

HISTELEEC NEWS

NEWSLETTER OF THE SOUTH WESTERN ELECTRICITY HISTORICAL SOCIETY

Web Site : www.swehs.co.uk

No. 9

August 1998

IRONBRIDGE 1999 IS "ON"

Provisional places have been booked at an hotel and therefore the weekend visit to Ironbridge in October 1999 looks as if it will take place. You will receive a notice shortly. Members will be required to return their applications and deposits, in order that we can make a firm booking with the hotel. Please come and join us?

SWEB HELICOPTERS

To celebrate 35 years of the SWEB Helicopter Unit in October, we print as a supplement a history researched and written by Peter Lamb with help from Sox Hosegood and Bob Malone.

REVIEW OF MEETING

"EARLY DAYS OF HELICOPTER FLYING"

About 40 members and friends met at the Fox & Goose at Barrow Gurney on Saturday 18th April to hear Sox hosegood recount his experiences on the early days of helicopters. Following a good lunch, members settled down to an entertaining hour of reminiscences and slides. Sox, who was the BAC's Chief Helicopter Test Pilot from 1951, became SWEB's Chief Pilot in 1963 following on the initiative from the then Chairman, Bill Irens, to use helicopters for SWEB. (*see Supplement*).

It was during the 2nd World war that Sox learned his trade as a helicopter pilot in the Navy. Following many high jinks, including stealing the flag off a German ship moored in a South American harbour, Sox settled down to testing helicopters, which were then being developed for commercial use after the war. It was interesting to hear that these early machines were not powerful enough to hover in a vertical position once they had taken off. In SWEB, Sox brought his skills as a pilot to good use and developed the fleet of helicopters, which now carry out overhead line patrols, carry materials over difficult terrain and become invaluable during winter conditions, when roads are impassable. The fleet now provides a service to several other companies in the ESI.

Following the talk, everyone moved on to Bristol International Airport at Lulsgate and were shown the existing fleet of SWEB helicopters by Bob Malone, the present Chief Pilot. *David Hutton*

TOTNES 'ROUND ROBIN'

There are very few days in England when the weather is so fine and so settled that one will confidently go out for a whole day in light clothing, without carrying a woolly or a waterproof. Sunday 17th May was just such a day and thirty members of the society turned up at the Steamer Quay in Totnes for the summer outing, many sporting shorts and sun hats. Our Chairman and Deputy Chairman were unfortunately on holiday in faraway places, but our new Southern Region Committee Chairman, Roger Christy, was on hand to set us off properly and to arrange a group photograph later in the day.

The 'Round Robin' was a round trip ticket in four parts being steamer to Dartmouth, foot ferry to Kingswear, steam railway to Paignton and finally bus back to Totnes. The journey was made at your own pace provided you caught the last bus 6.30pm.

The Dartmouth Queen is the biggest steamer on the River Dart and from it we saw Canada Geese and herons and many other birds. The river can only be seen by boat as there is no road in the valley. After that we enjoyed a day of shopping, sight-seeing, cream teas in the Butterwalk and chatter with good friends. A highlight for me was a visit to the Newcomen beam engine. (*see below*)

The great 4-6-0 engines of the Great Western Railway all carried names on elegant curved plates over the central wheel arch (except the County Class, which carried straight nameplates). The more modest engines and little tank engines were only given numbers. so the modest steam engine that took us to Paignton was unique because it was named 'Goliath'.

It isn't very often that we ride on buses these days so enjoying the scenery from upstairs on a double decker through Devon lanes rounded off a perfect day. *John Coneybear*

MEMBERSHIP

Good news, last year's membership was over 100, and since renewal we have lost 8. But with new members joining have topped 100 again, David Rees being our 100th member!

NEWCOMEN ENGINE

We probably all learned about James Watt when we were children. Apparently young James saw a kettle boiling and realising the power of steam, promptly invented the steam engine. It wasn't quite as simple as that because Watt didn't construct a satisfactory engine until 1775. An obscure ironmonger named Thomas Newcomen who lived in Dartmouth, built a practical steam operated engine in 1712, although the source of the power was atmospheric pressure.

I wonder how many of us did the following experiment at school to demonstrate atmospheric pressure? A little water is run into a 5 gallon tin can. The can is heated over a burner, the water boils and steam fills the can expelling the air. The lid of the can is now screwed on tightly and the can is plunged under a cold tap. The steam inside condenses creating a partial vacuum and the atmospheric pressure outside makes the can collapse.

Well, a collapsed can is not much use for a practical engine, but this experiment shows very clearly the principal of Newcomen's engine. In the real engine the can is replaced by a strong brass cylinder which is fitted with a piston at the upper end as shown in the drawing. The piston is connected to a pivoted beam and the other end of the beam drives a water pump.

Operation

The weight at the pump end of the beam is greater than the weight at the piston end so gravity draws the piston up in the cylinder. During this period the steam valve is opened allowing steam into the cylinder. The steam valve is then closed and the cold water valve opened. Cold water enters the cylinder condensing the steam and creating a partial vacuum. Atmospheric pressure then forces the piston down. The cold water valve is closed and the cycle is repeated.

Newcomen was greatly assisted in solving the practical problems of building the engine by John Calley, a local plumber and tinsmith. The valves were initially opened and closed manually using levers. There is a romantic story that a young boy who was employed to operate the levers, deduced that they could be worked automatically by rods connected to the main beam.

Many engines of this type were built. Although their efficiency was low (less than 1 per cent) they were capable of producing great power. James Watt's engines were more efficient, but they were protected by patents and more expensive. Newcomen engines continued to be built into the 19th Century.

An early engine is on display in Dartmouth as a permanent memorial to Newcomen. Next year the society is visiting the Ironbridge Gorge Museum where it will be possible to inspect a Watt type steam engine.

John Coneybear

BATH GREEN PARK STATION

(The editor asked Graham Warburton to tell us about his current keen interest)

Taunton Model Railway Group are constructing a model of Green Park Station. The Group was formed in 1968 and founder members not only included myself but the late SWEB Engineer, Ken Fillery.

Bath Station was opened by the Midland Railway on 7th May 1870, but is probably better known as the Northern Terminus of the Somerset & Dorset Railway, which began to use the station on 20th July 1874. The name "Green Park" was not used until June 6th 1951. The Station closed to passengers on 31st May 1971. Fortunately the Station was not demolished on closure and after years of neglect, the site was acquired by Messrs. Sainsbury, who built a supermarket adjacent to the station, which it retained as a car park, the station offices being let to small businesses etc.

With space becoming available at the Group's premises on the Bishop Lydeard Station on the West Somerset Railway, it was decided to recreate Green Park station as accurately as possible to the scale of 4mm to 1ft. Research began and a full set of Station drawings was kindly donated by Bristol Architects, Stride Treglown, who handled the station restoration. The Somerset and Dorset Railway Trust was the custodian of the many other drawings, including both loco sheds, coaling stage, goods shed, etc., etc. In addition the Bristol LMS Club gave the Group a full set of drawings of Bridge 44 (the bridge over the River Avon at the platform ends), which was strengthened by the LMS Railway in 1934.

Work is well under way - the first four baseboards have been constructed, also the three main control panels. Bridge 44, being of lattice construction, has been drawn and photo-engraved in brass. The massive overall roof of the Station will also be built using the same techniques. Signals and appropriate rolling stock are also under construction. The Group has benefited from several sponsors, including SWEB, Sainsbury's, Total Security, Kail Kwik etc. The model is scheduled for completion by the year 2000, when it has already been booked for the National Exhibitions at Chatham and Warley. If any member is interested in visiting Bishop's Lydeard, then feel free to 'phone Graham on (01823) 413 676. *Graham Warburton*

BLAGDON PUMPING STATION VISIT

Some 24 members and guests thoroughly enjoyed our visit to Bristol Water pic's Blagdon Visitor Centre on 4th July.

Standing outside the imposing Victorian engine house, in its now tranquil setting beneath the dam and lake with anglers quietly pitting their wits against the local trout, we could smell the oil and sense the power within. We paused to allow our imagination to conjure up the scene earlier in this century, when the valley would have been filled with smoke and the smell of sulphur and the boiler and engine houses a cacophony of noise, heat and vibration.

Construction of the dam across the River Yeo was started in 1891, being filled eight years later and reaching capacity of 1,860 million gallons in 1903. The four Woo If compound rotative beam pumping engines, housed in two splendid cathedrals of engineering, were built by Glenfield & Kennedy of Kilmarnock between 1900 and 1905. Each beam engine had an output of 170hp at 17rpm. The HP cylinders were supplied by steam from Lancashire Boilers at 100psi. Three engines with a fourth on standby could pump 7.5 million gallons of water a day, whilst the boilers consumed 8.5 tons of coal per day. They ran until 1949, when two engines were removed from the north engine house to make way for some very unexciting electric pumps.

It was not until 1984 that it was decided to preserve the two remaining engines and incorporate them as the central feature in the Visitor Centre, including a Museum in the old boiler house, which opened in 1988 and last year attracted 34,000 visitors. Incidentally Blagdon Lake was the first reservoir to be opened for public angling in 1904.

Thanks to Bristol Water, Jeremy Williams for his obvious enthusiasm and Brian Bird for operating the engines. Also Chris Buck for making the arrangements, buying the drinks and getting us fed and there on time. A super day out for those who appreciate "real" engineering!

(For those who could not join us, the Centre is open to the public - phone Bristol Water, Public Relations 0117 9536470) **Barrie Phillips**

MEMBERS NEWS

We offer condolences to Roger Hughes, who sadly lost his wife Margaret in February. We hope that the comradeship through the Society will be helpful to Roger in getting by in the near future. Alan Hooper has had a stroke. We wish him well and hope to see him at our meetings once again.

THOSE ADDRESS LABELS

Have you ever wondered why the address labels on the envelope containing your SWEHS notice are usually at a jaunty angle, creased or torn and even sometimes handwritten? No, well, as the person who puts the letters in the envelopes and affixes the labels (a highly skilled job for a retired engineer), I can let you into the secret.

The labels are particularly sticky and are very difficult to remove from the backing paper - not a job to be contemplated after cutting your finger nails! As the label comes off the backing paper, it immediately begins to curl and if not caught by sticking out a little finger, turns over and sticks to itself. Pulling the label apart usually removes the printing and the label is ruined and the address is then handwritten.

If the label is successfully removed from the backing paper, it is now fixed to several digits of my hand and is quickly transferred to the envelope before it sticks to anything else. Hence the jaunty angle and creases. Sometimes the backing paper stays on part of the label, which means that the label will not stick to the envelope properly and the job is then finished off in true Blue Peter fashion with sticky tape. So the next time that you get your SWEHS correspondence, spare a thought for the chap who battles with the sticky labels. The pay isn't bad, I do get free cups of coffee at Aztec West – *from the Treasurer?* (Ed) **David Hutton**

HISTORICAL VIDEO FOR HIRE

We reported previously that we had had old films converted into videos. Recently we have had duplicate videos made of the one containing the most historical films, which are listed below :-
1 & 2. Devon County Shows 1949 & 1950
3 & 4. Electricity Comes to Ashcombe 1952
5. Royal Show at Newton Abbot 1952
6. B.E.Power Convention, Torquay 1953
7. Power Comes to Widecombe 1962
8. Power Around the Scillies 1980

These are available for hire for fourteen days at £3.00, include postage, £2.00 direct, send cheque made out to SWEHS, obtain from Peter Lamb at 35 Station Road, Backwell, Bristol BS48 3NH

ARCHIVES - MASTER INDEX

Also available to members from the address above is a master index of all the Archives up until 1948, excluding photographs, which has been completed recently by Peter Lamb and John Gale.

CAIRNS ROAD VISITOR CENTRE

Still no news on any likely start on the works at Cairns Road to create a Visitor Centre and give members much needed access to toilets.

TALL SHIPS - TALL STORY?

During mid-July, the above spectacle at Falmouth attracted several Society officers. Faces noted at the various events included John Haynes, Peter Lamb and Roger Christy, meeting by chance on the Mexican 3 masted bark "Cuahtemoc". In addition Barrie Phillips sailed in the steam ship "Balmoral", viewing the fleet from a grand position. To cap it all John Haynes recruited our 100th member at the Tall Ships Concert at Pendennis Castle!

HYDRO-ELECTRICITY AT CRAGSIDE, NORTHUMBERLAND

(While John Haynes was in the Durham/ Newcastle area recently visiting two of his far-flung children, he took the opportunity to visit the National Trust property at Cragside. The NT have created an Energy Centre based on the work of William George Armstrong, 1810 - 1900).

Cragside is a large House and Estate, which was Armstrong's country seat. His energy interests were embodied in various water powered and electrical installations.

In 1878 the house became the first to be lit by hydroelectricity, when an arc lamp was installed in the picture gallery. Electricity was generated by a Siemens series wound dynamo. It was housed in a sawmill at the foot of a dam forming Debdon Lake, and was driven by a Williamson water-turbine. It was probably the first hydroelectric plant in Britain. Shortly afterwards, Armstrong's friend Joseph Swan perfected the incandescent lamp, and by the end of 1880 forty-five of the new lamps had been fitted at Cragside. Electricity for the lamps was generated by the equipment at Debdon. During the day the electricity supplied a second generator, which acted as a motor for a sawing machine.

Encouraged by the success of the Debdon installation, and keen to expand the use of electricity in the House, Armstrong began work on the Burnfoot powerhouse in 1886. Here the prime mover was a double vortex turbine supplied by Gilbert Gilkes Ltd of Kendle. The Burnfoot turbine operated at up to 1500 rpm from the 340 foot head created by Nelly's Moss Lakes situated above the installation. The turbine was coupled to a Crompton compound wound dynamo. Crompton founded his factory at Chelmsford in 1878 to manufacture arc lamps. He was quick to see the importance of Swan's incandescent lamps and he was directly involved in their installation at Cragside in 1880.

In 1895 Armstrong built an extension at Burnside to house a set of batteries which maintained power when the turbine was not running. In addition, a Tangye gas engine was installed in a second extension, and a gas works was built at the nearby town of Rothbury to supply it!

The gas engine, water turbines and dynamos continued to operate until 1945, when mains electricity was brought to Cragside. In 1984 much of the equipment was restored to working order, and is now on display.

John Haynes

GENERATING STATIONS

Basil Stockbridge (member) has been exploring Portishead's first generating station, i.e. before Stations A & B. Built in 1915 for Clevedon and District Electricity Supply Company, later North Somerset. It has been until recently part of Portishead's Primary Substation, known as Gas Lane, but now situated in Old Mill Road, due to road layout changes.

Peter Lamb has been exploring the old generating station at Lyme Regis. The building is still in situ used as a substation in Mill Lane. He has taken photographs for the Archives.

PROGRAMME -put dates in your diary

*Thurs. 6th Aug Bristol Get-together - Lunch 12.15pm
Cambridge Arms, Coldharbour Road*

Sat 26th Sept ELECTRICITY IN CORNISH MINES Talk by Eric Edmonds at 2.15pm at SWEB, Sowton Offices, Lunch beforehand at the Blue Ball Inn, Sandygate near the Exeter Motorway junction.

*Thurs. 1st Oct Bristol Get-together - Lunch 12.15pm
Cambridge Arms, Coldharbour Road*

*Thurs. 5th Nov Bristol Get-together - Lunch 12.15pm
Cambridge Arms, Coldharbour Road*

Sat 14th Nov. MAGIC LANTERN SHOW 2.15pm
Aztec West Offices of SWEB Original Victorian slides and projecting lanterns with nostalgic views of the West Country. Lunch at the Black Sheep beforehand

*Thurs. 3rd Dec Bristol Get-together - Lunch 12.15pm
Cambridge Arms, Coldharbour Road*

*Thurs. 7th Jan Bristol Get-together - Lunch 12.15pm
Cambridge Arms, Coldharbour Road*

Sat 23rd Jan. ANNUAL WINTER LUNCHEON at Fortfield Hotel, Sidmouth 12.45pm. Visit beforehand the Norman Lockyer Observatory and the James Lockyer Planetarium.

*Thurs. 4th Feb Bristol Get-together - Lunch 12.15pm
Cambridge Arms, Coldharbour Road*

*Thurs. 4th Mar Bristol Get-together - Lunch 12.15pm
Cambridge Arms, Coldharbour Road*

Sat 20th* Mar ANNUAL GENERAL MEETING

Also Talk by Noel May "Anecdotes of a Wayleave Officer"

NEXT EDITION

Please send information, articles, photographs or letters to Peter Lamb at 35 Station Road, Backwell, Bristol BS48 3NH or telephone on 01275 463160.