



NEWSLETTER

**RETIRED CHARTERED
ENGINEERS ASSOCIATION
WORTHING**

Hon. Secretary: S. Oliver. Elphinstone, North Drive, Angmering, BN16 4JJ ☎ 0903 787116

FORTHCOMING EVENTS

3rd May	Tuesday	Visit to N.R.A. St Marys Bay, Dymchurch at 2.30 p.m.
4th May	Wednesday	Coffee - at Albion Inn, 110 Church Road, Hove
18th May	Wednesday	Committee meeting, 2.15 p.m. Durrington C.C.
19th May	Thursday	Coffee - at Three Crowns, East Preston
26th May	Thursday	Coffee - with Ladies at Beach Hotel, Worthing
1st June	Wednesday	Coffee - at Albion Inn, 110 Church Road, Hove
15th June	Wednesday	Outing to Amberley Chalk Pits Museum
16th June	Thursday	Coffee - at Three Crowns, East Preston
30th June	Thursday	Coffee - with Ladies at Beach Hotel, Worthing
6th July	Wednesday	Coffee - at Albion Inn, 110 Church Road, Hove
12th July	Tuesday	Outing to Sheffield Park
21st July	Thursday	Coffee - at Three Crowns, East Preston
28th July	Thursday	Coffee - with Ladies at Beach Hotel, Worthing
3rd Aug.	Wednesday	Coffee - at Albion Inn, 110 Church Road, Hove
10th Aug.	Wednesday	Committee meeting, 2.15 p.m. Durrington C.C.
15th Aug.	Monday	Copy date for next Newsletter
18th Aug.	Thursday	Coffee - at Three Crowns, East Preston
25th Aug.	Thursday	Coffee with Ladies at Beach Hotel, Worthing Publication of August Newsletter

6th Sept. Tuesday **Outing to St George's Vinyard, Waldron**

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.

Correction

Report on Soldiers All Three, Feb. Newsletter, page 5, penultimate para., for "Royal Bromley Sappers" read "Royal Bombay Sappers"

Would contributors to the Newsletter please print proper nouns in handwritten contributions to avoid typing errors as above. Also it would be appreciated if the copy date (specified on the front page) could be adhered to.

Change of address

Stan Renew our Vice President is now residing at the following address:

11 Chartfield, Hove, East Sussex, BN3 7RD ☎ 0273 561168

Outings Questionnaire

In respect of the Outings Questionnaire included in the December newsletter, 37 replies were received, of which only two indicated that they had no interest in such activities.

Two possible events tied for first place, each with a potential attendance of 45:

1. Unfortunately, I have been quite unsuccessful in persuading either Cunard or P & O to agree to a conducted tour. Understandably, they no longer have such events, due to the security problems they present.
2. A back-stage visit to Chichester Festival Theatre had the same popularity rating, but it is too early to approach the management in respect of a Spring 1995 activity.

Heaselands and a tour of the new Glyndebourne Opera House were joint second but, here again, it is too early to contact them. However, if I succeed in getting a Chichester visit, it would make sense to delay Glyndebourne for a year. Leeds Castle and Chichester Harbour Tour scored a possible 32, but none of the other events achieved a score worthy of further consideration.

With a membership of over 100, a total response of 37 must be considered low and not really indicative of members' requirements, positive or negative.

Stan Renew

Membership

It is with regret that we note the death of **E.I. Hunter** a member since 1969 and also of Elsie the wife of **F.J.W. Brown**.

John Morgan was involved in a bad sideways impact car accident on Thursday 14th April where he sustained 6 broken ribs and a leg broken below the knee. He has had surgery on the leg and is still in intensive care at the copy date.

We welcome the following five new members to the Association: **R.G. Bailey, R.B. Berry, D. Clouting, G.I.L. Gunn & H.R. Page**; more details are given later.

Situations Vacant

I have received papers from British Power International, a group carrying out consultancy work for small and medium electricity supply projects overseas. They are seeking retired chartered engineers able and willing to undertake such work on a "single project" basis.

The Engineering Council has need of a co-ordinator for its Neighbourhood Engineers Scheme in the area bounded by Bognor, Worthing, Horsham, Haywards Heath. I quote: "The position is not arduous, but does require the skills of a good negotiator to get engineers and teachers to work together effectively. The job is purely voluntary, but travelling and out-of-pocket expenses are reimbursable".

I would be pleased to supply further information to anyone interested.

Ernest Ayling

Visit to Enicham Elastomers Ltd, Hythe

Only 6 members attended the visit on 15th April and due to lack of support the second visit on the 22nd April was cancelled.

Visit to National Rivers Authority 3rd May

This visit is to the National Rivers Authority to view Sea Defence Work at St Marys Bay, Dymchurch at 2.30 p.m. Please wear old clothes and wellingtons; hard hats will be provided.

At our last talk it was suggested that a small coach be hired for the journey but so far the response to this visit is very low. It is hoped that more people will sign up so that Ted Trotter can organise a coach.

Contact: E.B. Trotter, 34 The Marlinspike, Shoreham-by-Sea, West Sussex, BN43 5RD

Ricardo Consulting Engineers - 22nd February, 1994

Tucked away in a corner of Shoreham Airport is a Company founded by Harry Ricardo in 1919 - his initial success was the design of the tank engine used in the 1924 -18 war. From these beginnings his company established the system of octane ratings for fuels still used today and became well known for their work on diesel engine development. The Citroens of the 30's and today still use Ricardo patents. It was encouraging to learn that new staff were being recruited with the present number of staff approaching 500.

Today the Company, part of the SAC Group, undertake contract research and development on gasoline, diesel and transmission systems - ranging from motor cycles to marine diesels. They have 120 clients world wide and have recently opened facilities in America.

The SAC Group include companies who are expert in the fields of Aerospace, Automation including robotics, Power Plants and Technology in Manufacture.

The twenty members on the visit were welcomed by Mr Barrow the Personnel Manager and after a brief introduction we were divided into four groups each under the charge of a young engineer. A lot of the work was of a confidential nature so we were only able to see some of the test rigs.

The largest test rig we inspected was a V16 diesel which though fairly old was still being used for work on emission improvement. We were told that the introduction of water reduced head temperature and reduced the toxicity of emission gasses.

In one block of buildings there were no less than 16 engine test bays. In the one we visited there was a single cylinder test bed diesel built to Ricardo design. The engine was fully instrumentated - one oscilloscope showed head pressure over a period of 40% of the stroke - there was the facility to undertake complete analysis of the exhaust emissions. Our guide said that a major part of their work at present was to find ways of reducing the noxious gasses from gasoline and diesel engines made necessary as Governments across the world tighten upon regulations affecting vehicle exhausts.

Through the tour there were a number of permanent displays demonstrating various Ricardo developments. One that won the Queens award for industry in 1993 was the design of cylinder porting to induce a rotational effect to gasses in a cylinder and thus improve combustion exhaust gasses.

At the conclusion of the tour we were given a cup of coffee whilst the Technical Director Mr Morrison answered a variety of question ranging from the future for electric and hybrid cars, the role of consultants and the problems of secrecy in a competitive environment. He also told us of new type of differential, a Ricardo patent, at present undergoing evaluation by a number of vehicle manufacturers.

In all a most instructive visit. It was encouraging to find a British Company expanding, in the forefront of technology and acknowledged as a world leader in this field. It was also reassuring to find that they were making a positive contribution to a "greener" future for our grandchildren.

John Fuller

A Model Railway - Talk by P.M. Harvey and R.A. Parsons, members, at the Durrington Community Centre, 9th March, 1994.

Most men were introduced to model railways when they were very young, by the toy train set on the floor, usually a circle or oval of track and an engine with a short train endlessly chasing its tail. I certainly can remember this, including a Bowman steam engine which went so fast it derailed on the curves and fell on its side, setting the carpet on fire! My interest in full-size railways was stimulated by spending many holidays at Teignmouth in Devon, where I was able to watch the old Great Western trains along the sea wall, a marvellous vantage point. Most men grow out of the hobby but a few carry on, as I have done, throughout their lives and build larger and more satisfying model railways. In the 1950's I became interested in modelling American because of the high quality of American models then available on the market. There are seven popular scales

for modelling, but by far the most popular are "00" in this country and "H0" in the rest of the world. These scales are 4 mm and 3.5 mm to 1 foot respectively, but both use the same track gauge of 16.5 mm; this width is of course only correct for "H0" scale. I won't go into the reasons for this, but it has caused a lot of heart searching in this country.

As an Engineer, I consider model railways to be a part of engineering, i.e. in miniature and the railway is part of a transportation system which consists, not only of track, locomotives and rolling stock, but includes land, buildings, civil structures, signalling, power and control devices, and has a purpose to move freight and people from one place to another. A model railway should reflect these aspects. Because I model American, I use "H0" scale. In designing a model railway then, its imagined purpose and the scenery should be considered first, not after designing the trackwork.

I belong to an American club, known as the National Model Railroad Association (NMRA), which has around 26,000 members worldwide and 600 members in the British region. The NMRA produces a large amount of technical and engineering data, formulated by engineers and other specialists, who are members, to enable others to construct models which are true copies in miniature of the full size prototype. These data sheets cover design of track, points or turnouts, wheels, bridges, etc., and are invaluable for the model railway builder. Clubs usually have a club layout, which may be permanently installed where a room or hall can be continuously occupied. In other cases, nowadays, more and more clubs use modular layouts. These modules, made by individual members, must all be made to the same standard, i.e. length, width, height, positions of tracks, etc., so that they may be joined together to form a larger layout. The modules must be of such a size that they are easily moved in the boot of a car and, when in a member's home, can be used as a small layout. The size of a module is usually 3 ft or 4 ft by 2 ft deep and standing 3 ft or 3 ft 6in. above the floor.

The layout is usually constructed of wood framing with, in the case of a permanent layout, the main horizontal supports being assembled from two strips of timber to form L-shaped girders, themselves supported by square legs. Joists are fixed across the girders and the track beds are then supported by a system of risers and secondary joists. Scenery is formed by means of several layers of paper towels, soaked in plaster and then draped over the formwork, consisting of a mesh of card strips, roughly forming the shape of the terrain required. The plaster can be shaped or carved before or after setting. Rocks and rock faces can be made by casting plaster in latex moulds, the moulds having been formed over a natural rock surface. Colouring is done by the use of dyes, oil and acrylic paints. Texturing is done by the use of differently coloured dyed sawdust, use of lichen, etc.

The speaker had been showing slides illustrating the points made so far, as well as layouts under construction and the use of modules. He went on to mention control panels, nowadays using sophisticated electronics. Model motors have progressed from the crude open permanent magnet and 3 pole armature, to the latest "can" type highly-efficient motors, with 5 or 7 pole skew wound armatures.

The speaker concluded by showing a number of slides of models he owns, including one locomotive made from sheet brass, and then a series showing pictures of the layout of the late John Allen of California, a professional photographer, who had produced a model railway with scenery stretching from floor to ceiling and producing some most realistic effects. Altogether a model railway can be a very satisfying hobby for anyone

interested in railways, and particularly the engineer.

GGGGGGPeter Harvey GGGJ

After the tea break, Ray Parsons spoke on a series of slides taken of his own "00" gauge 4 mm model railway, built for timetable operation.

Schematic diagrams showed the track layout and how points, isolating switches and controller inputs were arranged. All the electrical equipment used was of 1940/50 vintage, obtained from government surplus stores, most of which is easily recognisable to older electrical engineers.

The main running lines, comprising a double track continuous loop, are formed into a "clove hitch", to double the length in the available space. Each track is split into eight electrical sections, fed through current relays, so that a train "in section" gives 12 v to the first behind, 0 v to the second behind, and 10 v to the third behind; and as it progresses round the loop, a train takes these four sections with it. So, if a second train is put on the loop exactly opposite (electrically) the first, they can be operated by one controller. Provided that they run at equal speed, each will take its own four sections round with it quite steadily. Should train A gain on train B, it will come onto train B's 10 v section, thus slowing until train B moves onto the next section, when train A picks up to normal speed, etc. Should train A be much faster than train B, it will pass through the 10 v section on to 0 v and stop until train B moves ahead and re-energises train A's section at 10 v. The only snags with this system are: 1) jerky starts/stops and 2) "fail to danger" as, should train A fail to restart, train B sees "line clear" and the operator has to stop train B pronto.

The layout is operated to timetable to ensure that running sessions remain interesting for the operators.

The next batch of slides showed the thirty engines built between 1950 and 1976. All have hand-built chassis, about half have scratch-built bodies and the rest castings or kit bodies. A few examples illustrated the basic methods of construction of all these engines, which changed very little over the years.

Finally, a series of slides showed the various stages in the construction of the layout, taken at intervals during the eight years, from initial support steelwork to final completion of the scenery.

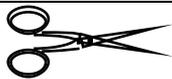
HHHHHJ Ray Parsons GGGFGJ

<p>1994 BAILEY, R.G., F.I.E.E. <i>1 Measham Close, Ferring, Worthing, BN12 5HH</i> <i>(0903 506092)</i> Manager Power/Desalination Dubai Aluminium Co. PWD Hong Kong. Aluminium Bahrain. Preece Cardew & Rider. CEGB. NEB Malaya. Osborne & Chappel Malaya. Nigerian ESCo. English Electric Co. Royal Marines. Admiralty Signal & Radar. <i>Interests:</i> Walking, Cycling, D.I.Y., Carpet Bowls</p>	<p>1994 BERRY, R.B., M.I.Mech.E., M.I.Mar.E <i>The Beeches, Salthill Rd, Fishbourne,</i> <i>Chichester, PO19 3PY</i> (0243 783814) Royal Navy 1946-1970, Civil Service (Royal Corps Naval Constructors) 1970-1989 <i>Interests:</i> Caravanning, Family History, REMAP</p>
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<p>1994 CLOUTING, D., B.Sc.(Eng.), F.I.E.E. <i>40 Park Way, Hove, BN3 6PW (0273 882707)</i> Deputy Director of Marketing, Electricity Council <i>Interests:</i> Music, Model Engineering, Sculpture, D.I.Y., Rotary Housing Society, Brighthelm Community Centre (Brighton)</p>	<p>1994 GUNN, G.I.L.,M.I.Mech.E., M.R.Ae.S. <i>5 Mariners Walk, Rustington, Littlehampton BN16 2ER (0903 782279)</i> Vickers Armstrong (Aircraft), British Aircraft Corporation, British Aerospace plc, Weybridge 1942 - 1986. Head of Design Estimating <i>Interests:</i> Philately, "Window gazing" at Antique Fairs</p>
<p>1994 PAGE, H.R., M.I.Mech.E. <i>Old Stable Oak, Wickhurst Lane, Broadbridge Heath Horsham, RH12 3LU (0403 256925)</i></p>	<p>C.E.G.B. Power Station Planning Dept, National Officer of the Electrical Power Engineers Association <i>Interests:</i> Bowls, Watercolour painting, Retired members section of E.P.E.A.</p>

Outings

Amberley Chalk Pits Museum	Sheffield Park Garden (National Trust)	St George's Vinyard, Waldron Village
Wednesday 15th June at 2.30 p.m.	Tuesday 12th July at 2.30 p.m.	Tuesday 6th September at 2.30 p.m.
Exciting working museum featuring demonstrations by craftsmen, narrow gauge railway rides, early motor buses, stationary engines and many other exhibits and displays. New features added in 1993 include rural telephone exchange, wheelwright's shop and Seaboard electricity hall.	100 acres of beautiful Capability Brown gardens and woodlands with 5 lakes on different levels joined by cascades and waterfalls. The 18th Century garden is carpeted with daffodils and bluebells in spring followed by magnificent rhododendrons and azaleas. Its many rare trees turn into a blaze of red and gold in the autumn.	Walk Around the Vinyard. A glass of wine is included in the entrance fee. Guided tours of the wine making process are available.
Directions: on B2139 at Amberley Station, west of Amberley Village. Signposted from the A24 'Industrial Museum'.	Directions: on East side of A275 midway between East Grinstead and Lewes. 5 miles N.W. of Uckfield.	Directions: Nr. Heathfield, turn off Lewes to Heathfield Rd (B2102) just after Blackboys.
Tearoom and large picnic area	Tearoom (not N.T.) and shop	Restaurant and cream teas after visit



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<p>To E.B. Trotter, 34 The Marlinspike, Shoreham-by-Sea, West Sussex, BN43 5RD</p> <p>I intend to participate in the outing to Amberley Chalk Pits Museum on Wednesday 15th June at 2.30 p.m.</p> <p>I shall be accompanied by.....guests</p> <p>I require a lift.....</p> <p>I can offer.....seats in my car travelling from.....</p> <p>Name.....</p> <p>Telephone.....</p> <p>Please delete/complete as appropriate and send to Ted Trotter by 8th June</p>	<p>To E.B. Trotter, 34 The Marlinspike, Shoreham-by-Sea, West Sussex, BN43 5RD</p> <p>I intend to participate in the outing to Sheffield Park Garden on Tuesday 12th July at 2.30 p.m.</p> <p>I shall be accompanied by.....guests</p> <p>I require a lift.....</p> <p>I can offer.....seats in my car travelling from.....</p> <p>Name.....</p> <p>Telephone.....</p> <p>Please delete/complete as appropriate and send to Ted Trotter by 5th July</p>	<p>To E.B. Trotter, 34 The Marlinspike, Shoreham-by-Sea, West Sussex, BN43 5RD</p> <p>I intend to participate in the outing to St George's Vinyard on Tuesday 6th Sept at 2.30 p.m.</p> <p>I shall be accompanied by.....guests</p> <p>I require a lift.....</p> <p>I can offer.....seats in my car travelling from.....</p> <p>Name.....</p> <p>Telephone.....</p> <p>Please delete/complete as appropriate and send to Ted Trotter by 30th Aug.</p>
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