

HISTELEC NEWS

NEWSLETTER OF THE SOUTH WESTERN ELECTRICITY HISTORICAL SOCIETY

No. 27

AUGUST 2004

AUTUMN COMES and Winter too!

Please find enclosed next year's social programme. Putting this together every year is proving a difficult task, so that it has been agreed to seek your opinions on what we do. Please find a social questionnaire. We are experimenting with moving the Annual Luncheon venue in January northwards after its traditional location being in Devon. We hope that some of you from down south may stay at the hotel, Batch Country Hotel, nr Weston-super-Mare, as some of us did at Torquay this year.

SUSSEX-BY-THE-SEA

After much research for the weekend away in 2005 by Peter Lamb, we will be staying at the Beach Hotel, Worthing. This venue will enable us to visit Arundel Castle, Brighton Pavilion and Amberley Museum - date 30th Sept. 1st/2nd Oct - put it in your diary now.

BRIDGWATER CENTENARY

The Blake Museum in Bridgwater celebrated the Centenary of the first electricity supply there in 1904 with an exhibition entitled "Illuminating" in June & July. Vice-Chairman, Roger Hughes helped the Museum with material from our archives. See article on Page 7.

WILLANS STEAM ENGINES

We have been approached by a grand-daughter of Peter Willans of Willans & Robinson to find a working example of their steam engines, which is a tough order!. We have enlisted the support of The Association of Industrial Archaeology, who have agreed to place an article/advert in their next journal. The firm had their factory in Rugby, which was eventually absorbed by English Electric.

FRENCH ELECTRICITY

Did you know that French nuclear industry provides 80% of France's electricity? It is surprising that one doesn't hear of public complaints of their Nuclear power plants.

EDF is still a nationalised industry and the EU is demanding 30% be sold off. The EDF workers are striking in opposition to the proposals. I do not remember any SWEB staff objecting to privatisation – even though we didn't necessarily like it!! EDF Energy, the British arm of the French company supply a quarter of the homes in the UK, including London and the South East.

GARCKE'S MANUALS

Many who research electricity history have heard of and used many times references from Garcke's Manuals, which we have acquired over the last year. You may ask "what are they?" They are actually entitled "Manual of Electrical Undertakings" and were published annually from 1896 to after nationalisation in 1960 and are a rich knowledge of every electrical undertaking, both supply and traction, also including non-statutory undertakings. The information about these latter undertakings did not appear in the annual Electricity Commissioners Reports and therefore are a very useful reference.

At nationalisation, SWEB had 4 non-statutory undertakings within their territory, and legally were not bound to do anything, unless they were unable to handle the wrath of their consumers. In each case a financial settlement was negotiated.

The question often asked, is – "who was Garcke?" Emile Garcke was born in Saxony in 1856 and became a naturalised British subject in 1880. As a young man he joined the Anglo-Brush Electric Light Corporation Ltd., an American subsidiary, as Secretary in 1883, rising to become Manager in 1887 and Managing Director of its successor company, Brush Electrical Engineering Co. Ltd., four years later.

He was a strong supporter of electric traction and set up another company with the help of his fellow directors, the British Electric Traction Co. Ltd., (BET) in 1896 becoming Managing Director. By 1904 BET was a vast group of 66 companies, mostly associated with tramways and distribution supply. Emile Garcke was the mastermind behind the enterprise, which by 1906 operated 15% of all British Tramways.

He was a keen publisher of electrical books and pamphlets throughout his life, which is how the "Manuals" came to be published and even continued long after his death. He was also Chairman of Metropolitan Electric Tramways by 1929 and died in 1930 aged 74.

GEOFF YATES

Geoff, who left SWEB Bath many years past to go to find new pastures in Australia, has kindly written down his experiences in that far away land – see **overleaf**.

REFLECTIONS ON A LIFE IN THE ESI

Peter Lamb has asked me, if I would write an article on my experiences in the UK and overseas. This I have done with great pleasure, I hope it is of interest.

I commenced work with SWEB in July 1950 as a student apprentice engineer, finally graduating in June 1955, then held various positions, until I completed my task with SWEB in December 1968 as a 3rd Assistant Engineer at Bath. I also completed 2 years Nat. Service in Germany.

In December of 1968 I emigrated with my family to Australia to seek fame, fortune and some sun!!!. Leaving Heathrow in warm winter clothing, we landed at a series of airports (Bahrain, Karachi, Singapore and Sydney), where the weather was far from a need for winter clothing with temperatures around the century. Then to Geelong in Victoria to settle in with relatives. The first priority was to find work, not an easy task in a large country town, however I was engaged as an electrical fitter with an itinerant crew, who were building a 66/22kV zone substation. Within two weeks the scene changed because some grass fires had swept around Geelong and had done untold damage to the electrical reticulation (*network*) system. Thus anyone who could wear a line belt became a linesman. For about a month we worked dawn till dusk, 7 days a week restoring the system. I made a lot of money in that time, enough to place a substantial deposit on a new car. I then managed a move into Melbourne, where I was to set up a State sales outlet for the Australian offshoot of a well-known British switchgear company. It was not to be a success.

So I took a free transfer to Sydney to live on the beautiful Northern beaches. I soon saw an opening as a consulting engineer with MacDonald Group, an interesting period, carrying out a 33kV line design for Fiji (cyclone country), some 132kV/11kV long term planning for Perth CBD, aesthetic 132kV and 33kV structure designs for EANSW etc, etc. Then in September 1971, I returned to electricity supply, when I obtained a post with Mackellar County Council, a body formed under the 1919 NSW Act to distribute electricity on the North beaches of Sydney.

It was like being paid to work in heaven. The post involved project design, obtaining the financial approval then project managing the scheme through to completion. No switching and no standby duty; one day working on the beachfront and next day working in virgin bush to survey a new line. Routine dress was a hat, open shirt, shorts, long socks and a good pair of boots. Lunchtimes were a jog along Manly beach, catch 6 waves (body surfing) and finishing with a beer on the way back to the office!! As I say like working in heaven. However amalgamation came along with change of state government and we were swallowed up by a larger entity and the old place lost most of its innocence.

I used this as a excuse to enter Sydney University and take a Masters Degree part time. With this degree, my knowledge of road lighting design was such that I was placed in charge of a small project group to develop a computer aided design process for main road lighting. It was a great success with many innovations for its time.

I called it a day in 1992 and started my own consultancy, operating with various government departments mainly in the field of energy conservation. 1993 arrived and my wife and I took our long awaited trip, where we tramped Europe for seven wonderful weeks. On our return I worked for a short while as a project manager for a large telco, but there was not enough electrical work for me, so I returned to consulting, on a casual basis, negotiating electricity supplies for mobile phone cell sites in rural areas. Within 3 years I was appointed National Design Manager (Electrical) in the telco division and had responsibility for writing new design standards, review of existing standards, lightning protection design and earthing calculations, together with travelling to all mainland states to resolve problems.

Finally at 67 I decided I should retire from this and did so. I have received some offers to return, but the travel would get me down. Sydney is a big place and I would have wasted too much of my life in travel to and from the office. I do travel and that is with my wife, we undertake an overseas holiday every year and are ticking off a list of Pacific islands in the process. Visitors we have seen here include Mike Wood (who is due to return this year), Stan Crouch, Bert Owen , and Derek Moore (both twice).

Its been an eventful time - becoming a single parent at 37 years of age with four young children, a new marriage to a wonderful lady, Adrienne, who with her two boys brought our combined family to 6 children, and later the loss of two of my adult children to accidents. My career has been eventful, the fact of being in the supply industry opens the door to many unusual places. My natural curiosity about other people's jobs allowed me to go underground at all the working coal mines in NE Somerset, to visit Sweden under the auspices of the Electricity Council, to explore a 2.5 km tunnel being driven under the sea off Sydney, visiting new railway and road tunnels in Sydney and the biggest buzz of all to be a guest in the cockpit of a B747/400 making a night landing at the old Kai Tak airport in Hong Kong. This involved flying low over the rooftops of Kowloon and making a steep right angle turn direct onto the runway. The adrenaline flowed that evening!

That's my life in a nutshell....and it continues. I walk my dog each morning along the beach, she swims each day and I join in, when the mood takes me. In addition I am currently the voluntary facility manager at our brand new 300seat church, a task, which keeps me busy. Holidays are taken every year, so far we have seen Europe in depth, Hong Kong, Phuket, Bangkok, Fiji, Bali, Singapore, the Cook Islands, Vanuatu, New Zealand and in June are off to Noumea. My high school French is up to date (I have French language classes every week) and this will be tested in our Noumea visit.

In closing I just wish to say that I have enjoyed my life, I thank SWEB for giving me the training and the opportunity. Most of all I wish to thank all those people, who worked with me at SWEB. It was a great time and I enjoyed every moment. Best wishes **Geoff Yates**
May 2004. yatesmail@optusnet.com.au

VISIT TO EMPIRE & COMMONWEALTH MUSEUM- Temple Meads, Bristol

The wonderfully sunny Saturday of 24th April saw 24 members and friends seated at the specially opened (for us) Don Giovanni's Restaurant at Temple Gate for a well prepared lunch which we agreed was delicious and served at a competitive price.

After lunch we walked across the road to the British Empire and Commonwealth Museum where our numbers were swelled to 30 for the visit. The Museum is housed within Isambard Kingdom Brunel's Old Station (and includes the engine shed section). It is the earliest surviving railway terminus and a Grade 1 listed building. The building, having been completed in 1841, predates Paddington by 12 years, and is one of the greatest surviving monuments to the early railway age.

We were given a brief introduction to the museum followed by a short video presentation before viewing the exhibits; there were guides on hand to answer our questions. The exhibits took us through the formation of the Empire, from the East India Company days, to the 1950s. One was of particular interest to us and its illustrations are shown and its information quoted.

Underwater web

Malaysia is home to the *Palaquium* tree, which produces a waterproof, flexible sap called gutta-percha. In the 1840s British companies used it for everything from golf balls to jewellery. It was wrapped around submarine telegraph cables to stop electric current from leaking into the sea. Laying submarine cables was difficult work. A jolt in the ship or hitch in the machinery and the cable would snap. It took three attempts to lay a cable across the Atlantic. Brunel's *Great Eastern* was the only ship big enough to do it. Its massive tanks could hold 2000 nautical miles (3704 km) of neatly coiled cable. It finally succeeded in completing the cable connection in 1866.

The many other display boards are of a similar standard and there are numerous original artefacts on display, many of these are on loan from individuals and from places such as The British Museum.

I would like to thank the organisers for arranging this excellent lunch venue and visit. *Keith Hulbert.*

VISIT TO WASHFORD CROSS AND THE BAKELITE MUSEUM

On a lovely sunny Saturday morning 21 members, partners and guests assembled in the café at the Tropiquaria at Washford Cross near Williton. After refreshments we were greeted by Neil Wilson who gave us a potted history of the site.

The Washford Transmitting Station, as it was then, opened in May 1933 and marked the completion of the 'Regional Scheme' to provide a good strength radio signal to as large a number of people as possible and also give them a choice of contrasting programmes. Originally it had two 50kW transmitters and carried the South West and South Wales regional programmes. Initially it was completely self-contained and had no

public supply, power was provided by four Crossley diesel engines driving 230v DC generators with a 115cell 2000 ampere hour battery to supply emergency power and lighting. Supplies for the transmitter including the 12,000 volt H T were provided by motor generator sets. A mains supply was provided in 1942.

Over the years the station was modified and improved, leading eventually to it being de-staffed in 1985. With modern equipment being much more compact the transmitters were located to the rear of the building thus freeing the main transmitter hall and some of the machinery rooms for other uses. The aerials are still in use providing the BBC Wales service amongst others. Fortunately the building was given Grade 2 listing in 1984 and was thus saved from demolition.

A new use had to be found for the unused part of the building and after long discussions the Tropiquaria was developed using the spectacular transmitter hall for its main feature. Part of the Tropiquaria complex is an excellent radio museum which of course was the reason for our visit. Here were displayed many items from the world of wireless. These have been collected by Neil over the years and include a large number of early wireless sets and some parts from the early transmitters, including some water-cooled valves, and also many excellent photographs of the station at various stages of its life. There were also examples of early recording machines, both audio and video. Those of us, who were old enough to remember 'real' wireless with valves etc that you could see, enjoyed a nostalgic morning.

Having thanked Neil for a very interesting tour of the museum, we made our way to the Mason's Arms in Williton for lunch. The food, drinks, service and of course the company were excellent and we enjoyed a fine lunch of roast beef with all the trimmings.

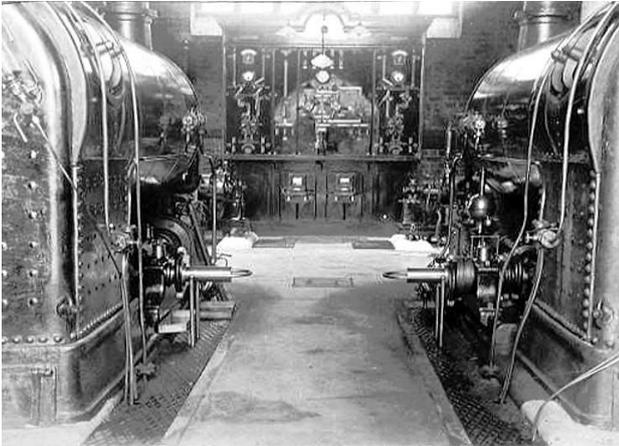
After lunch we made our way to the Bakelite Museum, which was situated in an old mill at the end of a farm track. The Museum is the personal collection of Patrick Cook who has been assembling it over many years. Patrick's father incidentally worked for SWEB in the Legal Department. Patrick said that it all started when he acquired a Bakelite cased radio, he became interested and it spiraled from there. Although it is called the Bakelite Museum, the collection contains examples of other plastics, from Celluloid through Bakelite to Urea Formaldehydes, which can be produced in white and brilliant colours. Roger Hughes, one of our members, pointed out some Bakelite toys from which things could be constructed. These included a Bakelite house, which appeared to be the inspiration for many of the pre-war houses in Weston-super-Mare. There are also many examples of electrical equipment, including cookers, fires, lights etc.

Patrick kindly provided some tea and we finished the afternoon sitting in the garden of the mill enjoying the sunshine and a chat. Many thanks to our Chairman, Chris Buck, who organized the trip. By the way, did any one else notice the Trabant car parked in the car park?

John Gale

TYNTESFIELD

We have been beaten to finding out something about the electricity at Tyntesfield by the Chartered Institute of Building Services Engineers. Mr Ferris has been allowed to look at the library and has found a photo of the generating station as it was. We have been asked - what is the plant shown? We have decided that the photo shows two steam boilers of the railway engine type with an electrical switchboard in the distance with the label Troughton & Young Ltd.



PLYMOUTH BOAT TRIP REVIEW

Mid-morning on Sunday 27 June sixty members and guests assembled at Phoenix Wharf, in the Barbican quarter of Plymouth, to embark on a cruise around Plymouth Sound and a short way up the river Tamar. Some of those travelling from afar had taken the opportunity to extend their visit by booking a night or two in the area to enable some additional sightseeing. On the Saturday the weather had been pretty dreadful and during the early evening the famous Devon mist had rolled in, reducing visibility to a few yards on the Hoe. This was not a good omen for the following day as the sea was not even to be seen!

Fortunately, in complete contrast to the previous day, the following morning dawned dry and sunny in readiness for our trip. At 11.30am we cast off and our boat – the Totnes Castle – started our journey by cruising up Cattewater, which is effectively the mouth of the river Plym. Our route took us past Mount Batten Point and on to the site of the now long gone Plymouth A and B Power Stations. The only evidence remaining of the past use of this site was the presence of a grid line and substation. The boat turned just before Laira Bridge and we then retraced our route almost to our starting point and thence across the Sound passing in front of the Hoe. Good views were provided of both the old and not so old – including the Citadel, Smeaton's Tower, the Lido and the Plymouth Dome. The post-war Civic Centre, with its cantilevered roof, stood out clearly in the background. Our route continued past the entrance to the dock now housing the vehicle ferry terminal for the Roscoff and Santander routes and on around Devil's Point into an area of water known as Hamoaze – the mouth of the river Tamar.

By now it was nearing lunchtime and our crew had thoughtfully decided to moor up at a nice sheltered and very scenic spot near the village of Cremyll, so that we could partake of the buffet lunch that had been included in the trip. There was no chance to escape from the boat for we were moored a short way off shore. However, we had no need to embark as there were ample supplies of food and a well-stocked bar on board!

Suitably replete our voyage continued past Mount Wise and on up to the Tor Point ferry crossing where all three ferries were in operation. Our journey continued past the extensive Devonport Dockyards and the Royal Navy base, where a number of nondescript battleship-grey Navy ships were moored. Rounding a bend in the river the famous Brunel railway bridge (completed in 1859) came into view. Unfortunately the spectre of this marvel of civil engineering is now spoilt by the close proximity of the modern road suspension bridge. As if to order, as we approached closer, a train could be seen making the slow crossing of the bridge on its journey into Cornwall. Immediately up-stream of the road bridge, our boat turned around, thus ending our voyage up the Tamar. However, our trip was by no means at an end. Having retraced our route back to the Sound we continued out towards the open sea. The going now started to get a bit 'up and down' as the boat moved away from the protection of the shore and the sea became decidedly more choppy. Some may have wondered if we were intending to retrace the voyage of the Mayflower but, in fact, by special request we were making for the Plymouth breakwater.

We were told that Breakwater was designed by John Rennie, the renowned Scottish engineer. It was started on the 12th August 1811 and created by barges dumping stone for 37 years, transported five miles from a quarry at Oreston, near the Barbican. A total of 3,670,444 tons of stone was deposited, together with 22,149 cubic yards of facing masonry, and the length above low water of 5,100 feet was achieved by 1848 well after John Rennie's death in 1821. Who paid for it? The Admiralty. The amount of stone in the Breakwater is said to be equal to that of the Great Pyramid!

Having skirted along the shore side of the breakwater from end to end we turned back towards shore and civilisation, skirting around Drake's island before finally returning to our starting point at Phoenix Wharf. According to the O.S. map, our cruise is estimated to have covered around 17.5 nautical miles.

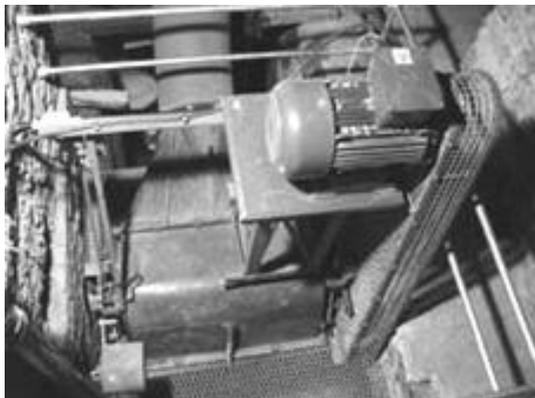
Many thanks are due to Ted Luscombe, chairman of the south sub-committee, for making all the arrangements for this trip as well as providing an excellent and very detailed on-board commentary in which many sights of interest and historical facts were pointed out to us. Thanks also are due to our Secretary, Peter Lamb, for supplementing Ted's commentary with the historical information relating to the construction of the Plymouth breakwater.

Chris Buck

SOUTH SOMERSET MILLS

A group of Mill-owners have got together to pool resources and know-how to install hydro-generation at their the Mills. There are 12 Mills in the group, but only one, Gants Mill, has completed an installation so far of a 12kW turbine.

The feasibility study was carried out by Hydro-Generation Ltd of Tiverton. The turbine was manufactured by Valley Hydro Ltd of Pontsmill, Par in Cornwall. The mains connection unit was made by G.P.Electronics of Bovey Tracey. It is pleasing to note that the firms involved are all from the West Country.



The small alternator fixed on top of the water turbine

If anyone is interested in visiting, Gants Mill, it is open on Thursday and Sunday afternoons from May to September. Give Brian Shingler a ring on 01749 812393 or visit their web site www.gantsmill.co.uk



View of Mill and outflow

OBJECT OF DESIRE*, a cautionary tale

During the dark January days I went to give my talk on the history of domestic electricity to "Cleckheaton Antiques Circle". About 100 members gave me a good welcome and we stayed late into the evening talking about olden times. One of my slides is of a Vitascope electric clock. These were made in the Isle of Man and were about 30cm high and maybe 20cm square. They had a clock face on the lower half of the front (without a glass) and above, behind a curved glazed cover was a sailing boat which rocked about on the sea. The sky changed colour from red at dawn to blue at noon and red at dusk. I asked if anyone knew where one might be found, not expecting any response. I was surprised when

a lady said "If you want one there's one in Tennants' Auction Rooms" in Wensleydale, a good 50 miles away.

I soon phoned Tennants and they confirmed they had such a clock, which they thought, was "in good working order". It would be in a general sale on 28 February. I decided to go to the viewing day on 27 February but I was defeated by heavy snow. The only alternative was to travel early on the sale day and arrive by 8.30 a.m. to view the object (of desire). So it was that I left home at 6.30 a.m. and picked my way at dawn along very icy roads to collect an old friend, John, from near Wakefield. He was "just coming for the ride" but I figured he could be useful with the shovel, if the snow was deep. We had a fast run up the M1 and A1 to Leeming where we turned off into Wensleydale. Here the road was deep in frozen slush. However, eleven miles further, the sun was shining when we arrived at the Auction Rooms.

We found the o.o.d. (lot 418) looking somewhat careworn and with no minute hand. We twisted the start knob and were a trifle discomeknocked to observe that the hour hand moved and the boat rocked but the minute hand stub stayed still. This was not good news. The boat had some amateur painting gobbled on its hull. We cheered ourselves up with a pot of tea and a bacon butty. We looked on the bright side. The bad roads would reduce the bidding competition. The apparently less than pristine condition would put off all except the idiots (me?). Nobody else seemed interested in the object. I could get a real bargain and make a new minute hand, hope the gearing was easily repairable and repaint the boat hull properly.

With growing optimism I got my sale number, 969 (must get it right way up) and we sat through two hours of sale of Clarice Cliff cups, Moorcroft pottery and many much less desirable items. The auctioneer frequently expressed surprise at the low prices being made. About £20 to £50 or £60 seemed the norm. It was looking good. I made various mental estimates of how much to bid, mostly in two figures as it might not work. Eventually o.o.d appeared on the table. I fingered my card nervously. The auctioneer announced (to my distinct unease) that this was a very nice item that did not come up often. He did not mention the problems. He then shattered my dreams by stating he had a telephone bid from Durham, where the roads were snowbound, for £240! I looked at John. He looked at me, saw my grimace, and said "T' ball's over t'wall". (Yorkshire for "The situation in which we find ourselves is far from ideal"). And it was! No way was I paying that much for such an object in such a doubtful condition. "Sold!" Our little adventure was over and we left. We wondered what the telephone buyer would think of his one-handed clock.

We hurried south and the car became white with salt spray. On our return we went to the pub with our wives and had a good meal in front of a roaring log fire at the close of a day full of interest. Could we ask for more?

*"Objects of Desire" – Design and Society since 1750 by Adrian Forty, Thames and Hudson 1986 and still available.
Colin Hill

MARITIME RENEWABLE ENERGY UPDATE

Based on a Conference held in Cardiff 4 March 2004, which Bill Harris attended, and on News items published subsequent to Histelec News April 2003.

OFFSHORE WIND POWER

The successful completion of the N.Hoyle wind farm and the award of leases for Round 2 offshore wind farm development paves the way for the biggest expansion yet seen for abstraction of renewable energy. The process will be facilitated by the recent design of specialist equipment for the rapid installation of offshore columnar turbine supports. As a result pressure for output from on-shore farms should reduce.

Progress on Round 1 (18 sites). Blyth 2 x 2 MW completed in 2000, N.Hoyle 20 x 2 MW completed Nov. 2003, Rhyl Flats 30 x 3.3 MW approved, Suffolk Gabbard and Galloper Sandbanks 26 km, offshore £500M contract work in progress on 140 turbines, Herne Bay 30 x 3.33 MW 8.5 km offshore agreed, Scooby Sands 30 turbines under construction, Barrow 30 turbines agreed, Scarweather (Porthcawl) 30 x 3.6 MW 4.2 km offshore. Arklow 30m south from Dublin £600m project for floating buoy windfarm "Ocean Resource" with "Sure Engineering". Prototype being tested. Launch in 2005.

Plymouth based 'Seacare' has devised and developed 'Excaliber' a bespoke monopile foundation system using a self contained jack-up platform to handle and drive 4m. dia. turbine columns. Average time taken at N.Hoyle to install each shaft 89 hours incl. down time.

The Mayflower Energy Company has the 'Mayflower Resolution', a 1500ton self-propelled vessel with 6 retractable legs. In Feb. 2004 it underwent testing at Falmouth and is designed and equipped to transport and position 10 turbine columns in a 14 day round trip.

In Dec. 2003 the Government selected 12 developers for Round 2 to produce electricity from 15 sites by the end of the decade. The total generating capacity expected to be between 5.4 and 7.2 GW. The farms would be built on the shallow seabed access of the Thames Estuary, greater Wash, and the N.W. coastline (DTI Review March 04).

TIDAL CURRENT

Lynmouth. Seacore and MCT, a single rotor 300 kW operated in ebb Tides in 2003. A second rotor to be added in 2004. Power is cabled to shore.

Milford Haven. T.H.G.L. Babbie. 5 no 8m. dia. rotors to be mounted on a 40m. open triangular 50 ton frame early 2004. If the proposed 12 months trials are successful, 20 turbines will be mounted in a 80 m triangular steel base.

Yell Sound, Shetland. E.B. 'Stringray' oscillating hydroplane installed in Sept. 2002. Lancs University. E.B. Stingray Frond 5 MW being tested on sea bed, hope to be viable 2006. Farms to follow.

WAVE POWER

Islay. Wavegen LIMPET. on shore oscillating water/air column using Wells blades has been feeding power to grid since 2001. Capacity 500 kW.

Plymouth Wavegen. Anchored multiple cylinder wave

airflow SPERBUOY 1 MW undergoing trials until 2007. Western Isles Wavegen have £2.1M DTI grant.

Orkney Ocean Power Delivery has £6m Venture Capital to instal by 2005 Seasnake a 3.5m. dia PELAMIS tube 150m long placed end on to waves - capacity 3 MW. A 1/7th prototype has been tested. A full scale prototype to be tested at Orkney Test Centre April 2004.

Milford Haven. A Danish Company "Wave Dragon" applying for planning permission to site a 70 MW(?) wave power plant at Milford Haven. The sloping sides of the 237 ton prototype moored offshore are overtopped by waves and swell, which discharges vertically through centrally placed turbine outlets. Trials of the system have been held in Denmark for 7 years. Financial backing for the Milford Haven installation has been promised by Europe and W.D.A.

The Wave Hub. The S.West Regional Development Agency has committed £500,000 for research to locate a suitable site off the Cornish Atlantic coast to place an electrical terminal to be known as a Wave Hub. This would be located about 9miles out to sea and would take in power from up to 30 wave machines and transfer it into the National Grid. The Plymouth Co, Orecon has expressed interest in connecting 9 of their 1 MW oscillating water/air column generators by 2009.

TIDAL LAGOONS

Swansea Bay. Environmental Trust and Tidal Electric. Consultants are studying the feasibility of creating a £30M. 30 MW Tidal Lagoon in the shallow waters of the Bay. The Lagoon would be circular, divided by internal walls into 3 lozenge shaped compartments. These would be used to extend period of generation over the tidal cycle and their shape would tend to inhibit siltation.

The perimeter and internal walls will be formed of rock, gravel and sand and would barely extend to HWOST. Production cost estimated to be 2.5-3.0p per kWh.

Rhyl A 20.5sq. m. 432 MW Tidal Lagoon is being considered for the shallow waters off Rhyl.

SEVERN BARRAGE Penarth - Weston-super-Mare. The D of E, CEGB, STPG last reported in 1989. The estimated capacity of 216 x 40 MW turbines = 8640 MW 6% of U.K. demand. In 2001 the estimated cost of this predictable and renewable resource was £12.0 billion requiring 7 years to build. Tidal flats would be reduced by 50%. In addition to Carbon credit, there would be security of resource and other benefits. The turbines can be used as pumps to increase storage. Release from storage can be phased to secure best unit price.

Bill Harris

VICTORIA'S LIGHT

(Quote from Elect. Engineer 11th Oct. 1895)

The other week an alarming report was circulated, only to be immediately contradicted, as to the abhorrence in which Queen Victoria held the electric light. Now we are informed, doubtless on equally reliable authority that the Empress of Austria has a "positive horror" of the same illuminant – indeed of gas also – inasmuch as she "forbids the use of anything, but the purest wax to light up the Palace, and it is "we are told" very amusing to see the servants, to whom the half burned candles belong by right, make a rush to blow them out the moment the last guest has walked out of the rooms"

ELECTRICITY IN BRIDGWATER

This October will be the centenary of a public electricity supply in Bridgwater. Initially the Borough Council obtained powers in 1899 to provide a supply, but opposition from the local Gas Company and concern about the potential cost to the local ratepayers led to the abandonment of the scheme in 1901. Not to be frustrated two of the Councillors were instrumental in establishing a private company, the Bridgwater & District Electric Supply and Traction Company Ltd in 1902. They obtained a new order in 1903, laid the foundation stone of their works in Mount Street in March 1904 and were in business by October of that year.

Initially supply was limited to the Borough and parts of Wembdon but in 1928 the company obtained powers to extend their supply to the whole of the Bridgwater Rural District Council area. Supply was DC, generated by gas engines fuelled with "water gas" produced on site from anthracite. Batteries covered night supplies and in 1911 a diesel set was installed followed by three more gas engines in 1921-3. Generation ceased in 1935 when the CEB provided a supply at Mount Street from their 33kV "secondary" network from the 132kV substation at Bridgwater Main. Much of the network remained DC until the 1940s. (I lived in Quantock Road until 1946 where we were on dc and remember being intrigued by the blue green glow to be seen through the windows of the 11kV substation that fed our part of the town.)

Several interesting facts emerge from the Company's records. On 1 May 1904 a 24 year old Harold Walker was appointed Engineer & Secretary. He remained in this position, becoming Managing Director in 1933, finally retiring from this position in 1948 just before nationalisation. Not a bad record! It would seem that he had a "carte blanche" on engineering matters as there is little recorded in the Company minute books about the system - but lots on share transactions!

The company remained independent throughout its life - there were several overtures, in particular from the North Somerset Company, but all were rejected.

The original building in Mount Street still exists, virtually unchanged. The foundation stone, laid by Alderman Peace, the original Chairman is still there. The original office building is now occupied by Thompsons, a firm of ironmongers, but WPD still occupy the yard and part of the main building. .

Unusually there is little or no photographic record of the power station or their network. Colin Hill, who produced an exhaustive history of the Company, when working at Hinkley Point, failed to come up enough information despite an extensive trawl through the local press records.

To mark the centenary the Blake Museum in Bridgwater staged an exhibition entitled "Illuminating!" during June & July. We loaned the Museum Colin's 'opus' and what records we had of the Company, which were passed to SWEB at nationalisation and subsequently found their way to Cairns Road. I hoped that the research by the Curator at the Museum would bring additional material

to light but so far nothing has materialised. If any member has anything of interest, or knows of material, which would enhance our records please let me know.

Roger Hughes



Mount Street premises today – photo Roger Hughes

TELEVISION BROADCASTING IN THE EARLY STAGES

The B.B.C commenced Broadcasting Television Programmes from the Alexander Palace in 1936. To have the system installed, at that time, was approximately £120. The average wage was then £3.00 per week. Very few were able to have it installed, because it was so expensive. The average wage today is £450.00 per week. To have it installed at today's values would cost £18,000. I doubt if many would have TV today at that amount.

In 1938, the first person to have the system installed, where I used to live, was a publican, named Tom Munden, who kept the Caernarvon Castle Hotel, near Hampton Court Palace. When he told us he was considering having a "Television System" installed. We doubted his sanity. We tried our hardest to make him change his mind, but to no avail. He went ahead and had it installed in the very large Lounge Bar.

At that time, on Monday nights, a programme was being broadcast from the National Sporting Club, in London, showing Boxing Matches. Remember the screen of the Television Set was approximately 12 ins. square. When it became known that this Programme was to be shown on Monday nights in the Caernarvon Castle Lounge Bar, people flocked in to see this wonderful thing. Remember, Television, at that time was very exciting and very new. Not only the Lounge Bar was full to capacity, but out in the street people crowded around the doors and the windows to get a glance at this wonderful new invention and hoping that at some time they could have the same in their own home. Not only was Tom Munden's decision to install the "Television System" a huge success, but it also proved to be very profitable.

What a difference today, when we take Television for granted, never taking into consideration what it cost originally. Television sets are very cheap today, and nearly everybody has one. What would we do without it?

Harry Cardy

(Ed. Listen to the radio!)

IRONBRIDGE

The Bristol Evening Post featured an article in March about a rich Bristol industrialist and benefactor, Richard Reynolds. Well, who was he, you may ask? Those of you who went to the Ironbridge Weekend four years ago may remember his name, because he assisted Abraham Darby, who also came from Bristol. He was sent to Ironbridge by his father's friend Thomas Goldney. Reynolds married Darby's daughter, Hannah, and managed the Coalbrookdale Works for Darby, particularly after Darby's death in 1763, whilst Darby's sons were growing into manhood. He perfected a process for producing cast iron from iron ore, which was patented and made immense profits for the Works and himself. He returned to Bristol a very rich man and died in 1816. The newspaper suggested that he gave away £200,000 (in today's terms over £15M), which is more than Edward Colston, who is a more well-known Bristol benefactor.

APPLIANCES 1895

Barrie Phillips was thumbing through an old book of 1895 vintage and was surprised to see "Electric Heating and Cooking Appliances" described in some detail. The illustrations included an electric saucepan, frying pan, iron and more bizarre - an electric cigar lighter.



Electric Cigar Lighter 1895

Many appliances were designed in the 1880's, particularly heaters and irons, which were the first appliances to be developed after arc and incandescent lighting became available, but of course there was little demand for them at that time and they were relatively very expensive.

MORDEY ALTERNATORS

We were approached by an engineer in Malta for information on Mordey Alternators. This has been a difficult research, since we do not have a lot of information on manufacturers. It did not appear that Mr. W. Mordey ever worked as his own company. We found that Mordey designed alternators were made at two Brush sites, Loughborough & Victoria Works, London.

DEATH OF MEMBER

We are sad to report the death of Cyril Gibson, who was very supportive with electricity history studying in that subject for a BSc degree through the Open University at what one would describe as a very mature age.

MEMBERS NEWS

John Heath

John has had an operation to remove a tumour from his lower bowel and is doing well, after some difficult times.

David Whitehead

David and his wife are moving to Amersham to be closer to their daughter. We will miss his CEGB knowledge and are indebted for his donation of much CEGB archival material. Surprise, surprise, we have a member at Amersham, his name is Julian Hargreaves.

John Coneybeare

We are pleased to report that John has been elected Chairman of Bristol's Retired Professional Engineer's Club. He has been Secretary for a few years. Many of our members are also members of RPEC.

John Ferrier

John was pretty excited in March, since he had been invited to a wedding in May at the Whitsunday Islands, Queensland, Australia and was proposing to make a big tour holiday of the visit. I am sure we will hear more about this holiday.

Brian Byng

Brian is retiring as a JP having served both in Bristol and Plymouth for many years.

Trevor Dolby

Trevor, who had a heart attack last year, has had a stroke, but is making progress back to good health.

NEW MEMBER

Many of you will be pleased to know that Glyn England, past Chairman of the CEGB, has joined the Society and by coincidence we are publishing one of his papers as a supplement with this issue.

FOR YOUR DIARIES – a Reminder

PROGRAMME for the NEXT HALF YEAR

Fri/Sat/Sun. WEEKEND AWAY IN

8th/9th/10th Oct. CORNWALL

Staying at Falmouth, including coach trips to the Levant Beam Engine, Porthcurno Telegraph Museum and many other sites.

Sat. 30th Oct. MEMBERS' OPEN DAY
– At Cairns Road

Project helpers to be given an in-house buffet lunch, followed by a members tour and talk in the afternoon by Colin Hill. Members' Lunch at the Cock O' the North.

Sat. 20th Nov. "FAMILY HISTORY
FACT or FICTION"

at Clarence House, Portishead 2.00pm

Talk by Pat Hase, with sit-down meal beforehand.

Sat. 29th Jan. 2005 ANNUAL LUNCHEON

At the Batch Country Hotel, Weston-super-Mare, visiting the Helicopter Museum in the morning. Speaker : Bob Malone, Chief Helicopter Pilot of WPD.

Please note change of date

NEXT EDITION

This newsletter is produced every four months. Please send information, articles, photographs or letters to :- Peter Lamb at 35 Station Road, Backwell, Bristol BS48 3NH or telephone him on 01275 463160 Or e-mail him on lambvandp@uku.co.uk