



# The Institution of Civil Engineers

## Panel for Historical Engineering Works

### NEWSLETTER

SEPTEMBER 1992 No.55

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## The Brecon Forest Tramroad ... G M George

### *History*

One of the most scenic and spectacular areas of Wales is the Brecon Beacons National Park lying to the north of the South Wales Coalfield. Whilst the engineering history and industrial archaeology of the industrial valleys of South Wales are well-known and documented, a relatively little known fact is that across the high Brecon Beacons lie the remains of an early railway system, predating the later major railways in South Wales. Due to the remoteness of the area, significant lengths remain of this early railway service and they help to illustrate and explain the early evolution of the modern railway system.

The Brecon Forest Tramroad was built in the years 1821-1825, firstly for a nonconformist London businessman of Scottish descent, John Christie, and later after Christie's bankruptcy for his chief creditor, Joseph Claypon, a Lincolnshire banker. The tramroad remained under Claypon's control until his death in 1859, after which it became incorporated into the Neath and Brecon Railway, opened in 1867. Claypon carried out extensive extensions during the period 1832-1838.

The tramroad was intended to open up the Great

Forest of Brecon, where in 1820 Christie had acquired a large estate, and to link the newly opened Swansea Canal of 1798 to the Welsh hinterland. The tramroad thus aimed at serving both the agricultural community and the developing industries of the area, carrying iron, coal and lime as well as agricultural products.

For over 50 years this extensive early railway system served the area using horse-drawn trams, which crossed the high plateau areas, over rivers, along embankments and around hills, often using inclined planes to assist movement of goods.

### *The Engineers*

The Brecon Forest Tramroad was conceived, designed and then constructed by many engineers, some nationally known at the time. Early works were carried out by Edward Martin (d.1818) who was well-known in the area for railway and mining works, and then by David Jeffreys and David Thomas, the famous ironmaster who later emigrated to the USA and became known as the Father of the American Iron Industry. Later works were then carried out by William Burton senior (1777-1851), the son of a watch and clock maker from Ayrshire, a nationally known figure who founded a dynasty of engineers, six of whom became members of ICE. Burton senior was followed by his sons, John Burton junior (1812-1899) and Robert Burton junior, until 1834.

## The Chairman's Column ...

### Roland Paxton

I am writing these notes on a train en route to the 'People and Products: Transfer of Technology' seminar, organised by the Construction History Society, and which the Panel is a co-sponsor. This theme provides an opportunity for the study of the history of the construction industry in the widest sense within an international framework. Amongst a number of thought-provoking contributions to which I am looking forward are Professor Billington's *Bridges and Culture: Island Communications*; Dr Gruen's *Space Station Freedom and the Columbus Program: International Cooperation as a Useful By-product of National Competition*; and, last but by no means least, Mike Chrimes on the *Influence of American Books on European Engineering*.



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The ASCE tour from 11-21 July, which involved contributions from no less than six Panel Members from Kent to North Wales via Plymouth, Cardiff, the Midlands and North Wales, was most successful. On 16 July the International Historic Landmark plaque commemorating Smeaton and the Eddystone Lighthouse was duly unveiled on The Hoe by the Lord Mayor of Plymouth in the presence of Mr Michael Cottell, Vice-President of ICE and Mr Chuck Pennoni, President of ASCE, (pictured above) with press and television coverage. Professor Alan Prasuhn and I were interviewed on Radio Devon. On the same day the South Western Local Association - Devon and Cornwall Branch in co-operation with Brian George launched their second HEW heritage trail leaflet - for Exeter. Congratulations to all concerned on a fine and useful achievement which will undoubtedly enhance public enjoyment of the environment. Perhaps this example will encourage other Panel Members and Local Associations to produce leaflets!

Panel Members are only too well aware of the need for improving the quality of conservation of historical engineering works nationwide. With a view to encouraging this development, steps are now being taken to introduce an Institution award which would be made

for excellence in this field. It will take time to establish the necessary finance and procedures and, in the meantime, it is hoped to make a start in Scotland next year in conjunction with the Saltire Society Civil Engineering Awards Panel. This Panel already has an appropriate framework established for assessing projects, with annual presentations by the President.

The Institution's Corporate Plan, to which it was considered important that the Panel made a contribution if it is to continue to actively progress its various aims, has now been published. The document is written in very broad terms and the Panel's interest is deemed to be covered by the following extract which is rather less specific than our input and objectives as stated in *Newsletter 53* and the draft Handbook. However, it is a start!

#### Internal Affairs

#### Objectives/Targets/Activities

- (c) *Enhance public awareness of the work undertaken on the preservation and historical recording of engineering works*

Readers will recall the Panel's general request in support of establishing a James Clerk Maxwell International Study Centre at his birthplace, 14 India Street, Edinburgh (*Newsletter 53* refers). Recently, I arranged a congenial get-together between Professor Sydney Ross, President of the James Clerk Maxwell Foundation and the MacIvors, who in addition to being well-known in Edinburgh society are also the present owners of 14 India Street. I am pleased to be able to say that about half of the necessary funding is now in place and both parties feel that there is a good prospect of a successful outcome. Anyone who has not already contributed to the venture and who wishes to do so should send their remittance to *Professor David Ritchie, 11 Ann Street, Edinburgh, Scotland EH4 1PL*, who will be delighted to receive it.

The commemoration of Smeaton's life and work has been very much to the fore recently and the Institution's Archives Panel and Library staff are to be congratulated on a comprehensive and most stimulating exhibition at headquarters and also for the fine illustrated catalogue of exhibits. A particularly noteworthy inclusion is the Carron Ironworks cylinder and cannon boring machine which provides an attractive three-dimensional representation of a major and yet little appreciated facet of Smeaton's work. In Scotland the Panel has organised the following programme of events to which all readers are cordially invited. Professor Sir Robert Grieve and Mr Cottell have very kindly agreed, respectively, to open the Edinburgh and Glasgow showings of the Smeaton Exhibition.

#### LECTURES

Introduction and Lecture  
'Smeaton in Scotland'

by Roland Paxton, Heriot-Watt University

Edinburgh

1 October, 6:00pm  
(Tea 5:30pm)  
Royal Society of Edinburgh  
22/24 George Street

Contact: Dr Alan Sibbald

Glasgow

12 November, 6:15pm  
(Coffee 5:30pm)  
The Royal Scottish Automobile Club  
Blythswood Square

Contact: Professor Alec Coull  
(041 339 8855 ext: 5200)

\* \* \* \* \*

The Life-Long Learning of  
John Smeaton  
by Ted Ruddock, Edinburgh University

Glasgow

5 February, 6:15pm  
(Coffee 5:30pm)  
The Mitchell Library,  
Level 5, Conference Suite

Contact: Professor Alec Coull  
(041 339 8855 ext: 5200)

Edinburgh

3 March 1993, 6:00pm  
(Tea 5:30pm)  
Royal Society of Edinburgh  
22/24 George Street

Contact: Dr Alan Sibbald  
(031 455 2472)

EXHIBITION

John Smeaton - Civil Engineer

Edinburgh

5 October to 6 November 1992  
Monday to Friday, 10:00am - 4:00pm  
The Scottish Record Office  
West Register House  
Charlotte Square

Contact: Dr Margaret H B Sanderson  
(031 556 6585)

Glasgow

10 November to 31 December 1992  
Monday to Saturday, 10:00am to 5:00pm  
Sunday, 11:00am to 5:00pm  
Museum of Transport  
Kelvin Hall

Contact: Gordon Masterton  
(041 204 2511)

VISIT

FORTH AND CLYDE CANAL

including boat trip and  
inspection of Luggie Aqueduct,  
Kirkintilloch

and

PERTH BRIDGE

including an inspection with  
the Engineer responsible  
for its maintenance.

Numbers limited. For  
places from 5 January,  
contact Mrs Sandra Purves  
(031 556 9242 ext: 295)  
Approximate cost £10

\* \* \* \* \*

Admission to all events is free  
except for the visit

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**HEWs in the News ... Brian George**

The *Merthyr Express* of 9 April showed a photograph of the Charbonnier's night club in flames. Built as an accommodation work to replace a chapel demolished to make room for Merthyr (High Street) Station, the terminus of the Vale of Neath (broad gauge) railway, it was designed in Brunel's office though perhaps it did not get much attention from Brunel himself, and has since had its use changed from chapel to miner's hall and then to night club.

\* \* \* \* \*

The third Eddystone lighthouse (HEW 73) and Coldstream bridge (HEW 158) featured in *NCE 9 July* in an article commemorating the bicentenary of the death of John Smeaton. Generally considered to have been the first to designate himself 'Civil Engineer', he did so in an engineering report of 1754 proposing the drainage of Lochar Moss near Dumfries.

To commemorate this bicentenary, an ICE exhibition opened at Great George Street on 6 July with material from the ICE's own collection and drawings from the