



2003 PROGRAMME OF EVENTS

Every Monday	10.30 am.	Coffee at the Denton Lounge, Worthing Pier.
9 th Apr.	Wednesday	Outing: "Explosion – Museum of Naval Firepower" and /or the "Royal Navy Submarine Museum", Gosport
17 th Apr	Thursday	Coffee - at Spotted Cow, Angmering
24 th Apr	Thursday	Coffee - with Partners at Beach Hotel, Worthing
13 th May.	Tuesday	Outing: Brighton's Victorian Sewers
15 th May	Thursday	Coffee - at Spotted Cow, Angmering
29 th May	Thursday	Coffee - with Partners at Beach Hotel, Worthing
18 th Jun.	Wednesday	Outing: Chichester Harbour
19 th Jun	Thursday	Coffee - at Spotted Cow, Angmering
26 th Jun	Thursday	Coffee - with Partners at Beach Hotel, Worthing
16 th Jul.	Wednesday	Garden party
24 th Jul.	Thursday	Coffee - at Spotted Cow, Angmering
31 st Jul.	Thursday	Coffee - with Partners at Beach Hotel, Worthing
21 st Aug.	Thursday	Coffee - at Spotted Cow, Angmering
28 th Aug	Thursday	Coffee - with Partners at Beach Hotel, Worthing
4th Sept	Thursday	Lunch at Ham Manor Golf Club (New Function)
9 th Sept.	Tuesday	Annual General Meeting.

All Talks and Meetings will commence at 2.30 pm and be held in the Chichester Room, Field Place, Worthing unless another venue or time is indicated.

Timings for visits and outings will be as printed in the detailed description of the activity and on the appropriate reply slips.

Coffee mornings commence at 10.30 a.m., except at The Beach, which is from 10.45 am Please note change for June, July and August, The Beach Hotel has accepted our booking for coffee mornings during these months.

New Members

No new members to report this month.

Tea Service at Meetings

The following paragraph is an extract from the January Newsletter

Provision of the tea and biscuit service at our regular meetings has recently involved Hermann Rummeli and Brian Buckroyd (Committee Members) leaving the lecture room for a few minutes each time to ensure that everything is ready for the break in proceedings. It would be appreciated if we could have a few volunteers who could be called on occasionally to carry out this task rather than always expect Hermann and Brian to miss part of any talk or presentation. If you feel you could assist once in a while could you please give your name to a committee member – if we have sufficient volunteers, perhaps we could organize a rota so that no one has to miss more than a small part of one talk per session.

Unfortunately we have had no volunteers to assist with the tea service. We have therefore had to investigate alternative means of providing this service. We are now going to pay Field Place to provide the refreshment. This will mean the cost will increase, from the current 25p to 50p and this will be collected at the point of service rather than at the door.

Events April 2003 - July 2003

Outing: – Royal Naval Submarine Museum, &/or Explosion Museum of Naval Firepower, Gosport. Wednesday the 9th April.

The first summer outing for the RCEA for 2003 will take place on the 9th April. In Gosport there are two museums, which we believe will be of interest to members and their partners. These are the Explosion Museum of Naval Firepower at Priddy's Hard, the location for the Naval Munitions factory and a state secret for 200 years until it closed in the 1980s; and the Royal Naval Submarine Museum at Haslar which has exhibits relating to the submarine service and a docked submarine that can be visited.

The Explosion Museum is located on the shoreline of Portsmouth Harbour and provides excellent views out over the harbour to Portchester Castle, Portsdown Hill, the reserve ships of the Royal Navy, and the rear of Portsmouth Dockyard.

The Submarine Museum is located to the south of Gosport Town center, next to Haslar Hospital on one side and the Haslar Marina on the other. It is only a mile or so from the sea walls over-looking the Solent, the Isle of Wight and Southsea. Take the coast road back to Fareham and the M27 via Stokes Bay and Lee on the Solent to see the freight and transporter ships assembling off the Isle of Wight prior to departure for the Gulf.

Take your binoculars with you if you have any.

The day can be divided up to suit individual members' requirements. The Explosion Museum will be visited in the morning, members and partners meeting at the Museum at 10.30 am. for a conducted tour. For this part of the day, lunch can be taken at the museum if required and will be followed by a visit to the Submarine Museum in the afternoon, meeting at the museum at 2.00pm. with a conducted tour starting at 2.30pm.

For those members who would prefer a less tiring day, a visit to one or other of these two locations is recommended.

Both Museums have been adapted for wheelchair users except for the visit on board the submarine. The submarine is suitable however for visits by people who can manage to walk short distances, since there are suitable resting places in each compartment.

The Explosion Museum staff will set up tables for lunch in the cafeteria for our party.

Cost of lunch including tea or coffee at the Explosion Museum – typically about £ 5.00 with a choice of two or three hot meals available.

Similar facilities exist at the Submarine Museum where costs are probably comparable.

Cost of entry to both Museums for a party of 10+ £5.00

Cost of entry to Submarine Museum – party of 10+ £2.50

Directions for travel: -

- **Explosion Museum – M27 to junction 11. Follow A32 towards Gosport (about 2/3 miles before a left turn just after the Naval Ordnance Depot) and signs to Explosion at Priddy's Hard. Explosion is at the end of Heritage Way. Free parking.**
- **Submarine Museum – M27 to junction 11. Follow A32 to Gosport (4 /5 miles to Gosport Ferry). Pass the Ferry and turn left into Haslar Road (about 200 yards on left after Ferry). Cross Haslar Bridge and the Museum is 2nd entrance on the left. Free parking.**

Please Telephone Glyn Mathias before the 8th April for late bookings 01903 859191

Outing: Brighton's Victorian Sewers Tuesday 11th May at 11am.

Please note change of Date and Time

Tour of Brighton's Magnificent Sewers – A Victorian Underground Masterpiece.
Construction on these sewers was started in 1871 and completed in 1874. During the construction thirteen 20-inch diameter pumps, driven by nine engines, were used to pump an estimated 15 million gallons of spring water every 24 hours. The design of the sewers included a 5-foot and then 7-foot diameter brick built interceptor having a total length of more than seven miles from Brighton/Hove to the outfall at Portobello. The tour, which lasts about one hour, starts at Arch 260 under the Palace Pier. Suitable clothing and footwear must be worn and members are advised that climbing/descending short ladders is involved.

The numbers will be limited on this tour to a maximum of 25; it is therefore essential you apply early if you wish to participate. As usual a reserve list will be prepared for any in excess of the 25 allotted places.

The cost will be £7.00 per person.

(We are investigating the possibility of having a 'Pub Lunch' afterwards for anyone who may be interested.)

Please return reply slip on last page

Outing: Chichester Harbour Cruise Wednesday 18th June at 2.30 pm.

A tour of the beautiful Chichester Harbour aboard the Wingate III passenger boat. We shall be able to see some of the wide variety of habitats along the 48 miles of shoreline, which includes sand dunes, mudflats and shingle banks. This area is a valuable refuge for sea birds and other wild life. We understand high tide is at 3.30pm. so we hope to see many of the vessels that use this harbour. For those who wish to, lunch can be taken at a nearby hostelry, prior to the trip. Please indicate if you would be interested in having lunch and we will advise you of the details.

The numbers will be limited on this tour to a maximum of 52; it is therefore essential you apply early if you wish to participate.

The cost of the trip will be £5.00 per person.

Please return reply slip on last page

Garden party: 16 Tamarisk Way, East Preston Wednesday 16th July

A Garden party will be held at the home of Ann and Glyn Mathias on the afternoon of Wednesday the 16th July. It is intended as a purely social occasion to allow members and guests to chat and relax (hopefully in the sun). Soft drinks, tea, coffee, and refreshments will be available throughout the afternoon, so why not come, meet old friends, make new ones and enjoy an English Garden Tea.

The cost will be £3.00 per person to cover catering for the refreshments and drinks.

If you are coming, it would be helpful if you could bring a folding garden chair with you, since these may be in short supply.

Please return reply slip on last page

Proposed Extra Function – September 2003

Since the lunch at Northbrook College was a success this year, and it was over-subscribed, it has been suggested we hold another lunch later in the year at Ham Manor Golf Club. The committee has therefore booked this venue on the 4th September for such a function.

The cost of the lunch will be £17.50 exclusive of drinks. We will be not be limited to a maximum number on this occasion.

If you would like to attend can you please complete the reply slip at the end of the newsletter. For this one off function, we have set an early return date for these slips to enable us to complete the formalities of the booking system as soon as is practical.

Please return reply slip on last page

IMPORTANT DATE FOR YOUR DIARY OCTOBER 14th 2003

Last year, on the recommendation of one of our members, we applied to RAF High Wycombe for a visit from their Promotion Team and were told that they did not have a slot available in their 2003 programme. Subsequently we were offered Tuesday 16th October. The theme of their programme is such that it has wide ranging interest and we look forward to the ladies joining us.

Events September 2003 - July 2004

Next year's calendar is now taking shape and it is likely the programme will include most of the following activities: -

Talk,	R.A.F. Presentation Team
Visit,	Fordingbridge plc,Fontwell.
Cooch Lecture,	Proposals still required

Talk,	Satellites, speaker Peter Hurley, Surrey University.
Talk,	Ships Hulls since Cheops,
Visit,	Surrey Space Centre, University of Surrey, Guildford.
Outing,	Glyndebourne.
Talk,	Royal Armouries, speaker Nicholas Hall.
Talk,	Modern Railways, speaker Derek Webb or colleague.
Visit,	Rolls Royce Ltd., Goodwood
Outing,	Tangmere Aircraft Museum.
Outing,	Bluebell Railway and Sheffield Park
Visit,	Brighton Engineerium in steam.
Outing,	Borde Hill Gardens
Outing,	Brooklands Motor and Aviation Museum

Many thanks to all who submitted ideas or volunteered to talk to the Association. Even though some contributions could not be included, all proposals are noted, in the event of amendments to the above, or for future programmes, so please keep your ideas flowing, to Colin Harrison or any committee member.

REPORTS

- **Visit:** H & S Aviation, Portsmouth, Tuesday, the 14th January

Some twenty members visited one of H+S's sites on the old Portsmouth airfield for a very interesting tour of their repair/test facility. The visit started with an informative presentation covering the origin and location of the company. H+S has three sites on the former Portsmouth Airport, which itself was formerly a farm (Highbury Farm I believe, owned by the Foote family). However after two incidents of passenger planes skidding on the grass runway and ending up on the adjacent main road the airport was closed to commercial flights and ultimately to private light aircraft. H+S aviation was originally called Hampshire and Sussex Aviation and was started after the Second World War to break up surplus aircraft. The company progressed to aircraft maintenance but as the complexity and regulation of aircraft increased it, in common with many other companies, had to specialize into maintenance of specific manufacturers and component parts (e.g. engines or air-handling units) of aircraft (including helicopters).

After the presentation we divided into groups to be shown the work on this particular site. The site is divided into a number of areas each handling a specific "component" together with some support areas which provide shared facilities (e.g. project management and metal treatments). Within each of these "component" areas a team work who can strip down, check, replace as necessary and rebuild the unit to its original condition. They have all the correct documentation provided and updated by the manufacturer and at every stage they record full and accurate details of all the work carried out. The site also has test rigs for running, as necessary rebuilt units before they are returned to the aircraft operator.

The tour finished with tea and biscuits and an opportunity to ask further questions. An interesting and informative visit. (GM)

- **Talk: The Volks Railway, Brighton**

by Ian Gledhill, Chairman of Volks Electric Railway Association, 11th February.

A near capacity audience of members heard a very interesting talk on this unique railway covering the whole period from Magnus Volk's family background to plans for the future development of the line.

Born in Brighton in 1851 the son of an émigré German clockmaker, Magnus was encouraged by his father into practical activities, his particular interest being electrical engineering. In this field he developed many novel pieces of equipment including the first telephone installation in Brighton.

His interests culminated in the construction of the railway. This was only the second electric railway in the world; the first was a small circular line in Berlin built by Werner von Siemens. That was dismantled many years ago so Volk's is now recognized as the world's oldest electric railway.

First opened on 4th August 1883, the line now runs from east of Palace Pier to Black Rock with an intermediate station where the depot and workshops are located. The track gauge is now 2ft 8¹/₂ins and the nominal line voltage is 170v. The line has owned a wide variety of cars all of which Ian described in some detail, showing slides of most of them.

In addition to the railway running along the top of the beach, Volk built a line from near the intermediate station of the beach top line to Rottingdean, running on racks of 18 ft 0 ins gauge on the flat part of the seashore well below high water mark. The passenger saloon was mounted on a pier like structure. This line was very short lived, opening in November 1896 closing in June 1902.

Whilst Brighton and Hove City Council own the present line, Ian's Association is very active in running and promoting the line and is working towards its extension to its original western end terminal at the Palace Pier and eastwards nearer to the Marina.

For members with a deeper interest in the railway there is a booklet, "Volk's Railways Brighton" by Alan A Jackson, published by Plateway Press, ISBN 1871980 18 6, which is still in print.

- **Outing: Royal Pavilion, Brighton** 18th February.

A group of 28 members, partners and guests spent a very enjoyable afternoon being shown around the Royal Pavilion. We were fortunate to have an enthusiastic and knowledgeable young lady as our guide. Like many of the group, we had previously visited the Royal Pavilion on our own but the benefit of a guide, particularly a good guide, made the visit a much more enjoyable and informative experience. The group also enjoyed a welcome cup of tea/coffee and a biscuit before concluding our visit. (GM)

- **Talk: Mauritius – “Your holiday island power supply”**

by Ray Wort, member, 11th March.

This talk was based on a report prepared for the Ministry of Energy in Mauritius as part of a comprehensive review of the electricity generation and transmission facilities on the Island. The Ministry had called for a number of issues to be addressed within the final report one of which was a plant status report for all of the main generating facilities on the Island.

The island of Mauritius is in the Indian Ocean, about 1000 miles east of Madagascar. The island climate and its generally poor soil make it an ideal place to grow sugar cane which is the main crop seen growing everywhere. Sugar and tourism are the main industries.

In 2001 the Island had an installed capacity of 478 MW and a maximum demand approaching 300MW. Power demand has been increasing at the rate of approximately 8% per year and this is forecast to continue.

The island generators fall into five categories; Hydro which is limited because of the island topography and short wet season; Diesel, relying on imported fuel principally from Madagascar; Coal Fired, relying on imported fuel principally from South Africa; Gas Turbine using imported Gas Oil; and Bagasse Fired which uses the fibrous remains of the Sugar cane after it has been processed.

There are ten hydroelectric power stations on the Island and they have a total nameplate rating of 53MW. In a good season, these stations can produce 10-12% of the annual Mauritius power demand, but in a bad season, such as during the drought in 1999; this output can be as low as 2%. Utilization of hydro plant is therefore relatively low, simply due to the limited quantity of water available, which is clearly is a function of rainfall. 70% of the rainfall arrives in the cyclone or rainy season, which may come for two months at any time between January and May.

The diesel electric generators provide a total capacity of 230MW and typically produce between 50% and 70% of the daily Mauritius power demand. The diesel engines and their associated generators are of a variety of ages; many are extremely old, are costly to operate and are in urgent need of replacement.

The island has one open cycle gas turbine station of 77 MW capacity. In recent years these station has supplied 1% or 2% of demand. During five, of the last 14 years, the Gas Turbines have provided over 10% of the annual demand, with a peak of 19% in 1996. This is extremely expensive way in which to produce power. This site is primarily used for emergency generation during periods of plant failure elsewhere on the system.

There are six bagasse-only fired power stations on the Island. Bagasse is a peat like fibre, which is all that remains of the sugar cane after it has been crushed and processed. This fibrous material can be burnt in much the same way as any other fuel. It is however very low in calorific value and therefore significantly more of it needs to be burnt to achieve the same thermal output. The six plants are integral with the main sugar refining plants on the island. They are primarily intended to provide the steam and electricity for the sugar mills but do have the capacity to export 39MW of power in total to the grid system. They are only available to generate during the crop season. (July – December).

There are three dual fuelled, coal/ bagasse fired power stations on the Island. These have a surplus capacity to export to the grid 111 MW in the growing season and 80MW in the crop- processing season. This reduction between seasons is due to the associated sugar mill loads.

The Independent Power Producers on the Island supplied up 42% of the total Island demand in 2001. A level that has increased dramatically over the last four years as the sugar processing industry has centralized on a few mills and the owners realize their opportunity to create a second income for their businesses.

In 2002, there was in theory about 70 MW spare capacity on the island power system after allowing for outages due to the non-availability of water, plant breakdown, and plant on planned overhaul. To meet loads approaching the maximum demand however much of the generation has to be carried out using the highest cost, least efficient and oldest plant on the system. By 2005 the situation will have deteriorated significantly and it would seem highly likely that the margin will be negative if new plant has not been commissioned onto the system to meet the predicted future demand, and also to allow some of the older and more expensive plants to be decommissioned.

Talk: “What is so special about Shoreham Power Station” by Ray Wort, member, 11th March.

The talk started with a question ‘What’s so special about Shoreham Power Station?’ followed by a few simple statements to illustrate how it is different to a conventional coal or oil burning power station. It generates electricity directly into the local area distribution system; it burns gas as its fuel; it utilizes CCGT (combined cycle gas turbine) technology; it can operate with 55% efficiency when converting gas energy to electricity; it operates with very low environmental emissions; it has only one generator, rated at 400MW output, which is larger than the output from the 6 generators in the previous power station on this site; the station only requires a few staff to operate and maintain the plant; and 400MW from a single shaft CCGT generator is the current maximum size available from the various GT manufacturers worldwide.

Many of the differences between a CCGT station and a conventional fossil fuelled power station with similar sized generating units were then illustrated with the aid of pictures of a coal fired 500MW unit, the nearest of the old CEGB unit sizes electrically to the 400 MW unit at Shoreham.

Illustrations included pictures of the old style power station control room, turbine hall, boiler feed water heaters, boiler internals, fuel handling plant, main switchgear, overhead line transmission systems, cooling water systems, etc.

The audience was then given a brief reminder of the basic steam turbine cycle followed by a simple description of the CCGT steam and water cycle, which has a number of significant differences.

In a CCGT, gas is burnt in the Gas Turbine and in the process this produces an enormous amount of hot exhaust gas. The gas turbine shaft drives the alternator rotor, providing up to 265MW of the electrical output of the machine. The exhaust gas from the GT is fed into

a Heat Recovery Steam Generator – in effect a boiler without a fuel firing system. Water is heated by the passage of these gases through the boiler to produce steam. The steam is then used to drive a turbine and the alternator in the same way as a conventional plant, providing up to another 152 MW of the electricity.

The Shoreham gas, water and steam circuits, which are quite complex, were then explained with the aid of a series of slides.

The talk concluded with a comparison of the different operating techniques for conventional steam turbine plant and CCGT plant, especially how the two types of plant are started.

Annual Lunch: – Northbrook College Worthing 13th March.

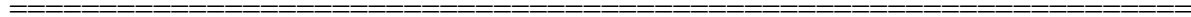
48 members and guests attended this year's lunch. The meal was, without doubt, better than last year and justifies us organizing a similar lunch next year. Obviously we were unlucky last year. As usual there were a number of people who had to be placed on a waiting list for places. These members will be given preferential treatment if they apply for places early next year.

Visit: – Shoreham Power Station, 18th March.

This visit commenced with a video presentation showing the construction phase of the new power station. After a short questions and answers session, answering basic queries generated by the Shoreham talk the previous week; the tour of the site began. Walking past the 132 kV substation and transformer compound the group reassembled in the station Control Room where the Operations Engineer explained the workings of the control systems and answered many technical questions relating to the operation of the plant. The group then went into the boiler/turbine house to inspect the plant, after which they returned to the Control Room for another session of questions and answers with the plant operation staff.

Thanks are due to Mrs. J Loader at Shoreham Power Station, who arranged this very interesting visit for us.





Reply Slips: -

To: G.E. Mathias, 16 Tamarisk Way, East Preston, BN16 2TF

Tel: 01903 859191

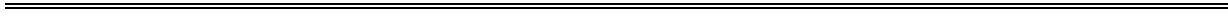
I wish to participate in the visit to **The Brighton Victorian Sewers on Tuesday the 13th May 2003 meeting at 11.00 am.**

Full Name(Block capitals)

Address
.....
.....

Phone No..... **Applications by 1st May 2003**

I enclose a cheque payable to RCEA for **£7.00 per person**



To: G.E. Mathias, 16 Tamarisk Way, East Preston, BN16 2TF

Tel: 01903 859191

I wish to participate in the visit to **Chichester Harbour on Wednesday the 18th June 2003 meeting at 2.30 p.m.**

Full Name(Block capitals)

Address
.....
.....

Phone No..... **Applications by 1st June 2003**

I enclose a cheque payable to RCEA for **£5.00 per person**

To: Hon. Treasurer, B. Buckroyd, 6 Fosters Close, East Preston, BN16 2TL

I wish to participate in the **Garden Party at 16 Tamarisk Way, East Preston, 2.00 pm on Wednesday 16th July 2003**

Full Name(Block capitals)

Address
.....
.....

Phone No..... **Applications by 1st July 2003**

I enclose a cheque payable to RCEA for **£3.00 per person**

To: Hon. Treasurer, B. Buckroyd, 6 Fosters Close, East Preston, BN16 2TL

I wish to participate in the **September Lunch at the Ham Manor Golf Club, 12.00 am for 12.30 pm lunch, on 4th September 2003**

Full Name(Block capitals)

Address
.....
.....

Phone No..... **Applications by 1st July 2003**

I enclose a cheque payable to RCEA for....**£17.50 per person**

Can you please advise any special dietary requirements
