



The Institution of Civil Engineers

Panel for Historical Engineering Works

NEWSLETTER

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Lieutenant Colonel Roy Hartley Edwards, ERD FICE ... Owen Gibbs

1901-1992

Roy Edwards was a founder member of the original Engineering Monuments Panel, formed in April 1969, and became Vice-Chairman of PHEW on its inception in 1972. He remained in this role, acting as Chairman for a while during Roger Hetherington's illness, until his resignation in 1981.

He had a remarkable, perhaps unique, career as a local association member, extending over a period of 64 years. He was elected Assistant Secretary to the newly formed Bristol, Cardiff and Swansea Association in 1923 and held office successively as committee member, Vice-Chairman, Chairman, Treasurer and Territorial Member of Council. As a past chairman he continued to attend committee, and to assist in local activities, until 1987.

At national level he had been Chairman of the Maritime & Waterways Divisional Board, and he was a founder member of the Hydraulics Research Board; he

Lieutenant Colonel Roy Hartley Edwards, ERD FICE
1901-1992

held honorary life membership of the Permanent Way Institution.

His training began when he followed his father and grandfather into the Taff Vale Railway Company. His long career with the GWR included a period at Paddington as PA to A S (later Sir Allan) Quartermaine, and culminated in his appointment as Civil Engineer, South Wales Docks, in 1954, a post he held until his retirement in 1965.

His military career began in 1925. In 1937 he was appointed to command a Railway Construction Co. (RE) which embarked for France in 1939 and which he brought back through Dunkirk in the following year. He was mentioned in despatches. On his promotion to Lieutenant Colonel he took command of a Railway Construction and Maintenance Group with which he returned to France in 1944, remaining until demobilisation.

Roy was always good company, humorous and

unassuming yet clearly very proud of his long association with the Institution. He died following a hip replacement operation on which he had embarked, at the age of 91, in the expectation of a further period of active life. He will be very much missed.

Who Was the First Engineer ... The Editor

Mr B Crossley of Hooton, near Chester, has questioned whether John Smeaton has a right to the title of first civil engineer, and he cites the case of a man known as "Richard the Engineer" who flourished in Chester (and was mayor of the city) during the 13th century. He was renowned as a master mason, being involved in building bridges and castles (including the castles at Flint and Caernarvon).

This does not refute the claim that Smeaton was the first man to call himself a civil engineer, but it raises the interesting question of who was the first man just to be called an engineer. Whether this Richard was so called in his day is not clear (it might be only a present-day description of him), but if any reader can give an early instance of a named engineer, the Editor would be pleased to know.

The Chairman's Column ... Roland Paxton

My pigeon-hole for mail at Heriot-Watt University continues to emanate international offerings. Recently it yielded an attractively produced Japanese edition of '100 Years of the Forth Bridge' which was initiated over lunch with Messrs Fujimoto and Kanechika of Yokohama City Government before the 1991 Spring Panel meeting and upon which the JSCE is to be congratulated. Also, 'Engineering Heritage and Conservation Guidelines' from the Institution of Engineers of Australia, of which more later; faxes from Professor Alan Prasuhn regarding the joint ASCE/ICE International Heritage Landmark plaque to commemorate the sesqui-centenary of the Thames Tunnel - the wording is now agreed and the ceremony will take place during the weekend of 25 September; and a letter from the notable engineering historian and conservator Dr Emory Kemp of West Virginia offering to act as a Corresponding Member of the Panel - a request to which we are delighted to accede.

The Institution of Engineers of Australia's government-sponsored conservation guidelines deserve a wider readership. Essentially the document discusses engineering conservation and society, why guidelines are necessary, providing a rational basis for conservation, its principles and aims, and the preparation of conservation plans. Conservation is defined as:-

"the process of identifying and managing the cultural values of an object or place for present and future generations ...

will normally provide for continuing economic and productive use ...

it includes maintenance and may according to circumstances include preservation, restoration, reconstruction and adaptation and will be commonly a combination of more than one of these."

By way of a cross-check on this definition, I am pleased to note that it embraces our currently active 'Laigh Milton Viaduct Conservation Project' where emphasis will be on preservation. The conservation of an object:-

"must involve the least possible interference consistent with ensuring its future security.

must be based on an assessment of all aspects of significance without unwarranted emphasis on any particular aspect.

must maintain an appropriate visual setting having regard to form, scale, colour, texture and materials

...

should retain the item in its historical location if it has a significant relationship with the place.

must not have contents or parts removed which form part of the significance of the place unless for security and preservation. Such parts should be returned when circumstances permit."

From experience I feel sure that it would serve our interest if these definitions were more widely known and they will be considered for inclusion in the Panel's Handbook.

In January, the Institution's Corporate Strategy was reviewed by Council and readers will be pleased to know that the suggested amendments which I submitted on behalf of the Panel, relating to the Institution's objectives and targets, were accepted, i.e.:-

a new para 3.2(e) "to advise on the significance and conservation of historical engineering works and archives."

amending para 4.1(c) "to enhance awareness of work undertaken on the recording and preservation of historical engineering works and archives."

These statements represent the Panel's work much more accurately than the previous ones.

The Scottish Group of the Panel has recently made a significant contribution to the Scottish Office's 'Review for

Discussion: Roads, Bridges and Traffic in the Countryside, a subject in which HRH The Prince of Wales has taken an active interest. By doing so the Panel hopes to influence the content of an advisory document to be published soon called *'Fitting Roads'*. In this review a rural road hierarchy was suggested, the adoption of which would offer the likelihood that many routes and structures of historical value would avoid the need for upgrading in design speed, vehicle weight and traffic density. Such a measure would remove some of the threat to historical engineering works and be welcome to the Panel, although vigilance would still be very necessary based on our hard-won experience and knowledge. Thank you very much Ted Ruddock for drawing up the Panel's contribution. In reply, the Director of Roads at the Scottish Office, Mr John Dawson, has thanked the Panel for its "useful and helpful submission" and the project team leader for *'Fitting Roads'* has undertaken that our suggestions will be "taken on board".

The Smeaton Exhibition has now returned safely to London after successful showings at major venues in Edinburgh and Glasgow. It is one of the finest exhibitions of its kind ever to have been shown in Scotland and reflects great credit on its creators and the Institution. The Panel's 'Smeaton in Scotland' programme, which included the above showings as well as lectures, is going very well helped by a well-written and illustrated double-page feature in the Glasgow Herald's *'Weekender'* of 12 December 1992 (circulation 130,000 copies) which also included a photograph of ICE President Mr Michael Cottell and Local Association Chairman Bill Stuart at the exhibition. This publicity has prompted numerous enquiries including one from a John Smeaton of Beith who may be related to his celebrated namesake. I hope for his presence at the Forth and Clyde Canal and Perth Bridge visits on 5 June!

Finally, it is pleasing to be able to report good progress on the Panel's initiative to try and improve the quality of conservation of historical engineering works by formally recognising outstanding practice with a prestigious commendation. A start is being made in Scotland and, with the co-operation and support of the Saltire Society's Civil Engineering Awards Panel, a commendation is to be instituted which can be awarded annually on the recommendation of the Panel in Scotland, and which would be presented by the President of the Institution at the annual awards ceremony held in November. Arrangements have still to be finalised, but it may prove possible to make the first commendation this year.

The Exe Valley Route in Somerset ... Brian George

Last June I wrote about the Exe Valley route in Devon, showing how between 1772 and 1830 new roads alongside the River Exe between Exeter and Exebridge near

Dulverton saved 2,190 feet of ascents and descents for an increase in journey distance of about 3 miles.

The journey from Exeter to the Somerset coast was further improved by similar work in Somerset. The original Minehead Turnpike Act of 1765 set up a route from Minehead through Dunster, Timberscombe, Quarne Hill, Hele Bridge, Dulverton, Brushford Green and Exebridge to Bampton. An Act of 1822 re-routed the road south-west from Timberscombe, up the valley of the River Avill to Wheddon Cross, and then down the valleys of the Rivers Quarne and Exe, on the eastern side of the Exe, to a point just east of Exebridge marked as Wilson's Farm on the Ordnance Survey map.

This new 14 miles of road saved 3/4 mile, avoided a 1 in 7 incline to Bury Hill, and reduced the summit height by 400 feet and the ascents and descents by some 750 feet. Overall between Exeter and Minehead in these fifty years, but mainly in the last fifteen, some 25 miles of new road were built to allow for the transition from pack horse to carriage. Nearly 3,000 feet of ascents and descents were avoided, together with a dozen 1 in 7 inclines. It was this moderation of road inclination that played an important part in the establishment of wheeled traffic in the south-west.

HEWs in the News ... Brian George

The famous Iron Bridge that spans the River Severn at Coalbrookdale in Shropshire (HEW 136) featured in an article by Henry Hodson in the *'Industrial Archaeology Review'*, XV, 1, Autumn 1992. Hodson described how the manufacture of a 1:33 scale model in aluminium alloy enabled him to infer the method of assembly of the actual bridge and he also suggested where the bridge parts were cast, reasoning that the largest parts of the Iron Bridge were cast at the Coalbrookdale Upper Works.

There is good documentary evidence available regarding estimates for the cost of the bridge but none relating to the actual method of construction. Therefore in 1982 Hodson decided to see if it were possible to construct a model of the bridge and thereby to demonstrate the method of assembly. Because of the very fine detail on many of the castings (mainly the great number of dovetail joints) it was necessary to make solid castings and to cut and file the joints by hand, adding three years to the project.

In this bridge there were five sets, side by side, of three ribs, and it was decided to erect a full span of one set of ribs and to create similar working towers and platforms to those that would have existed on site. The trial span of the model was erected more than one hundred times and on each occasion the various parts were assembled from different positions which included using model lifting gear of the appropriate scale.