



# The Institution of Civil Engineers

## Panel for Historical Engineering Works

### NEWSLETTER

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#### Mr John McClure - A Tribute ... Robin Sweetnam

1922 - 1990

*Jack McClure, who died on 30 December 1990, aged 68, had been a member of the Panel since 1979. Born in County Antrim, Northern Ireland, he was educated at Dalriada School and graduated from Queen's University, Belfast, in 1944. After three years of site work with the civil engineering contractors, Messrs McLaughlin & Harvey, in Ulster, and with the Directorate of Opencast Coal Production in England he joined forces in 1947 with his father-in-law, Mr Alan Kirk, to form the firm of consulting engineers, Messrs Kirk & McClure.*

*He was a past Chairman of the Northern Ireland Associations of the Institution of Civil Engineers, of the Institution of Structural Engineers and of the Concrete Society, and a member of the Northern Ireland Historical Buildings Council. He took a keen interest in all aspects of engineering and industrial archaeology in the Province.*

*He made a special study of Ulster's bridges and was in the process of preparing a book on the subject at the time of his death.*

*Panel Members who attended the Annual Meeting in Belfast in 1987 will remember with pleasure the tour that he conducted around several of the Province's outstanding engineering works. He leaves his wife, Marjorie, who attended many of the annual meetings, and four sons, Brian, Sheawn, Richard and Michael.*

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#### Highway Engineering in Devon, 1810-1840 ... Brian George

Some of the turnpike trusts had existed in Devon for up to 60 years when the effect of the introduction of the mail coach towards the end of the eighteenth century and the establishment of civil engineering as a profession by the canal builders gave the impetus to the improvement of our roads and bridges.

In Devon three men who were to become early

In 1752 the Exeter Fast Coach had been scheduled to take 3½ days in fine weather when travelling weekly from London to Exeter, leaving on Monday and arriving on Thursday. By 1836 there were three mail coaches from and to London daily leaving the GPO at 8:00pm. The first arrived at Honiton via Andover and Ilminster, 154 miles, at 11:00am the next day, the second via Andover and Chard, 156 miles, at 12:30pm, and the third via Andover, Dorchester and Axminster, 160 miles, at 1:20pm.

Such was a measure of the improvement of the roads across the country as a whole and the provision of alternative routes into Devon, in thirty years. In Exeter new roads had also been built towards Tiverton and towards Cullompton. In 1844 the Bristol and Exeter railway was opened to St David's station and the whole transport system was recast for one hundred years.

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## The Chairman's Column ... Roland Paxton

This issue of the *Newsletter* conveys the sad news of the death of our good friend Jack McClure at the end of December. In a quiet way he made a very significant contribution to engineering history, particularly in the field of conservation in Northern Ireland. His masterly reconditioning of the Dredge Bridge at Caledon (see 'HEWs in the News') with colleague Don McQuillan, their paper on which will soon appear in *Structural Engineering Review*, serves as an excellent example of what can be achieved in the conservation of tension structures.

Sadly, it is a very different story at Gattonside Bridge in the Borders where the oldest unaltered suspension bridge in Europe, the work of Redpath & Brown in 1826, is soon to be reconditioned in a manner which will result in major alteration and loss to its unique ironwork. Panel Members have made a considerable effort to influence an outcome acceptable to informed conservation opinion, but Borders Regional Council, acting on advice from Travers Morgan, is not prepared to depart from its original proposal and the Historic Buildings & Monuments Division of the Scottish Office, whilst sympathetic to a better solution, were insufficiently determined to achieve it. The work, currently out to tender, is expected to be carried out this Summer. Arrangements have been made for the Scottish Local Associations to visit this and other bridges on 11 May. If you would like to come, let me know.

Diligent readers of the *Daily Telegraph* on 4 February will have spotted a success for the ScotRail Viaducts Committee, on which the Panel is represented. The impressive 19 arch, 130 foot high Leaderfoot viaduct of 1865 on the former Berwickshire Railway is to be taken over by the Scottish Office as an industrial monument.

This welcome outcome has been long in digestion and from the outset the Panel has emphasised the importance of this site in displaying the development of bridge building over two centuries with structures by Alexander Stevens (1780) and Sir Alexander Gibb & Partners (1964). During the next year ScotRail will carry out masonry repairs to the viaduct. A dowry of £50,000 will contribute to a visitor facility. Rail track will be laid over a short stretch of viaduct and embankment, upon which two 1930's Gresley carriages will be placed. One of them, an Open Third awaiting restoration at Carnforth, will be refurbished as a tea-room and ticket office.

Another worthy candidate for conservation is Laigh Milton 4 span masonry viaduct over the River Irvine on the former Kilmarnock & Troon Railway, engineered by William Jessop from 1808 to 1811. Stephenson's 'Killingworth' type locomotive trundled across it in 1817. The structure is believed to be the world's oldest surviving viaduct on a public railway; if you know better please get in touch! The viaduct is privately owned and close to collapse. Unfortunately, the Secretary of State for Scotland has not felt able to respond favourably to my request for the viaduct to be taken over for the nation as an industrial monument, but reading between the lines of his reply a substantial contribution towards the cost of conservation may be possible. The order of expenditure envisaged exceeds £300,000. I am currently in discussion with Bill Barr, Managing Director of W & J Barr & Sons of Ayr, Jim Bowie and Strathclyde Regional Council to consider the formation of a Trust to achieve the desired end.

On the international scene, I met Alan Prasuhn, Chairman of ASCE's History and Heritage Committee at the New Year. Possible joint activities under consideration are, an engineering history session at the 1993 Triennial Civil Engineering Conference and a 'Fathers of Civil Engineering' session at the 1992 ASCE Convention in New York in the October, to commemorate the bicentenary of Smeaton's death and the sesquicentenary of Benjamin Wright's death. On another front, ASCE would be pleased to entertain International Civil Engineering Landmark nominations for the Thames Tunnel and Eddystone Lighthouse, the latter perhaps attracting a second plaque commemorating Smeaton's bicentenary. This is in hand. This year the Panel is also helping to organise a Richard Henry Brunton commemoration by the Japan Society of Engineers and Yokohama City in London in October, details of which will be announced later in the year.

In conclusion, although the written word is undoubtedly the principal medium for promotion of the Panel's work, oral communication also plays an important part. A potentially exciting development in this area is that the Institution is considering establishing a prestige historical lecture to coincide with its AGM this coming and each subsequent July. The lecture would take the form of an illustrated slide presentation to the 'informed public' and not be too

technical. If the proposal is adopted, the Panel would arrange the topic and speaker. The event would be known as 'The Smeaton Lecture' and be widely advertised.

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**Scottish Group Weekend, June 1991 ...**  
**Kenneth McCrae**

The Scottish Group of the Panel is arranging a visit to the Dumfries and Galloway area during the weekend of 1st and 2nd June.

The visit will start near Dinwoodie Lodge, 12 miles south of Moffat, on the A74, where there is a tollhouse, designed by Thomas Telford on the old Carlisle-Glasgow Road.

From there the party will go on by coach, first to Westerkirk to see the Library, to which Telford bequeathed £3,000, as described in *Newsletter No.44*. A memorial to Telford is sited opposite the Library.

the side of the River Nith, we see signs of stone dykes built in the 1820's to try to improve the channel. At Kingholm is a dock first built in 1746 and rebuilt early in the 19th century.

In Dumfries there are four bridges over the Nith. The oldest, known as the Devorgilla Bridge, was originally a nine-arch packhorse bridge built in the late 13th century. Early in the last century the three easternmost arches were demolished to make more room for the cattlemart on the Whitesands. It is now used as a footbridge. Buccleuch Bridge was designed by Thomas Boyd, built in 1794, and twice widened. Whitesands suspension footbridge was built in 1875 to allow access to mills on either side of the river. It was reconstructed in 1983. St Michael's Street Bridge is a three arch structure built in 1926-1927.

Downstream of Devorgilla Bridge is the caul, or weir, built in 1705 to prevent erosion of the Whitesands and to supply power to a grain mill. After it had been breached several times, John Smeaton was asked for advice in 1768, and it was rebuilt in the following year.



Going down the Esk Valley, we come to Langholm Bridge, built in 1775, and on which Telford worked as a journeyman mason.

We then go back to Annandale, to Ecclefechan, to see Mein Water Bridge, designed by Telford, and the mid-18th century Hoddam Bridge over the River Annan. Going down the valley, we cross the river into the town of Annan by a bridge designed by Robert Stevenson in 1824.

From here we take the old road to Dumfries, on the way crossing the Lochar Water at Bankhead by a small bridge said to have been built in 1617. Then, going up

Leaving Dumfries we go down by the west side of the River Nith, eventually reaching the coast at Southernness lighthouse. It was originally built in 1748 as a beacon, but was later lit and twice raised in height. The light was extinguished and later restored in the 19th century, and finally extinguished in 1936.

We continue to Castle Douglas, where we dine and stay the night at the Douglas Arms Hotel. We shall have a chance to see Carlingwark Lane, a canal dug in 1765 to connect Carlingwark Loch with the River Dee.

On the Sunday, we first visit Tongland Bridge, over the River Dee near Kirkcudbright. Dating from 1805, it was the first bridge designed by Telford to be built in