

The Institution of Civil Engineers

Panel for Historical Engineering Works

NEWSLETTER

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Roy Vivian Hughes MBE (1909-1994) Paul Dunkerley

I first met Roy in 1977, when I was appointed to PHEW by the North Western Association committee. At the same time, Roy had been appointed by the late Maurice Barbey. Our meeting for PHEW Members and new Helpers was held at Roy's home, when he was just recovering from a dose of 'flu. He had a strong voice in those days, and I was immediately impressed by his calm, authoritative and knowledgeable manner. I came to appreciate his almost encyclopaedic knowledge of railways and engineering structures even more as the years went by, and PHEW benefited to the tune of about seventy Record Forms which he completed personally. He will be irreplaceable as far as our small PHEW group in the north west is concerned, but thankfully he was such a prodigious worker during his lifetime that we probably have the area almost totally covered as far as railway items are concerned. When asked by a PHEW Member how we managed in the North Western Association with two PHEW Members, Roy replied with characteristic modesty and a grin - 'Paul tells me where to go, and I go'. Roy was a co-founder of the North Western Historical Engineering Group.

Roy was the son of a man who wrote railway timetables, and consequently had railways in his blood from an early age. After leaving school and a few months as a pupil draughtsman in an architect's office in Lancaster, he joined the Civil Engineer's Department of the London Midland and Scottish Railway in 1928, and became a student of the Institution in 1929. His work with the railways started and finished in the North West, initially in architectural work and as an assistant on supervision of contract works on docks and bridges at Fleetwood and Carlisle, and then for several years in the Manchester office as a draughtsman on the design and preparation of contract documents for bridge reconstruction, and, by 1939 taking charge on site of one of these projects at Frodsham.

In the meantime he had become an Associate Member of the Institution of Civil Engineers in 1936.

From 1939 onwards he became more involved in permanent way work, including spells on works in North Wales and being in charge of quadrupling of track north of Carlisle, and then in 1945, spent nine years as chief draughtsman in the District Engineer's Office in Barrow. After a short spell as Assistant to the District Engineer at Liverpool, he moved down to London for four years as Senior Assistant on the Kent Coast track widening and electrification. After a further spell in the North West, he became District Engineer, Wolverhampton in 1964, where he remained for two years, at the end of which he was transferred to the rank of Member [Fellow].

Once more he went back, for the last time, to the North West, where he joined the Merseyside Passenger Transport Executive, where he took a major part in the design and planning of the Merseyrail underground links, until his retirement in 1974.

During his career he walked every yard of the railway tracks in the north west of England, and knew all the bridges as if they were old friends. Roy had considerable

Victoria Viaduct (HEW 156), part of the Stanhope and Tyne Railway and a curve at Pontop to the Brandling Junction Railway; but in 1850 a more direct route via Usworth to join the B J R at Pelaw was substituted for that joining it at Brockley Whins. The present main line, with its through station on the west side of Durham City, dates from 1857, and in 1868 this was continued northwards by the Team Valley line to Gateshead. Thus the Brandling Junction Railway was first used from Brockley Whims, then from Pelaw, and then, in the opposite direction, from Redheugh. (Do not look for Brandling on a map: it is not a place but the surname of the two brothers who sponsored a short railway from Gateshead to Monkwearmouth).

The railway from the south first entered Newcastle by the 'High Level' Bridge 1849 (HEW 22), a double-deck structure carrying both railway and road across the Tyne into Central Station 1850 (HEW 289), where East Coast Main Line trains had to reverse until the opening in 1906 of the King Edward VII Bridge (HEW 256).

Northwards from Newcastle, the Newcastle and Berwick Railway was opened in 1850, using the Newcastle and North Shields Railway as far as Heaton (including the Dean Street arch, HEW 334). Near the Berwick end is the famous Royal Border Bridge (HEW 20). Beyond Berwick the East Coast route is continued by the former North British Railway, to and across the Border.

Beeching's second report advocated closure of the East Coast Main Line north of Newcastle, but it survived, and it was electrified throughout by 1991.

Midland

The Midland route to Scotland, publicised in London with the motto "St George for England and St Pancras for Scotland" was the last comer. Like its rivals, it had a complete history. It first reached London (Euston) over the London and Birmingham Railway via Rugby, then to King's Cross via Hitchin (1857) and finally to its own terminus at St Pancras (1868, HEW 237). Through the East Midlands it first used two of the three components of the original (1843) Midland Railway, the Midland Counties Railway of 1839 and the North Midland Railway of 1840 (HEW 1583). The latter bypassed Sheffield until 1870. Derby was bypassed by the Erewash Valley line in 1862, and it was from that line (at Trowell) that the connection from the North into Nottingham was opened in 1875. Southwards from Nottingham the trains between London and Scotland were in 1880 diverted to new lines via Melton Mowbray, crossing the Harringworth Viaduct (HEW 417).

At Leeds the North Midland line terminated at Hunslet Lane until 1846, when that station was bypassed by a line to Wellington Station, rebuilt and now incorporated in the City Station of 1967. There a reversal was customary before proceeding over the Leeds and Bradford Railway (1846) and its Skipton extension (1847). Beyond Skipton there was the 'Little' North

Western Railway, which in 1861 re-opened an 1850 branch to Ingleton, meeting end-on an L & NWR branch passing over Low Gill Viaduct (HEW 721) to join the West Coast line over Shap Summit.

In 1875 the Midland Railway opened its own route to Carlisle from Settle Junction (HEW 959); viaducts on that line are HEWs 6, 7, 8 and 960 (Ribblehead, Dent Head, Arten Gill and Smardale) and it has many tunnels, notably Blea Moor and Rise Hill. Its summit is at Aisgill, 1,169 feet above sea level.

The Midland route was continued into Scotland by the 'Waverley' route of the North British Railway for Edinburgh and by the Glasgow and South Western Railway (which diverges from the Caledonian line at Gretna Junction, just on the Border, and ran to St Enoch Station in Glasgow), but the Waverley route and St Enoch Station are now dismantled, the G & SW line has been partly singled and the 'Thames-Forth' and 'Thames-Clyde' expresses run no more.

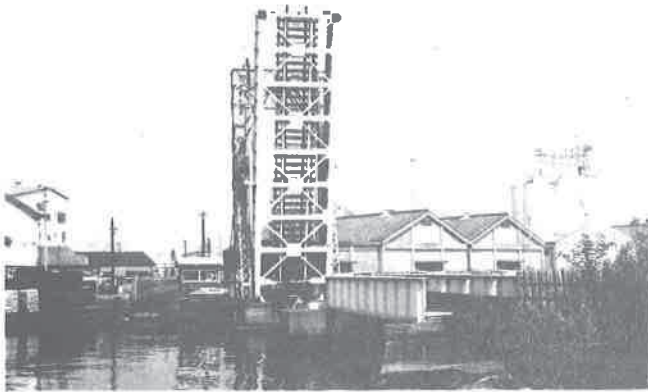
The Chairman's Column ... Roland Paxton

The Institution's Robert Louis Stevenson centenary Family of Engineers Symposium in Edinburgh on Saturday 16 April organised by the Scottish Group of the Panel attracted an attendance of over 300 and proved a great success. In historical engineering works terms the world's lighthouses were much in evidence and, under the commanding chairmanship of Mr Roger Dobson ICE Director General and Secretary, the graphic colour-slide presentation of Northern Lighthouse Board Engineer-in-Chief Mr William Paterson was particularly well-received evoking a lively and extensive question and answer session. His coverage included the present-day use and maintenance of Stevenson lighthouses and retention of some of the original lens masterpieces but with powerful modern light sources. Readers of *New Civil Engineer* of 28 April perhaps will have enjoyed Will Howie's very readable prose on the main theme of the symposium.

On the eve of the symposium more than 100 guests, including many Stevensons, the chairmen and speakers, attended the *ne plus ultra* of family conversaciones and dinners at the penthouse suite of The New Club. It was all organised in the finest Stevenson tradition of attention to detail and excellence and heightened by the magnificent backdrop of Edinburgh Castle in the evening sunlight. Our generous hosts were Mrs Jean Leslie and Dr David Bevan, direct descendants of the eminent Robert, David and Charles. It was an evening to savour and remember!

One of the Panel's valued international correspondents Dr Shunsuke Baba of Nagoya University has produced and forwarded to me an attractively illustrated report on historical engineering works in Chubu Province, South Japan. It was prepared under the

写真-1 (b) 第2級重要構造物のセレクト集一覧 (第4葉)



(b-25) 末広橋梁 [三重/四日市]



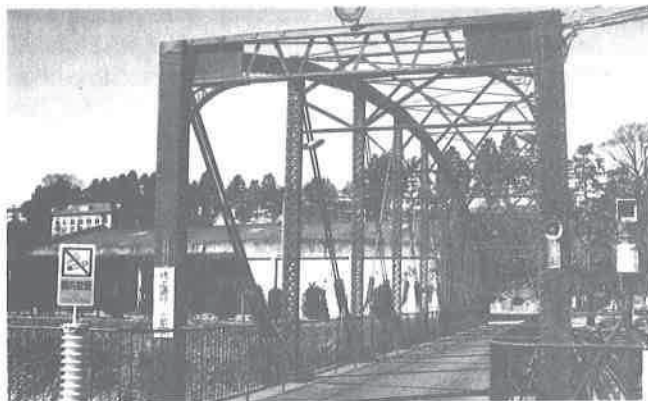
(b-26) 乙粟子橋 [三重/飯高]



(b-27) 伊勢大橋 [三重/長島・桑名]



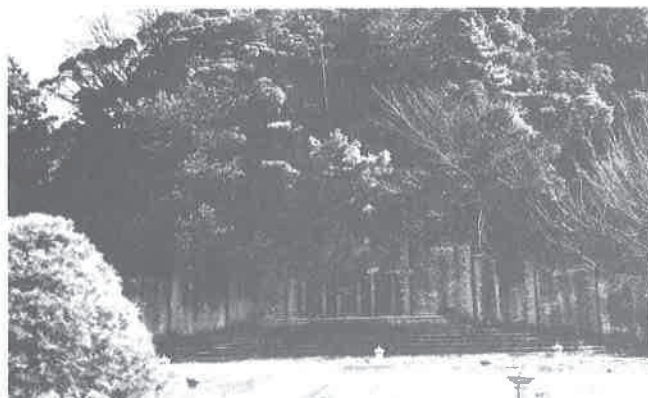
(b-28) 旧・宇津ノ谷隧道 [静岡/岡部・静岡]



(b-29) 森村橋 [静岡/小山]



(b-30) 旧・安倍川橋 [静岡/静岡]



(b-31) 松富配水場 [静岡/静岡]



(b-32) 芝富橋 [静岡/芝川]

auspices of the equivalent of our Panel in Japan, the Committee on Historical Studies in Civil Engineering of JSCE, for the Ministry of Construction. Much of the communications and water services infrastructure of Japan is relatively modern compared with its British counterpart, having developed from c.1870 with the opening up of the country to western influences by Emperor Meiji. The earliest historical engineering works in the report therefore date from this period. Until recently old structures which had become inadequate for modern requirements were almost invariably demolished rather than conserved, regardless of any consideration of their historical significance. This is now changing. In 1990 the Japanese Ministry of Culture recognised the importance of systematically designating prime examples of historical engineering work as cultural assets and started collecting data. Their survey is now being extended nationwide.

Dr Baba's survey, which incidentally is available for consultation in the ICE Library, covers bridges, tunnels and hydraulic works. He has evaluated the various individual works under three heads with merit ranking and a colour photograph:-

1. technological
2. aesthetic
3. global

A page of the photographs has been reproduced herewith as an example of the style and content of the report.

The photographs illustrate the following works:-

25. Suehio Bridge, Yokkaichi, Mie, 1931
Steel. The oldest surviving moving bridge in Japan.
26. Otogurusu Bridge, Iidata, Mie, 1931
Reinforced concrete. Interesting style.
27. Ise Bridge, Nagashima, Mie, 1934
First steel arch bridge of its type in Japan.
28. Utunoya Tunnel, Okabe, Shizuoka, 1904
Brick.
29. Morimura Bridge, Koyama, Shizuoka, 1906
Steel. Oldest road truss in Chubu Province.
30. Abe River Bridge, Shizuoka, Shizuoka, 1923
31. Matsutomi Filtration Plant, Shizuoka, Shizuoka, 1933
32. Shibatomi Bridge, Shibakawa, Shizuoka, 1936

Publications have also been received from another valued correspondent Dr Emory Kemp of West Virginia University's Institute for the History of Technology and Industrial Archaeology, relating to American historical

engineering works and other matters. It is intended to refer to some of these works in a future Newsletter.

HEWs in the News ... Brian George

An article in the *Guardian* and another in *New Civil Engineer*, both of 17 February, gave news of interesting work at an ancient bridge site together with pictures of a fine new three-arches masonry-faced bridge. Egton Bridge, which gives its name to the village astride the river Esk, 7 miles west of Whitby, cost £472 when it was built in 1758. Two of its spans were washed away in 1930. Its steel successor, demolished to make way for the new bridge, was condemned as an 'abominable monstrosity' by successive parish councils.

Peter Welch, North Yorkshire's structural engineering manager, had been asked to draw up a design guide for stone-arched bridges, amid disenchantment at the maintenance costs of modern structures. To build the £500,000 three-span bridge as a replica of the 1758 crossing of the river Esk, the county council reopened an 18th century quarry which supplied material for the original bridge.

The bridge contains concealed 200mm thick concrete arched saddles acting compositely with the limestone blocks and allows the structure to tie into the original arch. North Yorkshire therefore returns to the successful use of dressed stone for its highway bridges.

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NCE of 31 March contained news of another site of successive engineering structures, in this case locks. At Hambledon on the River Thames, two miles downstream of Henley, there has been evidence of a single-gate flash lock of the 14th century. A pound lock has existed since 1773 and its successor was built in the 1870s. This lock recently became urgently in need of maintenance and because it was the narrowest below Oxford and caused serious crowding of boats every summer, it has been replaced this year by a lock whose dimensions have been increased by almost 50% - chamber length from 41.5m to 61m and width from 5.4m to 7.7m. Now 679,000 litres of water have to be moved in or out of the lock in 3.5 minutes without excessive turbulence so there are eight inlet and outlet penstocks, and these have been moved from the gates to bullnose areas at each end of the lock.

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NCE 7/14 April provided a list of proposed new and improved roads taken from the HMSO publication *Trunk Roads in England - 1994 Review*. Two of these items will improve an important route into Devon, namely that from Ilminster to Honiton, the most favoured route for travellers today coming from the south-west of London (HEW 1568).

The Ilminster to Honiton route from Horton near Ilminster to Yarde near Honiton was completely new when it was built as a result of an Act of Parliament of