level crossings can have caused so much annoyance to so many people over so long a time.

R. A. DANE

The Edgware Branch of the G.N.R.

Sir,—As there appears to be some doubt about the early history of the Edgware branch it might be as well to place the following information on record. This has been extracted from Reports of the Engineer of the Great Northern Railway. The line was intended to be double throughout and the tunnels, the Dollis Viaduct and most of the bridges were so constructed. When opened the branch was double track to the west end of the west tunnel at Highgate, approximately on the site of Park Junction. Thence to Edgware the line was single apparently without any passing place. Double line was extended to East Finchley on 1 December 1867, and to Finchley (now Finchley Central) on 1 November 1869. At first passengers to or from the down platform at East Finchley crossed on the level; a subway, the present one, was brought into use in 1873.

H. V. BORLEY

GREAT CENTRAL & GREAT NORTHERN RAILWAY REMAINS

Readers may be interested to know of one or two developments which have recently been observed on the disused Great Central Railway/Great Northern Railway system north of Nottingham.

Great Central Railway

The site of Nottingham Victoria Station has almost disappeared under a sea of concrete, and the G.C. lines from Bulwell Common and Hucknall Central were intact in November 1968 but had been demolished by April 1969. Bulwell Common Station still has most of the tracks left in its fairly large marshalling yard. For reasons unknown, two bridges carrying the G.C. over, respectively, the Midland Railway, and the Great Northern Rly. at Linby were removed in June 1969 although they carried no traffic of any sort.

North of Annesley Tunnel, at the three-pronged Kirkby South Junction, all three branches were reduced from double track to single track in the Spring of 1969. At that time there was no sign of recent use on any of the lines.

Great Northern Railway

The double track from Annesley North Junction to Bulwell Common was reduced to single track in the late Spring of 1969. The rails and sleepers from the dismantled track were taken on the remaining track, via Bulwell Common, thence along the otherwise-disused G.N.R. Nottingham Victoria-Derby Friargate line to the sidings of the former Ilkeston North Station (the station buildings of which are now being used as a Car Showroom). The diesel locomotive which has been drawing the 'track-lifting' trucks runs round each morning from Stanton Ironworks (or beyond, e.g. Toton M.P.D.).

West of Ilkeston North Station, the Great Northern line to Derby has been reduced to one track and has not been used for up to a year. There are proposals to use the cutting west of West Hallam Station as a refuse tip, thus severing a link which, to the best of the author's knowledge, is at present continuous from north of Annesley to Egginton Junction on the regularly-used Derby to Stoke line.

Footnote

A recent copy of the *Journal* mentioned the two connexions from Babbington Colliery, Nottingham, to, respectively, the G.N. line west of Basford North Station, and the Midland line south of Bulwell Market Station. The former connexion has been out of use for a year or two. The Midland connexion was unaccountably blocked with building material in July 1969 but had been cleared and was in use again for coal traffic by September.

From K. GODDARD

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Letter from Pulborough to Horsham West, 6.13 p.m. 27 May 1912
To Horsham West:

There is a lady fell out of this train, so I have stopped her up on the advance. I will let you know when she leaves. Happily the lady is not seriously hurt, and completed her journey in the rear brake. Yours, etc., F.G.H.—(Relief Signalman), Pulborough.

THE OPENING OF RAILWAYS: CENTENARIES IN 1970

Compiled by M. D. Greville

Date	Railway	Section opened	Miles Notes
*Jan. 1	CALEDONIAN	Gartcosh to Glenboig	1½
Jan. 28	SOUTH YORKSHIRE	Stairfoot to Applehaigh	4½
Feb. 1	MIDLAND	Chesterfield (Tipton Jc.) to Sheffield (Grimesthorpe Jc.)	13½
Feb. 1	NORTH STAFFORDSHIRE	Silverdale to Market Drayton	12½
Feb. 14	LANCASHIRE & YORKSHIRE	Blackrod to Horwich	1½
Feb. ?	MIDLAND	Kentish Town Jc. to Highgate Road Jc.	1½
Mar. 1	LONDON & NORTH WESTERN	Hartford Curve to C.L.C.	1½
Mar. 1	LONDON & NORTH WESTERN	Widnes Deviation	1½
Mar. 1	MANCHESTER, SHEFFIELD & LINCOLNSHIRE	Marple Wharf Jc. to Macclesfield	10½
Mar. 1	& NORTH STAFFORDSHIRE JOINT		
Mar. 8	SOLWAY JUNCTION	Kirtlebridge to Bowness	8½
Mar. 14	LONDON & SOUTH WESTERN	Christchurch to Bournemouth	3½
Apr. 5	BRISTOL & EXETER	Cheddar to Wells	7½
Apr. 18	POTTERIES, SHREWSBURY & NORTH WALES	Llanymynech to Llanyblodwell	2½
Apr. 26	GREAT EASTERN	Lea Bridge to Sharnhall Street	2½
May 2	LONDON & SOUTH WESTERN	Pirbright Jc. to Farnham	8½
May 2	MIDLAND	Ashbury's Jc. to Ancoats (Goods only)	1½
May 2	MIDLAND	Lawrence Hill Jc. to Bristol (St. Philip's)	1½
May 2	MIDLAND	Cudworth to Barnsley (Mount Osborne W.Jc.)	2½
May 30	METROPOLITAN DISTRICT	Westminster Bridge to Blackfriars	1½
June 1	CALLANDER & OBAN	Callander to Killin	15½
June 1	CHESHIRE LINES COMMITTEE	Hartford Jc. to Winnington (Goods only)	1½
June 1	CHESHIRE LINES COMMITTEE	Cuddington to Winsford & Over	6
June 1	MERRYBENT & DARLINGTON	Merrybent Jc. to Burton (Goods only)	6½
June 1	NORTH EASTERN	Manors to Quayside (Goods only)	1
June 22	CHESHIRE LINES COMMITTEE	Northwich to Helsby	14½

<i>Date</i>	<i>Railway</i>	<i>Section opened</i>	<i>Miles</i>	<i>Notes</i>
July 1	LONDON & NORTH WESTERN	Tue Brook to Canada Dock	3½	E
July 1	LONDON & NORTH WESTERN	Worsley Jc. to Little Hulton	2	
July 5	LONDON & NORTH WESTERN	Connexions to Carnarvon Town from Carnarvonshire and Carnarvon & Llanberis stations	½	
*July 24	NORTH STAFFORDSHIRE	Alsager Jc. to Keele	7½	G
Aug. 5	DINGWALL & SKYE	Dingwall to Strone Ferry	53	H
Aug. 8	SOLWAY JUNCTION	{ Bowness to Kirkbride Jc.	3½	D
		{ Abbey Jc. to Brayton	5½	J
		Forfar to Broughty Jc.	17½	
		Mauchline to Ayr	10½	
		Rochdale to Facit	5	K
		Bellgrove to Coatbridge	8	L
Aug. 12	CALEDONIAN	Dunrobin to West Helmsdale	14½	M
Sep. 1	GLASGOW & SOUTH WESTERN	Stanton Gate to Nutbrook (Goods only)	4½	
Oct. 5	LANCASHIRE & YORKSHIRE	Scot's Gap to Rothbury	13	
*Oct. 7	NORTH BRITISH	Garstang to Pilling	7	
Nov. 1	DUKE OF SUTHERLAND	Bellgrove to Dunlop Street and Pollock Jc.	3	
Nov. 1	MIDLAND	{ Cwmfrwydoer Branch }	1½	
Nov. 1	NORTHUMBERLAND CENTRAL	{ Cwmnantdu Branch }	2	
Nov. 1	GARSTANG & KNOTT END			
Dec. 5	CITY OF GLASGOW UNION			
Dec. 12	MONMOUTHSHIRE			
*During 1870				

NOTES

A Goods: for passgrs in 1882. **B** Passgrs; for goods in 1868. **C** Goods; for passgrs. 1 July. **D** Passgrs: for goods in 1869. **E** Passgrs: for goods in 1866. **F** Goods: for passgrs. in 1875. **G** Goods: for passgrs. in 1880. **H** Goods: for passgrs. on 19 Aug. **J** Goods: for passgrs. on 14 Nov. **K** Goods: for passgrs. on 1 Nov. **L** Goods: for passgrs. on 23 Nov. **M** Passgrs: for goods in 1871

* From best available sources: no contemporary information.

I wish to thank all those whose assistance I have received, especially Messrs. H. V. Borley, C. R. Clinker, J. Marshall & J. R. Whittle

BOOK REVIEWS

RAILWAY CLEARING HOUSE MAP. WEST OF ENGLAND 1918. David & Charles. September 1969. SBN 7153 4678 4. Paper map folded similar to the current 1in Ordnance Survey maps. Price 21s. Explanatory note by C. R. Clinker.

This superb reproduction of the last pre-Grouping West of England R.C.H. map is a credit to all concerned and will be a great boon to all interested in railways and their development. The price is good value though, as with Ordnance Survey maps, there must be many who would pay for a cloth mounted map.

The only blemish on the map itself seems to be a partial black-out of the Somerset & Dorset line just north of Templecombe. There is another, less obtrusive, at Gillingham.

Mr. Clinker's notes add greatly to the interest of the map but he gives the impression that Airey's maps were lithographed in colour and states that he 'published two sizes of small-scale maps of England & Wales.' Of the 124 different Airey maps seen by your reviewer to date, only nine are colour lithographed. *Derbyshire & Nottinghamshire District 1889 and England & Wales* from 1881. All others are hand coloured.

Airey's England & Wales, to an advertised scale of 11 miles to an inch, was not sold to the R.C.H. with the other maps in 1895, because McCorquodale & Co. were joint owners of the copyright. Having no England & Wales map, the R.C.H. commissioned J. P. Emslie to prepare a new one at a scale of $7\frac{1}{2}$ miles to an inch and this, the first regularly colour-litho'd map was first published on 10 January 1896. A new, matching, map of Scotland replaced Airey's old one later in the same year and thereafter all his other maps were re-drawn and colour lithographed, one by one, over the next 18 years.

D. GARNETT

BRITISH TRANSPORT, by H. J. Dyos and D. H. Aldcroft. Leicester University Press, The University, Leicester. 72s.

The 473 page tome on British Transport development over something like 300 years, by Drs. Dyos and Aldcroft, has been awaited in educational circles for a decade, as it is designed for use by students of the Institute of Transport course on the evolution of modern transport. So long, in fact, that the Institute's ideas have now moved on and the subject is to be merged with elements of transport in a new guise for Institute exams in the 1970s. There is a graceful acknowledgment in the work to the inspiration of Professor Jack Simmons 'who has done more than anyone to advance the study and enjoyment of transport history.' What has been produced is an economist's survey from the 17th century to the 20th, and it deals (although not entirely comprehensively) with all forms of transport; refreshing though some of it is one wishes that other passages had been written more from the transport man's point of view than the economist's. One feels oftener than one should that the authors have gone beyond a recital of the facts to outline their views of what the railways (or the Government or someone) should have done. There

is some tear-jerking for persons displaced from their hovels in the slums of great cities, for example, but we have been unable to trace in this work reference to the obligations on railways to offer workmen's tickets; the subject gains a line in the index only for the searcher to be fobbed off by another heading. No reference seems to be made to such facilities on trams and buses. In motor coach competition with railways the point might have been made that coaches really replaced the coastal steamer in price at only a slightly better speed. In a book aiming at an all-round view it seems a pity to include the Tyneside and pre-Southern electrifications and to omit those of the Lancashire & Yorkshire. Merely because its solution to certain problems was electrification it is quite incomprehensible that the Southern should be set down as 'the *only* company to undertake a large-scale programme of reconstruction and modernization.' There also seems to be some lack of knowledge about the part railway investment in road transport (freight and passenger) played in the scheme of things. As to air transport, there seems some bias against the railways in 'It might be argued that up to 1939 the railways had little time to reorganize their new interests efficiently. Far nearer the truth might be the suggestion that the railways had little intention of doing so. The railways were far more interested in acquiring or controlling interest in the airline companies to limit the competition than they were in promoting orderly expansion.' Not a word about their planning, which eventually gave BEA a network that quickly became Europe's No. 1. It is useful to have comprehensive textbooks on transport as a whole and this seems to be a stalwart attempt that could be improved by more facts and fewer opinions

CHARLES KLAPPER

AN ACCOUNT OF THE LIVERPOOL AND MANCHESTER RAILWAY by Henry Booth: 104 pp. Frank Cass & Co. Ltd. (Cass Library of Railway Classics) 55s.

The organization of the Liverpool & Manchester Railway was brought about by the ability of Henry Booth and the appointment of George Stephenson as Engineer. In June 1830, before the opening of the railway, Booth published his remarkable account of how it came into being. His narrative of the inception of the line and the Parliamentary proceedings led on to a description of its course in some detail, some of the mechanical principles and a graphic report of the trials at Rainhill. It is easy, with the wisdom of hindsight, to recognize in the achievement a turning point in the history of mankind, but here we have much of what others have written of the Liverpool & Manchester as it first appeared in print. Less familiar material is of equal interest and it becomes difficult to believe that the author wrote this when the railway was by no means certain of success and steam locomotives were looked upon as a public danger.

But Henry Booth had no doubts and, as we read, we form a vivid impression of the confidence and courage with which he took up his task as the railway's chief officer. He concludes with the words: 'It will now be in the discretion of the Directors to name the day when

they shall consider the Railway in that state of completeness which may render expedient the public conveyance of passengers or merchandise, either the whole distance, or along part of the line in the first instance.'

No one is better equipped to write the Introduction than Mr. Charles E. Lee, the Editor of the series. The all-too-brief biographical details of Henry Booth are a welcome addition to our knowledge of this remarkably able man, who had nobody to show him how such an undertaking should be organized and went on to become a Joint Secretary and then a Director of the London & North Western Railway.

G. O. HOLT

THE INDUSTRIAL ARCHAEOLOGY OF THE BRISTOL REGION, R. A. Buchanan & Neil Cossons, 325 pp., 22 plates; THE INDUSTRIAL ARCHAEOLOGY OF LANCASHIRE, Owen Ashmore, 352 pp., 32 plates; David & Charles, Newton Abbot, 1969; both 50s.

Place these two books side by side, compare the identical styling of dust jackets, think of the sizes of the areas they cover, and exclaim 'What has Lancashire done to deserve this?' Then turn to the backs of the dust jackets to learn that appearances are deceptive, they are not in the same series at all, *Lancashire* is a broad survey, and *Bristol* covers a smaller area in greater depth. It could have been made more obvious. Having said this, and bearing in mind the big difference in their territorial limits (which in *Lancashire* ought to include north-east Cheshire as well, instead of penetrating Stockport only as far as the Mersey), and a comparison can be interesting.

Both books have the same format—a general study, industry by industry, followed by a list of sites and various appendices. Good accounts are given of industrial development, particularly on the growth of the port of Bristol. Oddly, both books omit an important and ancient industry—brewing, and quarries and brickworks are rather briefly dealt with. *Lancashire*, as one would expect, contains a comprehensive survey of the textile trades, but with one or two inexplicable exclusions such as Brierfield Mills and that most characteristic institution the 'Manchester Warehouse.'

The British volume carefully calls its 'List of Sites' just that, pointing out that a geographical or alphabetical basis has been rejected in favour of grouping entries under industries corresponding to the foregoing chapters, roughly in the same order that they appear there, which is a pity. The entries are so brief that back-reference to the chapter is necessary, for which the page number, at least, would have helped. Mr. Ashmore, on the other hand, is not afraid to call his list a gazetteer and, despite some important omissions it is the better for it, having more detailed entries in alphabetical order but creating difficulty by using parish names which make some well known features hard to find. Ordnance Survey grid references are given in both works. It is perhaps a reflection on past attitudes toward local history that the Lancashire bibliography is far the more extensive, even having regard to the larger area covered.

Transport has a prominent place in both books, canals and tramroads being given good overall treatment. Unfortunately Mr. Ashmore repeats the story of Rennie's involvement in the construction of the Lancaster Canal tramroad, omits Penwortham incline from the map and gives the gauge as 4ft. 1in., about which there is in fact uncertainty (see the *Journal*, Vol. IX, Nos. 5 and 6).

The respective authors seem to have different ideas on deciding when a railway site becomes part of 'I.A.' Both give general accounts of railway development, although having seen Bristol to the opening of the three main lines into the city and related the background to the Severn Bridge and Tunnel, *Bristol* goes little further. Once Temple Meads is described and the 'hammer beam' myth exploded, there is really very little about stations although the region has a number worth recording. Only Axbridge among that fine set on the Cheddar Valley line is mentioned—have the rest gone? And what of those 'charming "cottage-style" stations' on the Bristol & Gloucester? "Mutilated" they are indeed, but enough remains to show their Brunellian styling which surely is important as physical evidence of the political struggle which made them part of the Midland.

Lancashire, on the other hand, describes numerous stations and station sites, some being later ones of no great merit, to the exclusion of a number of early examples, the most important omission probably being Edge Hill where the buildings behind their later appendages are just as A. F. Tait drew them in his Liverpool & Manchester Railway scenes. Quite misleading is the use throughout of the names of the original owning companies to describe sections of line, so that the innocent may assume, for example, that the solid, mid-Victorian standard L.N.W.R. building which formed Bolton Great Moor Street was the work of the Bolton & Leigh Railway, and furthermore, unless he investigates the text very carefully, that that company still existed in 1874. There is some confusion about the ownership of the two Deepdale stations at Preston, too.

Messrs. Buchanan and Cossens allot generous space to the public utilities (neglected subjects) and street tramways. Although the Lancashire ramifications of these industries would have precluded more than a mention, a few words on what to look for might have sparked off some useful research. Perhaps this emphasizes the difficulties in writing a book covering so diverse a range of subjects, as inevitably the treatment is only as good as the sources, while the onrush of modern alterations, demolitions and development alone makes any sort of currency impossible. That sites described have disappeared since the time of writing gives stress to the importance of recording and research into what is left before it is too late, and all three authors ask for information on changes and additional material. One hopes that enough will be forthcoming for an enlarged edition of *Bristol* while there is obviously enormous scope for regional studies of Lancashire. As introductions to local industrial archaeology these two books are invaluable. May they spur others to equally valiant efforts.

G. J. BIDDLE

BRADSHAW'S CANALS & NAVIGABLE RIVERS OF ENGLAND AND WALES (1904) COMPILED BY HENRY DE SALIS. David & Charles Reprints. 1969. 63s.

BRADSHAW'S RAILWAY GUIDE, JULY 1938. David & Charles Reprints. 1969. 126s. (105s until 1 July 1970).

From the house of David & Charles come two more reprints, both bearing the name of Bradshaw. Perhaps the more notable of these is that compiled by Henry de Salis, described by the original publishers as 'A Handbook of Inland Navigation for Manufacturers, Merchants, Traders and Others'. The compiler was a Director of the canal-carrying company of Fellows, Morton & Clayton Ltd. and so he was in a unique position to collect information on inland waterways, both canal and navigable river.

For the student of waterways today, the work of de Salis is a treasure-chest of vital facts. He will find detailed distance-tables, names and numbers of locks with the direction of their rise and fall, the types of boats normally working each waterway and the maximum permitted dimensions of those boats, the availability of towing paths, working arrangements through tunnels and so on, for every navigation of the day. The navigations are listed in alphabetical order but the details of each are set out under the names of the owning companies, to which the cross-references are entirely adequate.

The survey is of the navigations as de Salis knew them in 1904 and so there is no information on canals, such as the Herefordshire & Gloucestershire, which had already been closed.

The book includes an index of principal places and towns having water communication and there is a glossary of canal terms. Mr. Charles Hadfield has added an introduction in his own genial style.

Bradshaw's Railway Guide was, of course, intended for a much wider market but the monthly issues were treated by users ephemerally, to be destroyed when the next was received. Copies of the guide are relatively scarce, therefore.

The choice of the issue of the guide to be reprinted is a happy one, covering as it does much of the heavy holiday traffic operated in the summers immediately before the second World War. A comparison between the reprint and the current official timetables brings forcibly home the extent to which railway services have been cut back, notably on long-distance through coach workings. Anyone who knew the railways of thirty years or more ago will find that this reprint quickly revives memories of trains and locomotives still deep in his affections. For those with a bent for social history, the many advertisements continued in the reprint will be of as much interest as the timetables themselves. The type-area of the original publication has been somewhat enlarged as part of the reproduction process, itself an advantage; this has enabled the reprint to be of a standard size with other books.

Both reprints are valuable works of reference and David & Charles are to be congratulated on making them available to the many people who would not be prepared to pay the high prices of originals on the second-hand market.

JOHN NORRIS

VIEWS ON THE NEWCASTLE & CARLISLE RAILWAY, drawn by J. W. Carmichael. Reprinted by Frank Graham, 6 Queen's Terrace, Newcastle-upon-Tyne, 2. 30s.

A few years ago I just missed acquiring at a very reasonable price a copy of Carmichael's Views on the Newcastle & Carlisle Railway. Consequently when a reprint appeared I was one of the first cutomers.

The drawings themselves have lost little in reproduction but look worse than they are because of the whiter-than-white paper on which they have been printed. When at the Historical Records Office at York recently I put the originals and the reprints side by side and the mellowness of the originals, printed on a 'soft' paper, was most noticeable when compared with the harshness of the reprints on a glaringly white paper. Apart from this the volume is a worthy addition to today's spate of reprints. The plates have been placed in order along the line from Newcastle to Carlisle and this, in the writer's opinion, is an improvement. The original spelling and punctuation of the text has been retained, although a new type face has been used for increased clarity. The dust cover is attractive but have a look underneath it: it is not often that a binding calls for comment, but this one does—it is a most attractive piece of work.

K. HOOLE

THE MANCHESTER, BOLTON & BURY CANAL NAVIGATION, by V. I. Tomlinson, reprinted from The Transactions of the Lancashire & Cheshire Antiquarian Society, 1965-6, pp. 231-299. Map, plans, photographs, from Hon. Editor, Lancs. & Ches. Antiquarian Society, c/o The Portico Library, 57 Mosley Street, Manchester 2. 15s. post free.

Those who know Mr. Tomlinson's work on the early history of the Bridgewater Canal—also published by the Lancashire & Cheshire Antiquarian Society—will expect a first-class piece of research, and they will not be disappointed.

The Manchester, Bolton & Bury was an interesting canal. In itself successful, mainly as a coal carrier, it also hoped on the one hand to join the Leeds & Liverpool at Red Moss near Wigan or, via the projected Haslingden Canal, at Accrington, and on the other to forestall the Rochdale by providing via Bury a canal line to Sowerby Bridge, the Calder & Hebble, and Hull. Operationally, its packet-boat services have special interest. Later, it was the first canal concern in England to turn itself into a railway company, as well, perhaps, as the first railway company to be taken over by another.

Mr. Tomlinson gives us not only a full account of the canal undertaking, but also a great deal of background to the industrial—especially colliery—development of the area the canal served. The account does, however, virtually stop at 1830, when the Act to convert to a railway was passed—only two pages are given to later history. We may hope that Mr. Tomlinson, to whom all canal and local historians are indebted for a little historical classic, will someday give us a sequel.

CHARLES HADFIELD

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