



# NEWSLETTER

**RETIRED CHARTERED  
ENGINEERS ASSOCIATION  
WORTHING**

**Hon. Secretary: S. Oliver. Elphin, North Drive, Angmering, BN16 4JJ ☎ 01903 787116**

## FORTHCOMING EVENTS

1st Sept	Wednesday	Coffee - at Albion Inn, 110 Church Road, Hove
7th Sept	Tuesday	<b>Annual General Meeting</b> , 2.30 p.m. in the Barn at Field Place. Invitation and documents are on pages 7 to 11
16th Sept	Thursday	Coffee - at Spotted Cow, Angmering
21st Sept	Tuesday	Committee meeting, 2.15 p.m. Field Place
30th Sept	Thursday	Coffee - with Ladies at Beach Hotel, Worthing
5th Oct	Tuesday	Copy date for next Newsletter
5th Oct	Tuesday	<b>Talk</b> - "Fuzzy Logic" by K.J. Wheeler, Member 2.30 p.m. in the Barn at Field Place
6th Oct	Wednesday	Coffee - at Albion Inn, 110 Church Road, Hove
21st Oct	Thursday	Coffee - at Spotted Cow, Angmering
21st Oct	Thursday	<b>Annual Dinner</b> at Beach Hotel, Worthing see page 3 for details and application form
Every	Monday	Coffee at Laing's Arcade Cafe, Montague Street, Worthing

Coffee mornings commence at 10.30 a.m., except at The Beach, which is from 10.45 a.m.



We welcome the following new members to the Association:

<p>1999 <b>VICKERS, W.N.</b> M.I.C.E.  <i>39 Pembroke Avenue, Worthing, BN11 5QS</i>  <i>(01903 242551)</i>  Municipal and County experience with: Dorset C.C., Plymouth City C., Poole B.C., Taunton B.C., S.E. Road Construction Unit, Worthing B.C. and W.S.C.C. Surveyors Dept.  <i>Interests:</i> Gardening, Motoring, Foreign Travel, Worthing Sport, Walking, DIY.</p>	<p>1999 <b>NOYCE, K.W.</b> M.I.C.E., M.I.Struct.E.  <i>19 Sea Lane, Middleton on Sea, Bognor Regis PO22 7RX</i>  <i>(01243 582966)</i>  Port of London Authority - Asst. Eng.  Godstone RDC - Chief Asst. Eng.  Thames Water - Senior Dev. Eng.  Antony Hunt Associates - Senior Civil Eng.  <i>Interests:</i> Sailing, Bowls, Fishing</p>
<p>1999 <b>ISTED, C.R.</b> F.I.E.E.  <i>Princess Marina House, 41 Burton wing, Seafield Road, Rustington, BN16 2JG</i>  <i>(01903 775379)</i>  London electricity supply Co. Ltd.  Test dept Barking power station  R.A.F. "Battle of Britain" Tangmere  Transmission system design engineer at C.E.G.B.  Planning engineer at London H.Q. of National Power  <i>Interests:</i> Writing, Painting on china, Music</p>	

## Committee members required

Volunteers are invited to join the committee with a view to becoming future vice presidents. The vice president is responsible for organising the programme for the following year when he becomes president. For further information contact any member of the committee.

## Programme of events 1999/00

### 1999

- Tue. 5th Oct. **Talk:** Fuzzy logic by K.J. Wheeler, Member.
- Thurs. 21st Oct. **Annual Dinner:** Beach Hotel, Worthing.
- Tue. 9th Nov. **Visit:** National Air Traffic Services, Swanwick
- Fri. 19th Nov. **Cooch Memorial Lecture:** Shackleton and the great Antarctic rescue by Dr.M.J. Gilkes, Guest
- Tue. 7th Dec. **Talk:** Railways in West Sussex by W. Gage, Guest

### 2000

- Tue. 4th Jan. **Talk:** How we supplied the Troops in the First World War by R.A.A. Newman, Member

- Tue. 11th Jan. **Visit:** King & Barnes brewery, Horsham
- Tue. 8th Feb. **Talk:** Fire Safety in the home by West Sussex Fire Brigade, Guests
- Tue. 15 Feb. **Visit:** Worcester Controls, Haywards Heath & Burgess Hill
- Tue. 7th Mar. **Talk:** The sodium sulphur battery system by J. Cockburn, Member
- Tue. 14th Mar. **Visit:** Ambion brickworks, Horsham
- Thurs. 16th Mar. **Lunch:** Northbrook College, Worthing
- Wed. 5th Apr. **Outing:** Shoreham Airport
- Wed. 17th May. **Outing:** Herstmonceux Castle, Science Centre & Telescopes
- Wed. 21st Jun. **Outing:** Wey & Arun Canal
- Wed. 19th Jul. **Outing:** Garden Party
- Tue. 5th Sept. **Annual General Meeting.**
- Tue. 10th Oct. **Talk.**
- Thurs. 19th Oct. **Annual Dinner.**

Newsletters: 19th Oct 99, 18th Dec 99, 15th Mar 00, 17th Aug 00

Committee meetings: 21st Sept 99, 18th Jan 00, 21st Mar 00, 23rd May 00, 8th Aug 00

**Fuzzy Logic** - talk by K.J. Wheeler, member, at Field Place, Tuesday 5<sup>th</sup> October, 1999 at 2.30 p.m.

If you are a cams and microswitches man like me then you won't be surprised to hear that things have moved on a bit. Forget solid logic and all that, the latest buzz is fuzzy logic. It's got into all sorts of things, camcorders, cameras, washing machines even automatic transmissions for cars and what's all this about steam engines?

Come along to this talk and afterwards I am sure that you will reach a higher point on your personal "Prestige Chart" when asked "what's fuzzy logic then?"

*Ken Wheeler*

## **Annual Dinner** – 21st October, 1999

The Annual Dinner will be held at the Beach Hotel, Worthing on Thursday, 21st October, 7 for 7.30 p.m. Dress - dinner jacket or lounge suit. Cost, £20 each, including wine with the meal. The menu will be:

*Chef's mixed Hors d'oeuvres*

*Roast turkey with chipolatas, stuffing, cranberry sauce and a selection of vegetables*

*Profiteroles with chocolate or Fresh fruit salad with cream or Cheese and biscuits*

*Coffee and mints*

After dinner, Ted Laird will entertain us on the electronic organ

Reply Slip on page 6 for return **not later than 3rd October.**

**Outing with ladies to the Weald and Downland Museum, Singleton on Tuesday 13<sup>th</sup> July 1999.**

Twelve members and their ladies took part in the outing and we assembled in time to partake of a light lunch at the museum's Egon Ronay recommended cafe. Not everybody was impressed with the food or the facilities as the staff were hard pressed to deal with the demand with limited space in the serving area. Fortunately initially the weather was fine and bright but not so hot as to be uncomfortable and we were able to get together for a chat at the lakeside after lunch.

The main reason for the visit was the guided tour which commenced in the early afternoon. Our guide was Jon Roberts and it became apparent that he is a dedicated supporter of the museum and is knowledgeable on the history of vernacular buildings. The tour started at the timber framed medieval hall house from North Cray, Kent, which clearly shows the construction of such houses. Our guide commenced with a brief history of the museum from the launch in 1967 by a group lead by Mr.J.R. Armstrong, the offer of the site from West Dean land by the Edward James Foundation and the opening to the public in 1971. He then explained how the timber for the frames of the building are cut and laid out in the carpenters yard before being brought to site for erection. The market hall from Titchfield, Hampshire, was next, this also being of timber framed construction.

The following building was fascinating as it demonstrated how an original timber framed building would have been altered over the years to provide more comfort and to keep up with the current fashion until the timber frame was completely hidden by brick and stonework and lathe and plaster ceilings etc. This house came from Walderton, Sussex.

In a not dissimilar vein but of more recent construction, both originally and at the museum, are the small semi-detached Whittiker's Cottages, which date from the mid-1800s and came from Ashted, Surrey. These are of timber framed construction but the timbers, instead of being few and massive, are numerous and slender and are of many different types of timber. One cottage is stripped back to its timbers and the other is complete and furnished with items which would be familiar to many of us as children. Our guide demonstrated the old techniques of cutting timber in a sawpit and shaping with an axe using tools stored at the cottages.

On the way to Bayleaf we looked in at the old single room village schoolhouse where, again, some items are not unfamiliar. Bayleaf is a late medieval 'Wealden' hall house from Chiddingstone, Kent, which was extensively modified on its original site to provide creature comforts. It has been re-erected in its original form at the museum complete with a hearth on the floor of the central hall and period style furniture.

This a brief resume of the tour which lasted about two hours and could have gone on longer but even so it only covered barely a quarter of the buildings and exhibits at the museum. A most enjoyable and instructive visit with an excellent guide.

*Geoff Picken*

**Outing with ladies to Tangmere Aviation Museum, on Tuesday 10th August 1999 at 2.30 p.m.**

We all met up at the Gribble Inn at Oving for an excellent lunch and, from the noise that emanated from the gathering, I am sure that mine host was pleased that he had given us a private room. We were eighteen in total and it was pleasing to see that some of our newer members and also single members had decided to join us on this occasion.

The visit to the museum started with a very knowledgeable guide giving us a tour lasting about an hour, until his voice gave out. We were then left to make our own way around an

exhibition incorporating engineering aspects of wartime aircraft, together with an extensive display of wartime memorabilia.

A chat over a cup of tea in the Tea Room rounded off a very successful outing. Our thanks to Brian Haynes for a most enjoyable afternoon.

*Stan Renew*

## **Cooch Memorial Lecture "Power frequency fields and people"** by Dr.D. Renew, National Grid, held at the Worthing Library Lecture Theatre, on Friday, 28<sup>th</sup> November, 1998 at 2.30 p.m.

Since the meeting was open to the general public, there was a pre-amble on power and its uses, power frequency (50 Hz) and power frequency fields, both electric and magnetic. The remainder of the talk concentrated on the subject of magnetic fields.

The main function of the National Grid Company is to transmit to Regional Electricity Companies the high voltage electricity produced by Power Stations. In the overall operation, the National Grid Company has 21,000 pylons carrying cables for a distance of 7,000 km and 600 km of underground cable. This involves 280 sub-stations and a staff of 3,000.

The N.G.C.Department of Engineering and Technology has a group that is responsible for overhead lines and engineering performance, ensuring the overall electrical performance of the network and its environmental acceptability. This is achieved through the development of engineering policy and strategy by continuous monitoring and review of its effectiveness.

The EMF Research section of ten people provides technical know-how on EMF subjects through pure research, plus what is happening around the country and throughout the world. There is also an EMF Unit which interacts with the public, answering their queries and resolving their problems.

The unit for measuring small magnetic fields is a microtesla = a millionth of a Tesla =  $1\mu\text{T} = 10$  milli gauss =  $0.8\text{ A/m}$ , but in some cases it is necessary to measure in nanotesla – a thousandth millionth of a tesla, all of which requires an extremely sensitive instrument, which initially did not exist and therefore had to be designed by NGC.

A slide illustrating a plot of magnetic fields in a normal house clearly showed the location of various pieces of domestic electrical equipment. From this it was apparent that an electric doorbell transformer produced the highest reading. The vast majority of homes in this country have a background magnetic field of up to  $0.05\text{ uT}$ , reaching  $0.2\text{ uT}$  for 2% of the population, but it can be much higher due to local conditions, such as underground power cables. Fields from power lines depend on the amount of current flowing; these drop off very rapidly from the maximum, which is located immediately below the central position.

The National Radiological Protection Board – NRPB – has the responsibility for advising the government on standards of protection from exposure to non ionising radiation. For 50Hz magnetic fields they have specified a level of 1,600 microtesla. At this figure no special arrangements are required to enable the electricity industry to perform well within the guidelines.

Does EMF cause cancer – is it a health risk? Doubt was first expressed in Denver, when in 1979 a research worker published a paper based on the observation of a concentration of power lines in the vicinity of leukaemia cases. The matter was investigated by another epidemiologist,

whose findings did not produce a decision either way. There have been many studies since that time, none of which have produced conclusive evidence; in fact, one study by the National Cancer Institute produced a negative result.

Since 1992 the electricity industry has been contributing to the funding of the U.K. Childhood Cancer Study to the tune of £600,000 p.a. This has covered 4,000 cases and the long awaited report was, at the time of the lecture, promised for 21<sup>st</sup> May, 1999\* and it is hoped it will give a definite answer to the question “Do magnetic fields cause cancer?” or are they associated?

In addition to the aforementioned study, a lot of very difficult biological research is being funded by NGC, but this is being carried out by independent organisations, to try to ascertain if very minute magnetic fields have an interactive mechanism producing a bad effect on cells. This research is being managed quite independently of NGC, because they want to avoid any suggestion that they could, in any way, be manipulating the results. In fact, this research is being managed for the Biological Research Trust by a team of eminent biologists.

**Litigation:** In 1944 there was a judicial review against the Secretary of State for Trade and Industry, to the effect that he should have stopped the NGC putting an underground cable through part of London – the application failed. More recently, both Norway and NGC have received personal injury claims for childhood leukaemia. Various sources of magnetic field were cited but, after the NCI study was published, the action was suddenly withdrawn, pending publication of the previously mentioned U.K. Childhood Leukaemia Study.

\*At the time of writing this report, the study has still not been published, the latest prediction being November 1999.

*Stan Renew*

## **Recruitment – Publicity**

Over the past eighteen months, with varying degrees of success, I have endeavoured to obtain publicity from the more obvious sources, including writing to all Chartered Engineering Institutions.

I have just received from Alan Whitaker a list of retired Civil Engineers within our area. If any member has similar information to pass on to me, bearing in mind that we already have coverage if I.E.E., I would be pleased to receive it. I will then write to all prospects.

*Stan Renew*, Hon. Membership Sec.

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To: D.R. Collard, 9 Meadway, Rustington, Littlehampton, BN16 2DD

Please reserve.....places for me at the **Annual Dinner on 15th October, 1999** at the

Beach Hotel, Worthing. 7 for 7.30 p.m.

My guests will be ..... I/we would like to sit with

.....

..... who have agreed to make a reciprocal request

I enclose my cheque for £..... (£20 per person) payable to R.C.E.A.

Please note, no tickets will be issued

NAME .....(Block capitals) Phone No.....

**Applications by 3rd October, 1999**

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**RETIRED  
CHARTERED ENGINEERS'  
ASSOCIATION  
(WORTHING)**

**48<sup>th</sup>  
Annual General  
Meeting**

Dear Member,

The 1999 A.G.M. will be held in the Barn at Field Place on Tuesday, 7th September, commencing at 2.30 p.m.

S. Oliver. Hon. Secretary

**AGENDA**

1. Apologies for absence.
2. Minutes of the Annual General Meeting held on 10th September, 1998 (see page 8).
3. Matters arising from the Minutes.
4. Treasurer's Report for 1998/99 and presentation of accounts for year ending 31st July, 1999.
5. Secretary's Report for 1998/99.
6. The committee proposes that the annual subscription remains at £12 (rule4)
7. Election of Officers and Committee for the Year 1999/00.

The Committee wishes to nominate :

President	D.M. Lewis
Vice President	K.H. Wheeler
Hon Secretary	S. Oliver
Asst. Hon. Sec	R.G. Bailey
Hon. Treasurer	D.R. Collard
Asst. Hon. Treasurer	R.P. Marshall
Committee members	H.A. Rummeli
	G.D. Mathias
	D. Matthews
Auditor	R.A. Parsons
Membership Sec.	S.R. Renew

8. Retiring President's Address.
9. Induction of President: D.M. Lewis
10. President's Address.
11. Vote of thanks
12. P.A. system for meetings
13. A.O.B.

**MINUTES OF 47TH ANNUAL GENERAL MEETING, HELD AT FIELD PLACE ON TUESDAY, 9TH SEPTEMBER, 1998, AT 2.30 p.m.**

1. The President D.M. Lewis opened the meeting in the presence of 34 members including 3 new members who were welcomed.
2. Apologies for absence: Calverley, Harvey, Fife, Badby, Shead, Laird, Fosbrooke, Thompson, Haynes, Mills, Lear, Marshall, Picken, Parsons, Newberry.
3. The minutes of AGM No.46 held on 10th September 1997 were approved.
4. Matters arising from above meeting: D.M.Lewis advised that items 13(a) & 13(b) had been actioned.
5. The Treasurer's report was adopted unanimously. Proposed by R.G. Bailey and seconded by S.M. Butler. The question of increase of entrance fee was held for Item 7.
6. The Secretary's report was adopted unanimously. Proposed by L.D. Bannister and seconded by A.G. Standbridge.
7. Rule Change proposed by the Committee.  
This was discussed at some length and a proposal by E. Markwell, seconded by A.G. Standbridge that the first paragraph of Rule 4 should be :-  
"There shall be an entrance fee. Subscriptions for each year become due on October 1st. The subscription and entrance fee for each year shall be evaluated at the Committee Meeting of the Association held in the previous May and be approved by the Annual General Meeting". was approved unanimously.  
The proposal that the entrance fee be £10.00 and annual subscription be £12.00 was then approved by 31 votes for with 3 against.
8. The retiring President D.M. Lewis reviewed the year's activities. The move to Field Place was accomplished successfully and the programme had been good. The level of attendance at talks had been good but support for visits, the Spring break and Annual Dinner had been barely adequate. 12 new members had joined during the year. He thanked the Committee members for their support during the year and regretted that we had been unable to find a member to take up the Vice-President position.
9. The retiring President then introduced the new President S.M. Butler.
10. The following were proposed, seconded and carried unanimously as Officers for the year 1998/99 :-

President	S.M. Butler.
Vice President	No nomination.
Hon. Secretary	S. Oliver.
Asst. Hon. Sec	R.G. Bailey.
Hon. Treasurer	D.R. Collard.
Asst. Hon. Treasurer	R.P. Marshall.
Committee Members	No nomination.
	M.S. Leak.
	H.A. Rummeli.

Auditor  
Membership Sec.

A.G. Standbridge.  
S.R. Renew.

**11.** The new President, S.M. Butler, then gave a brief outline of his career. It was very interesting to hear of his association with the Heat Pump at the Festival of Britain in 1951, and also his pioneering work with free piston prime movers in unusual applications and locations.

12. K.J. Wheeler thanked The New President for his interesting discourse.

13. Any other business.

(a) S.R. Renew proposed that the Cooch Memorial Lecture Student Prize be increased in value to £100.00. Seconded by R.G. Bailey. This was carried by 21 votes to 2 with 11 abstentions.

The meeting ended at 1610 hrs. RGB. 12/9/98.

## **Coffee Morning Collections**

A total of £92.62 has been handed over to St. Barnabas Hospice from the collections made at the local coffee mornings, and this has been gratefully acknowledged.

*R.P. Marshall*, Hon. Assistant Treasurer

## **Hon. Treasurer's Report for the year ending 31st July, 1999**

The balance sheet shows that the increase in rate of subscription and entrance fees, together with the extra new members joining, has redressed the previous adverse balance and there is now a healthier balance overall in the Association's assets. There have been no exceptional items of expenditure during the past year requiring comment.

I should like to thank the Committee and all the members for their assistance and support during the year and to give particular thanks to John Standbridge for his valued assistance this year and all the previous years of sterling service as our Hon. Auditor.

*D. R. Collard*, Hon Treasurer

**RETIRED CHARTERED ENGINEERS' ASSOCIATION**  
**Balance Sheet for the year ending 31st July,1999**

1997/98	Receipts	1998/99	Payments	1998/99	1997/98
£		£		£	£
804.00	Subscriptions	1312.00	Cooch lecture	28.38	20.00
50.00	Entrance fees	190.00	Student prize	100.00	75.00
0.00	Donations	0.00	Hire of rooms	190.00	218.83
1040.00	Annual Dinner	1040.00	Annual Dinner	1037.20	1049.49
506.00	Luncheon	405.00	Luncheon	401.50	549.50
28.10	Teas	49.19	Teas	18.10	50.86
414.00	Outings	127.50	Outings	222.50	454.80
27.46	Interest NSB	19.68	Corporation Tax	0.00	9.46
4.68	Interest Lloyds A/C	5.92	Typing, printing	545.44	446.72
			Postage	116.00	89.60
			Stationery	47.74	17.54
			Telephone	4.50	5.52
			Name badges	51.29	99.65
			Spring break	0.00	0.00
			Publicity	31.05	10.29
			Talks-expenses	0.00	8.50
			Insignia	0.00	7.05
				<b>2793.76</b>	<b>3112.81</b>
<b>2874.24</b>		<b>3149.29</b>			
140.00	Transfer NSB to Lloyds	0.00			
<b>3014.24</b>	Total receipts	<b>3149.29</b>			
3112.81	Total payments	2793.76			
<b>-98.57</b>	<b>Balance</b>	<b>355.53</b>			

**Summary**

Brought forward from 1998	450.96
Surplus for year 1998/99	355.53
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**806.49**

**Assets**

Balance current A/C Lloyds Bank	397.58
NSB Investment A/C	408.91

**806.49**

D.R. Collard Hon. Treasurer

**Auditor's Report**

I have examined the accounts as presented to me by the Hon. Treasurer and, in my opinion, they represent a true and faithful picture of the financial affairs of the association for the year ending 31st July, 1999.

A.G. Standbridge Hon. Auditor

## Hon. Secretary's Report for the Year 1998/99

A summary of the years events is given below:

Title	Speaker		Date	Attendance
"Electrical Privatisation"	Dr. Jackson	guest	6 Oct 98	32
"A practical approach to software reliability"	A. Gordon	guest	8 Dec 98	27
Cooch Lecture "Power frequency fields and people"	Dr. D. Renew	guest	27 Nov 98	48
" Code Breaking"	J. Steel	guest	5 Jan 99	37
"Explosion protection in motorway tunnels"	D. Shepherd	guest	9 Feb 99	26
"Aircraft systems"	J. Apted	member	9 Mar 99	32

The RCEA prize was awarded to Jason Black after the Cooch lecture

LEC Refrigeration, Bognor	Visit	10 Nov 98	23
Pirelli Cables, Southampton	Visit	12 Jan 99	11
Daewoo Technical Centre, Worthing	Visit	16 Mar 99	25
Fishbourne Roman Palace	Outing	8 Jun 99	11
Singleton open air museum	Outing	13 Jul 99	10
Tangmere aviation museum	Outing	10 Aug 99	18
Lunch at Northbrook College	Lunch	30 Apr 99	55
Spring Break to Rouen	Holiday	17-21 May 99	cancelled
Annual Dinner	Dinner	15 Oct 98	50
A.G.M.	Meeting	9 Sep 98	34
Committee	Meetings	4 during session	7,9,8,9

### Membership

To date we have 114 members. During the association year we are sad to report the deaths of 4 members (H.B. Bailey, L.T. Blowers, J.L. Gurney, L.G.R. Mole), there were 5 resignations (R. Bayfield, J. Canton, J.B. Holmes, T. Pickles, H.J. Tuffen) and 16 new members have joined (B. Buckroyd, J. Cockburn, C. Harrison, C.R. Isted, G.S.H. Jarrett, T. Kay, D. Litherland, A.G. Meecham, A.C. Mole, K.W. Noyce, J.W. Olley, J.A.H. Paffett, F.A. Putland, J.S. Smith, W.N. Vickers, N.D. Winfield). Three members qualified for Life Membership (D.R. Fife, S.G. Hulbert, J. Richards) bringing the total number of life members to 8.

*S. Oliver*, Hon. Secretary