NEWSLETTER

RETIRED CHARTERED ENGINEERS ASSOCIATION
WORTHING

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

FORTHCOMING EVENTS

2nd Mar.	Wednesday	Coffee - at Albion Inn, 110 Church Road, Hove
9th Mar.	Wednesday	**Talk** - "A Model Railway" by P.M. Harvey & R.A. Parsons, members. 2.30 p.m. Durrington Community centre
16th Mar.	Wednesday	Committee meeting 2.15 p.m. Durrington Community Centre
17th Mar.	Thursday	Coffee - at Three Crowns, East Preston
31st Mar.	Thursday	Coffee - with Ladies at Beach Hotel, Worthing
6th Apr.	Wednesday	Coffee - at Albion Inn, 110 Church Road, Hove
14th Apr. 21st Apr.	Thursday Thursday	**Visit** to Enicham Elastomers Ltd, Hythe Southampton at 2.30 p.m. see page 10 for signing up.
18th Apr.	Monday	Copy date for next Newsletter
21st Apr.	Thursday	Coffee - at Three Crowns, East Preston
25-29th Apr.		Spring Break to North Wales
28th Apr.	Thursday	Coffee with Ladies at Beach Hotel, Worthing Publication of April Newsletter
3rd May	Tuesday	**Visit** to National Rivers Authority, St Marys Bay, Dymchurch at 2.30 p.m. see page 10 for signing up
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. Please wear your name badges.

Correction

Report on Cooch lecture, Dec. Newsletter, page 7, section Finance, lines 2 & 3; for charges read changes.

Change of address

Stan Renew our Vice President is now residing at the following address:
34 Mallon Dene, Rustington, Littlehampton, West Sussex, BN16 2 JR. ☎ *0903 774188*
from 11th March approx. *11 Chartfield, Hove, East Sussex, BN3 7RD* ☎ *0273 561168*

Cancer Research Campaign

The copper collection made at members coffee mornings amounted to **£61.21** for 1993. The organisers thank the RCEA for this contribution. For the record nearly £70 was collected in the previous year.

Desmond Lear

Are you an active member, the kind that would be missed?
Or are you just contented that your name is on the list?
Do you attend the meetings, and mingle with the flock.
Or do you stay at home and criticize and knock?
Do you take an active part to help the work along,
Or are you satisfied to be the kind that "just belong?"

Steve Hulbert

Outings Questionnaire

Many thanks to the 36 members who completed and returned the 'Outings Questionnaire'. It is hoped that when analysed the information will be a useful guide; hopefully enabling a programme to be produced acceptable to the majority.

Stan Renew

Spring Break to North Wales.....GHHHJ

There are still spaces available to Members or their friends on the five-day tour to North Wales, from 25th to 29th April 1994. For any further information, or if you decide to apply, please contact the Spring Break Organiser:

John Fowler, 15 The Roystons, Willowhayne Estate, East Preston, BN16 2TR Tel. 0903 774115

Road Safety by A.D. 2000 - Talk by A.S. Whitaker, member, at the Durrington Community Centre, 12th January, 1994.

This talks, as with all talks, are recorded and the tape cassettes are available on loan from the Secretary.

In 1988 the Government endeavoured to reduce road casualties by one third by the year 2000.

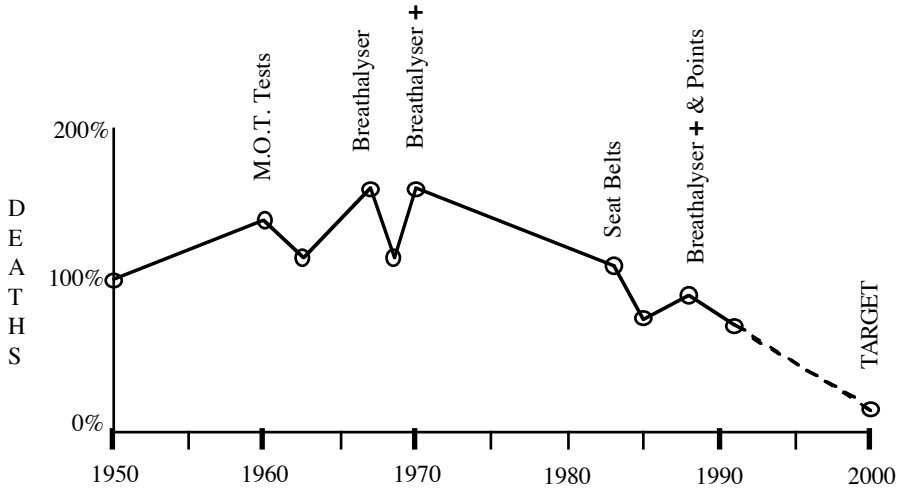


Fig. 1. Percentage variation of Road Deaths from 1950 to 1993.

Historically the worst year for road deaths was in 1941 when the blackout led to 9,169 deaths. Whilst there has been an increase in traffic from some 3 million vehicles in 1938 to over 30 million in 1992, the road casualties have been reducing overall. Considerable efforts have been made to keep ahead, but with cost of accidents of about £3 billion each year, there is an urgent need to improve the situation.

There have been some recent improvements. There was a reduction of 6% in 1992 from 1991 but this was accompanied by a drop in traffic volume of 2% due to recession. Serious injuries also fell but slight injuries rose by 15%. Child pedestrian deaths fell by 22%. Motor cyclist deaths fell by 16%. The challenge facing Highway Engineers is to maintain and improve on this trend by reducing congestion and improving standards of safety.

Every Local Authority has a Traffic Section and a Road Safety Unit who work with the police and Education Authorities.

The Traffic Section analyse all accidents involving injury or death. Arising from this analysis, they promote a programme of small improvements such as at junctions, minor road improvements, improved road lighting, etc. When complete, they monitor the effectiveness of the measures undertaken. The Section also undertake regular traffic and pedestrian movement counts.

The Road Safety Unit organises Road Safety training and cyclist education.

The main underlying cause for 90% of road accidents is driver error. Most accidents do not occur on Motorways, but on urban roads within 2 or 3 miles of the motorists home. These roads carry only 40% of the traffic and yet account for 75% of fatal accidents.

The speaker then illustrated how roads have been improved. Cats' eyes and white lining was one of the greatest benefits. Pre-war research produced better design standards allied to vehicle speed, radii, super elevation and vertical alignment. Curves were designed with the proper transitions. Neglect during the war led to poor road surfaces. The use of improved HR asphalt surfaces and better surface dressing eventually led to a better road. Winter brought its usual problems - snow and ice, especially black ice. Initially sand was used but salt is now used almost universally.

The speaker then gave details of a number of road improvement schemes in which he had been involved, including the problems arising from subsidence in the West Riding of Yorkshire, Lancashire, Warwickshire and Cheshire.

Some of the factors that contribute to the safety of roads are:-

1. DRAINAGE. With very heavy rainfalls there is the risk of aquaplaning. A strict specification exists for surface treatment, be it HRA, tar or bitumen macadam, or surface dressing to achieve texture depth and the required PS aggregates. This includes Texture, Durability and Skidding Resistance. The main drainage problem occurs on slack gradients on snaking roads where the transition curves run out and there is an area of dead flat.

2. CONCRETE ROADS must have a surface rugosity to obviate skidding and aquaplaning. This is achieved by either a stiff brush grain or mechanically tamping the surface before the concrete hardens. Hardened concrete can be incised with diamond edged wheels. Incision can cause road noise which can be overcome by banking the road sides and planting conifers. New approaches are to use Whisper concrete, a concrete base with final thin surface of higher PSV aggregates or the use of porous asphalt. Where a special finish is required Shell and BP have introduced a fine resin bound surface dressing for use on roundabout entrances etc.

3. The close proximity of trees leading to accidents in gales.

The speaker then gave details of road improvements in the South East that have been initiated from accident investigation :-

A24 North of Findon roundabout to Washington roundabout; the removal of reserve crossings.

The removal of the central reservation on the A259 near the Titchener roundabout.

Arundel Road near the Body Shop and Station Road, Rustington; islands have been installed to reduce speed and to prevent unsafe overtaking.

South of Leatherhead on the A24 the southbound carriageway has had the inner lane blanked out and rumble strips added to cut out fatalities that occurred from overtaking on a winding tree lined road.
All motorways and TR duals have count-down markers to slip roads and roundabouts to guide motorists.

TRAFFIC CALMING is now being introduced to cut down accidents in towns by reducing the speed of traffic and to improve the environment. There are three design principles involved: reduce traffic speeds, re-allocate carriageway space to restrict traffic activities and to redesign and enhance the street environment. In living areas, speeds are limited to below 20mph with reduced optical width, coloured road surfaces, refuge islands, planting, well designed street furniture and attractive lighting etc. In shopping areas and near schools speeds are restrained to 20 - 30 mph by vertical and lateral shifts in carriageway construction, roundabouts, small corner radii and priority management. The most contentious are the introduction of ramps and chicanes. Ramps have been installed at Goring with mixed reactions. Problems are grounding, increased wear on vehicles and highway, and strong opposition from the bus operators and the Fire and Ambulance Services. The trend is to use horizontal displacement for traffic calming measures.

TRAFFIC EDUCATION. Teachers are to receive traffic education by the LA Road Safety Unit and the subject is proposed for inclusion in the National Curriculum. Schools are encouraged to enter into partnership with the Road Safety Officer. A range of new initiatives with schools are being introduced :- (1) Cycle proficiency training. (2) Workshops in Traffic Education Centres. (3) The "Concept Keyboard" computer project. (4) Better driving courses for older children.

What of the future? Some suggestions have been made for further issues to be considered for Government Legislation. These include targeting the use of the random breathalyser test at places where drink is imbibed, permanently retaining the extra hour of daylight to reduce twilight or night accidents and fitting speed limiters to all vehicles.

D.J. Fuller

Soldiers All Three - Talk by K.H. Lambert, R.D. Sheffield & R.D. Ardagh members, at the Durrington Community Centre, 9th February, 1994.

The first speaker pointed out that during the war each was deeply involved in his own small part and seldom had an opportunity at that time to see the wider picture. The sum of these talks was to help towards such a picture. The common factors were rapid change, lack of resources and improvisation.

He described how in 1940, after completing a course at O.C.T.U., he served with a Divisional Field Company in Essex, on work connected with defence works, first on the

coast and then on a secondary inland defence line. He described various methods which he used to prepare bridges for demolition. The charges were, of course, later dismantled.

In 1941 in another company he was involved with anti-invasion exercises, ranging from the West Country to East Anglia, and other intensive training of all types.

In 1942 he was posted to India and served with the Royal Bromley Sappers and Miners for the rest of the war. He explained the different engineer set-up in India and the complexities of caste, language, and the great distances to be covered with poor lines of communication.

After service in various units, he participated in jungle training in the Behar area, following which his unit moved to the Arakan in 1943 as part of the 15 Indian Corps. The difficulties of the terrain and communication meant much work on roads and bridges, together with water supply and many other engineer tasks. After the successful defeat of the Japanese attack in early 1944, his unit was then trained in Combined Operations, leading to the landing on Ramsee Island in January 1945. Work at a very early stage on an elementary airstrip was followed by the construction of a much larger P.S.P. (Pierced Steel Plank) airstrip, by airfield construction units, for Dakotas, to supply the main 14th Army in central Burma.

Part of his company took part in the landing in May 1945 south of Rangoon, following which the formation (26 Indian Division) was withdrawn to India to reform for the projected landings on Sumatra.

By this time the speaker was recalled for eventual demobilization, having completed four years' overseas service.

Ken Lambert

The second speaker reviewed the method of training and the use of engineering resources in both the British and Indian Armies, by use of manuals and well-tried procedures, to achieve what amounted to a reasonable success story in this most important matter. His own experience demonstrated this and he cited as an example how he was able to train raw recruits in bridging, even though he had never completed his own training in this subject.

He also gave as an example of the good use of engineering resources by the formation of Road Construction Companies. These were a series of units formed at the beginning of the war by County Surveyors and their like, with their own staff as sappers. They were engaged on road and airfield construction and maintenance and, technically, were first-rate.

The speaker then referred to his experience with the Indian Army which, at that time, was struggling to mobilise from a very low strength at the beginning of the war of some 200,000 (65,000 of these being administrative) and, at the same time, to convert to a more mechanised army. The pre-war Indian soldier had been recruited from the martial

races, such as Pathams, Sikhs, Gurkhas. These men, all volunteers, although making excellent soldiers, did in general lack mechanical and electrical skills but, more importantly, lacked the mental framework for their new tasks. They proved, however, very willing to learn and could be very good indeed.

The speaker then told of his own experience with units of the Mechanical Equipment Group, to which he had been posted. These units were engaged in road and airfield construction on the borders of Burma and beyond. He also referred to a period at Imphal, on the border, when all allied troops were cut off from India, being supplied by air for some considerable time.

This time illustrated the reliance of the Army on decisions of the officer on the spot, however junior. These were often made with the minimum of information including, most importantly, engineering information. The main difficulty was maintaining the enormous length of the lines of communication through very difficult terrain.

Finally, the speaker related his experience with another Army group. This was the Madras Sappers and Miners. The sappers here were Madrassias, who were quite different from the members of the martial races. They were, however, highly intelligent and produced some very good work in an army which was becoming more and more mechanised.

Ray Sheffield

In Tudor times the permanent fortifications of the realm were too important to be left to the sole charge of generals and colonels as were the infantry. The locating, building, arming and crewing of forts and permanent emplacements was kept under the direct control of the Sovereign and became the Royal Ordnance. The Board of Ordnance employed a surveyor, a chief engineer and a master gunner.

The board was a largely civil organisation, but it came to employ more and more permanent military officers and personnel. In 1716 the board was empowered to raise regular companies of Engineers and Artillery and in 1741 the Royal Military Academy was established at Woolwich. In 1773 the Royal Engineers and the Royal Regiment of Artillery were formed in their own right.

Since Tudor times officers of the Corps of Royal Engineers have been expected to be skilled in "mathematicks, altemetry, geodoesia, measures of solid bodies, architecture. To make plots, models drawings of forts and camps all as commanded by Us".

So, in my case at age 18, I enlisted in the R.E. and was sent for six months to the university to perfect all these arts and sciences.

At 19 I was commissioned a Royal Engineer, one in a long line of engineers to the Sovereign. I was, of course, as green as the grass under my feet but, fortunately, I found myself, in a matter of weeks, with a Field Squadron recouping after the North African

campaign that had just ended. For the next year I was to be trained and to train others at the same time in a familiar pattern.

By the time I was 20 we were on the way to Italy and I had put the year's grace to good use; I probably was competent to do the duties of a junior subaltern by then. The last battle for Casino was raging, but we were not required and then Casino fell, Rome was abandoned by the enemy and the First Field Squadron joined the Eighth Army north of Lake Trasimeno. This was a great day, as we were the last operational troop.

One hears much about the fog of war, but it is very real and very dense. The prime function of a junior officer with a Field Squadron is to 'Find Out' and report back. Obstacles to forward progress must be spotted and men and equipment ordered up. Mines and other explosive devices will be liberally spread around and these just become a time-wasting distraction, as they must be made safe. In fact, the air can become thick with demands for mine clearance. Then, as fast as the troops move forwards, steps have to be taken to secure supply routes, as petrol and ammunition are required daily. It is Murphy's Law that the advance will not be on the line of any main road.

For three months there was no major battle, as neither side was ready to move. If you went too far forward, you were shot at and they missed and you stuck your tongue out because you were 20 and shot and shell proof. The engineering we did at this time was to remake blown culverts and small bridges, using oil drums as pipes and a Sherman bulldozer.

Then came Orders. The enemy were to be removed and to this end we, the entire Eighth Army, were to move over to the East Coast. Ancona had fallen to the Poles and the port could supply us in a push for Rimini. It would probably all be over in a week.

In fact the enemy had some very experienced troops, which were digging in on the hilltops and were to cause a lot of trouble. Ridges cross the line of advance, one after another, with a river in each valley. As we took one ridge, the enemy took all their heavy guns back to the next one. We soon had a supply route problem, as all the roads followed the valleys, and the fog of war also closed down.

I had command of a Troop by now and I was trying to get information up front, while most of my troop were making and mending the main supply track. In between there were the eternal requests to clear mines. Progress was slow and casualties were mounting. In fact, it took a month to take Rimini, not a week.

There were no great feats of engineering, the rivers were fordable until it rained, when the whole countryside turned to mud. The main problem was still one of information; the powers that be kept saying "the enemy are broken" and my eyes and ears said that we were getting nowhere fast. My case was settled a few days before we took Rimini; I collected a bit of shrapnel through the knee.

Then the supply route problem came home to me. The journey back to Ancona, where there was an airlift to base hospital, a distance of about 80 miles, took four days. Another hazard of war crept in, one met by Ted and Ray; disease. I collected a nice little bug in my knee, common on battlefields, and I have got it to this day.

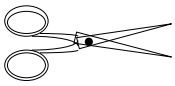
So war involves lack of information, great difficulties in getting out, infernal noise and quite a risk to health - unless you are 20 and fit, stay at home!

Denis Ardagh

Visit to Enichem Elastomers 14th / 21st April

The next visit is to: Enichem Elastomers, Hythe, Southampton at 2.30 p.m. The number of participants is limited to 14 per group therefore 2 visits have been arranged. Please state your preference of date to Ted Trotter.

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



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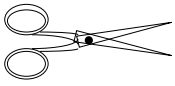
I wish to take part in the visit to Enichem Elastomers:

on Thursday, 14th April, 1994 at 2.30 p.m. Please state 1st or 2nd choice in box.....

on Thursday, 21st April, 1994 at 2.30 p.m. Please state 1st or 2nd choice in box.....

Name: (Block Capitals please).....Telephone.....



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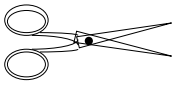
Visit to National Rivers Authority 3rd May

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.

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



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I wish to take part in the visit to National Rivers Authority Sea Defence work at Dymchurch

on Tuesday, 3rd May 1994 at 2.30 p.m.

Name: (Block Capitals please).....Telephone.....
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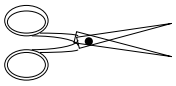
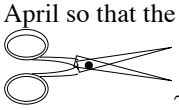


Personal Tax - The Finer Points - 13th April

As agreed at the Technical Meeting on 9th February, arrangements have been made for a lecture, independent from the RCEA programme, to be given on Wednesday 13th April, 1994 at the Durrington Community Centre at 2.30 p.m. 13th April.

A resumé of the tax provisions and changes in the 1994 budget and how these will affect your income tax, capital gains tax and inheritance tax will be given. The presentation will be by: Mr Alistair Vickers, F.C.A. and Mrs B.J. Smith, B.Sc.(Econ.) of Ayres, Bright and Vickers, Chartered Accountants, Worthing. Will members please signify their intention to attend by returning the form below by Friday 8th April so that the final arrangements can be confirmed.



To : H. Brown, 45 Aldwick Crescent, Findon Valley, Worthing, BN14 0AS

I wish to attend the meeting on 13th April on "Personal Tax - the finer points"

Name.....Phone.....