



An Association for Retired Professional Engineers

NEWSLETTER August 2015

President's Message

We open our new season on September 15th and start with the AGM followed by a presentation by Dudley Hooley on RAF Tangmere and the Special Operations Executive. Wartime operations especially those concerning the RAF have a specific poignancy this year being the 75th anniversary of the Battle of Britain when they prevented the Luftwaffe from gaining aerial supremacy over the UK thus denying them the freedom to bomb at will.

As engineers we should appreciate the enormous engineering effort required to fight a war of this magnitude against a very determined aggressor. Aircraft design was in its infancy and developing at an enormous rate during the period of WW2. Ever increasing demands on the sector were being made to produce more advanced designs and bring them to production without modern day aids while the enemy was trying to bomb us out of existence. Who said things aren't what they used to be!

As ever, we have a programme which should be of interest to all for the forthcoming period up until the end of the year the details of which you will find within this newsletter. The committee has worked hard to secure the services of some eminent speakers but I must remind you all of our quest to find future speakers from diverse sectors of engineering. As all of you must know colleagues from your days in industry who can talk and pour light upon some very interesting projects I urge you to make contact and introductions to help formulate the basis for future presentations.

At the moment we are at the time of year during which academia promotes itself to future students and when we get an indication of where they are heading. It's good to see a drift away from "soft" subjects towards those that will help to fulfil the requirements of science and industry. At last the penny seems to have dropped and it is realised that there is no easy way to earn a decent living. Now industry must step up its efforts to ensure that they can provide today's students with rewarding careers. At the moment politicians are putting great efforts on promoting apprenticeships. I just hope that they ensure that the subsidies given to employers for this purpose are properly used and that we do not end up with another gigantic exercise in dumbing down.

As you will learn at the next AGM I am coming to the end of my presidency. I have held the position for the past three years and although I have enjoyed every moment it is time for a change. I hope I haven't bored you too much with my own personal views and would like to thank everyone for the support I have been given. I would also like to thank all of the committee for their unending efforts in ensuring that the association continues to provide an interesting calendar of events.

There has been a re organisation of the committee which, if approved at the AGM, will take effect for the forthcoming year. Derek Webb is your president elect, the other positions you will be able to see from the AGM agenda. Ray Wort will be resigning after some 14 years on the committee being newsletter editor for 5 of those.

David Thomas

PROGRAMME OF EVENTS 2015-2016

Tuesday	15th September	AGM and Talk, Field Place, Worthing- RAF Tangmere and the Special Operations Executive.
Thursday	17th September	Coffee - at Spotted Cow, Angmering
Thursday	24th September	Coffee - with Partners Swallow's Return
Tuesday	13th October	Talk – Rampion Offshore Wind Farm
Thursday	15th October	Coffee - at Spotted Cow, Angmering
Thursday	29th October	Coffee - with Partners at Swallow's Return
Tuesday	10th November	Cooch Memorial Lecture – Rosetta and Philae – Unlocking the secrets of comets
Thursday	19th November	Coffee - at Spotted Cow, Angmering
Tuesday	24th November	Visit – Ricardo UK- Shoreham Technical Centre
Thursday	26th November	Coffee - with Partners at Swallow's Return
Tuesday	8th December	Talk – The Lighter Side of Defence Engineering
Thursday	17th December	R.C.E.A. Christmas Lunch, Windsor Hotel, Worthing
Thursday	17th December	Coffee - at Spotted Cow, Angmering

2016

Tuesday	12th January	Talk – Syphons made in Sussex
Thursday	21st January	Coffee - at Spotted Cow, Angmering
Thursday	28th January	Coffee - with Partners at Swallow's Return
Tuesday	9th February	Talk, TBA
Thursday	18th February	Coffee - at Spotted Cow, Angmering
Thursday	25th February	Coffee - with Partners at Swallow's Return
Tuesday	8th March	Talk, TBA
TBC	April	Spring Lunch
Thursday	17th March	Coffee - at Spotted Cow, Angmering

Thursday	31 st March	Coffee - with Partners at Swallow's Return
Thursday	21 st April	Coffee - at Spotted Cow, Angmering
Thursday	28 th April	Coffee - with Partners at Swallow's Return
Thursday	19 th May	Coffee - at Spotted Cow, Angmering
Thursday	26 th May	Coffee - with Partners at Swallow's Return
Thursday	16 th June	Coffee - at Spotted Cow, Angmering
Thursday	30 th June	Coffee - with Partners at Swallow's Return
Thursday	21 st July	Coffee - at Spotted Cow, Angmering
Thursday	28 th July	Coffee - with Partners at Swallow's Return
Thursday	18 th August	Coffee - at Spotted Cow, Angmering
Thursday	25 th August	Coffee - with Partners at Swallow's Return

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.

Coffee mornings commence at 10.30 am

Membership

Subscriptions 2015/2016

These are due on 1st October; can you please send your cheque for £15 to the Hon. Treasurer, Tony Tomkins, 2 Badger Drive, Haywards Heath, RH16 1EP
(Reply slip at end of newsletter.)

Website for the RCEA

For latest information, log into www.rceasussex.org.uk

New Members and Speakers for Talks

The RCEA needs new Members to ensure that we can continue as a thriving organisation. Please think of appropriate people you know and encourage them to join the RCEA.

We need more volunteers to give talks to us on Tuesday afternoons from September to March. Speakers from outside organisations are harder to find and often seek payments for the services. We are aware that many Members have the knowledge from their working careers to provide interesting talks. If you are willing to give a talk please let us know.

New Handbook

A new handbook is being prepared and it would be helpful if you let Malcolm Hind malcolmhind@msn.com know if you have any changes to your postal address, telephone number, or email address, as we now send out news updates and reminders of all our forthcoming meetings via email.

RCEA Insurance.

Members need to be aware that the insurance policy that the Association holds is solely for the protection for the assets and liabilities for the Association as an entity. The policy does not provide cover for personal injury or loss to individual members. Members therefore attend any of the Association's events at their own risk; although under some circumstances there may be some cover from the insurance arrangements of the venue owner.

Newsletter Entries

If you would like to provide an article for inclusion in a future newsletter it would be most welcome. We are always looking for new material. As a guide an article should be prepared as a Microsoft Word document, preferably in font size 10 and font style Times New Roman but this is not essential since all text will be 'standardised and formatted' when composing the newsletter. Pictures can be incorporated into the newsletter and are best supplied as JPEG images as separate files and separately from the text. (Word documents incorporating pictures can sometimes be very large files and are often not easy to manipulate into a suitable format for the newsletter.)

SOUTHERN RETIRED CHARTERED ENGINEERS

Events are arranged by the SRCE to which our members have a standing invitation. We have not received a current list of events in time for this newsletter. We hope to include a list in future newsletters.

Brief Detail – Talks, Outings and other activities September - December

AGM and Talk.

Tuesday 15th September 2015 -Tangmere and the Special Operations Executive.

Dudley Hooley, Director Tangmere Military Museum.

The Special Operations Executive (SOE) was formed in 1940, to conduct espionage, sabotage and reconnaissance against the Axis powers and to aid local resistance movements. It was initially also involved in the formation of the Auxiliary Units, a top secret "stay-behind" resistance organisation which would have been activated in the event of a German invasion of Britain. After the war, the SOE was officially dissolved on 15 January 1946.

RAF Tangmere was heavily involved in SOE operations and Dudley will present a brief history of the SOE, their operations from RAF Tangmere, and the agents and pilots involved.

Talk.

Tuesday 13th October 2015 - Rampion Offshore Wind Farm

Naren Mistry (Rampion Offshore Engineering Manager) and Richard Carpenter (Onshore Cabling Contract Manager)

Synopsis: The Rampion Wind Farm Project has been granted consent by the Secretary of State. Up to 175 wind turbines are to be installed on a 75 mile square site between 8 and 12 miles offshore located roughly between Goring and Saltdean. The configuration of the turbines has been arranged to reduce the impact on the view from the Heritage Coastline. Interconnecting cables under the seabed will transfer electricity to an offshore substation and then to shore. Rampion is planned to generate more than 2100 gigawatt hours of electricity each year, sufficient to power 450,000 homes. The operations and maintenance base will be located at Newhaven Port. It is expected that the first turbine will start generating electricity in 2017 and that full operation will commence in 2018.

Talk.**Tuesday 10th November 2015,****Cooch Memorial Lecture, Rosetta and Philae – unlocking the secrets of comets.”**

Professor Andrew Coates, Mullard Space Science Laboratory - University College London, Head of Planetary Science

Comets are ancient members of our solar system – the surviving ‘building blocks’ of outer planet cores. Last year, ESA’s Rosetta spacecraft was the first to go into orbit around a comet (67P) and Philae landed after bouncing initially, sending back historic images and data from the surface of the comet. The comet will get closer to the Sun until mid-August 2015 and the orbiter will continue to send results about the increasing activity of the comet, and Philae may even reawaken with increased illumination. Already, Rosetta results have shown us that these types of comets are unlikely to have brought much water to Earth, and we have seen the best images of a comet so far. In this talk we will look at the mission and some of the results, and will discuss why comets are important. We will also make a dramatic model of a cometary nucleus showing what it is made of.

Visit.**Tuesday 24th November 2015****Ricardo UK Shoreham Technical Centre**

Visit to the Technical Centre from 2.00 to 3.30 pm. The company is celebrating its 100th anniversary this year. Numbers will be restricted so members will be given preference over guests.

Reply Slip 1 is at the end of the Newsletter.

Talk.**Tuesday 8th December 2015, The Lighter Side of Defence Engineering****Perry Eastaugh RCEA**

Perry will take you on a light-hearted journey through his time in Defence Engineering, starting as a university apprentice at Rolls-Royce and finishing as QinetiQ’s PPP Director during the firm’s privatisation, via the Royal Naval Scientific Service at the Admiralty Oil Laboratory and a number of other MOD research establishments. While his ability to go into technical detail is limited by the Official Secrets Act and a failing memory, he hopes to give you an insight into some of the challenges he faced and a few of the characters he came across on his travels.

Christmas Lunch

Thursday 17th December 2015

RCEA Christmas Lunch, Windsor Hotel, Windsor Road, Worthing BN11 2LX.

The menu is as below and early booking is advised due to the limit on numbers catered for. Applications should be received by **Friday 4th December 2015** to ensure places. The cost this year is **£28 per person**.

Reply Slip 2 is at the end of Newsletter.

'Resident' parking tickets can be obtained from reception if hotel car park is full. Handicap parking can be arranged by including car registration number with booking application.

Lunch Menu

Sweet Potato Soup
Goat's Cheese – With a Beetroot Relish set on a Rocket Salad
Spiced Prawn Bruschetta – With Coriander Salad and Warm Sweet Chilli Sauce

Roast Breast of Turkey - With Honey Roasted Gammon and Cumberland Chipolata
Braised Pork Loin – Set on a Caramelized Parsnip and Apple, with Cider Gravy
Slow Cooked Beef – With a Peppercorn and Whiskey Sauce served on a Horseradish Mash
Piri Piri Salmon – Grilled and served with Chunky Bean Salsa
Winter Vegetable Stew with herb Dumplings
All Served with seasonal vegetables

Christmas Pudding - with brandy sauce
Banoffi Sundae
Chocolate and Orange Torte – With a Grand Marnier Cream

Coffee and mints

Reports

Outing:

Thursday 14th May 2015

Cruise on the Wey and Arun Canal

On a very wet day thirty six members and their partners met at the Wey and Arun canal at Loxwood. Twenty-four of the group chose to have lunch at the nearby Onslow Arms before embarking on the Wiggentholt canal boat. This is a modern electrically driven vessel (a technical description is shown below). The skipper, who had already operated a morning cruise and was somewhat damp, gave his safety drill before going out into the rain again. Teas and coffees were served as we progressed. We then went through Baldwin's Knob lock and the canal seemed to get narrower, probably due to reeds etc, growing on the canal banks. We approached Drungewick and slowly entered the aqueduct which crosses the River Lox. We paused there for a short time and those willing to brave the weather went onto the prow to look down to the river below. The aqueduct had been constructed in 19xx and allowed the reconstruction of the canal to proceed through Drungewick Lock and onwards to where the River Arun was close enough for water to be extracted and back pumped around the locks towards the summit. We were told that extraction from the Lox was very restricted. Wiggentholt then reversed, turned at the winding point adjacent to the slipway where canal boats are removed for maintenance, and set off back to the Canal Visitor Centre near the Onslow Arms.

Despite the rain most people indicated that they had enjoyed the trip. Those that had not probably kept quiet!!

WEY & ARUN Canal Trust
www.weyandarun.co.uk

Boat trip from The Onslow Arms to Drungewick Lane (about 2 hours return) or Drungewick Lock (about 2¾ hours return)

LOXWOOD
Onslow Arms
Brewhurst Lock
Brewhurst Bridge
WACT Car Park
Brewhurst Mill
Brewhurst Lane (private road)

Baldwins Knob Lock
Here at Birch Copse you will see a pipe used to pump water into the canal from the River Lox. The Canal Trust has to pay for the extraction licence and the electricity.

Barnsill Bridge
Barnsill Bridge was rebuilt in 1989 by a local landowner - this was the first major piece of restoration on this section of the canal.

Drungewick Aqueduct
The Canal Trust built the double slipway in 2002-3. The one on the left uses a cradle on rails to take large boats such as *Zocheriah Koppel* in and out of the water. The one on the right is for smaller trailable boats.

Drungewick Lane Bridge
The Canal Trust restored Drungewick Lock in 1989-91 and further refurbished it in 2003-4. The winding hole immediately below the lock was constructed in 2003.

Drungewick Lock
The Trust's work boat *May Upton* uses the Drungewick slipway.

Between 2000 and 2003, the Canal Trust built a new aqueduct, a new road bridge and a heavy plant crossing in the Drungewick Lane area.

For more information on this area, please see the short trip map on the other side of this sheet.

B2133 To Billingshurst

Legend:
 << Lock
 Landing stage
 --- Towpath
 'Winding hole' (turning place)

0 metres 500

An aerial view of Drungewick aqueduct just before the official opening ceremony in 2003.

A pair of swans usually raise a family on the canal each year.





On board the Wiggonholt



Baldwin's Knob lock
Lovely weather for ducks!!!!



The work boat at the bottom of the slipway where boats are hauled out of the canal for maintenance.

Wiggonholt - technical specifications

Length	Overall 18.5m (60ft 8in) without fenders. Decided on as the maximum length that will fit in the Wey & Arun Canal locks. They are notionally 68ft long but measurements show substantial variations under this figure.
Beam	2.9m (9ft 6in). Chosen as the best compromise between passenger seating plus adequate gangway and capability of passing through bridge-holes without hitting superstructure. Even so, the cabin walls have a substantial 'cutaway' to the roof.
Draught	0.46m (18in) laden - chosen to be similar to the Trust's current boats and therefore able to move through the shallow sections.
Gross Weight	(without passengers) approximately 21 tonnes.
Passenger Capacity	52 seated in groups of 4 around small tables. Licensed to carry 60
Seating arrangement	Totally flexible. Chairs and tables (or no tables) can be arranged in any configuration.
Facilities	Access lift to enable goods and materials to be brought on board without lifting down steps. Adaptable to allow passengers in wheelchairs to be brought on board. Flushing toilet. Wash basin with running water. Toilet capable of taking passenger in wheelchair. Large foredeck, seating for 6. Double sliding windows, so that in the normal seating configuration each passenger by a window will be able to have it open or closed. Cabin and running lights fitted so that the boat can be operated after dusk.
Propulsion	Two 'Lynch' type, permanent magnet, 48-volt DC motors. Each rated at 10kW. Normal cruising will take between 2 and 4 kW. Reserve of power is for emergency stopping or manoeuvring. The two motors drive the single propeller shaft via individual toothed belts. This allows a 'get home' capability should a belt or motor fail. The boat is also fitted with a bow thruster to assist with manoeuvring through some of the tighter bridge holes on bends and when turning.
Power supply	Two banks of 24-volt, lead/acid traction batteries, connected in series to give 48 volts. Batteries have a capacity of over 1250 Ampere hours.
Range	On a full charge the boat is expected to be able to do 3 full-length trips and 2 short trips, fully laden, and still have an emergency reserve equal to an hour's running. Without the reserve the capacity is equivalent to travelling approximately 20 miles, negotiating 22 locks and turning 10 times.
Speed	Design average speed on the Wey & Arun Canal is 3.2 kph (2 mph) due to the shallow and silted nature of the canal. On open or deep water the boat would do considerably more. Any attempt to travel more than 4.8 kph (3 mph) on the W&A canal will result in a dramatic reduction in range due to the extra demand for power on the battery.
Charging	Power will be taken from the electricity supply opposite the Onslow Arms. The charging system is designed to give a full charge overnight.
Solar power	Consideration has been given to fitting solar panels. At this time they do not give a financial return on the cost. However, the system has been designed with a future installation in mind should such panels become financially viable.

Outing:

Tuesday 16th June 2015

Chichester Festival Theatre Trip

On 16th June 21 members visited the Festival Theatre at Chichester for a behind the scenes tour.

The group split into 2 groups one of 10 and one of 11 and 2 guides escorted us around, 21 in one group would have been too many.

Some general information was given in the foyer before the tour started such as explaining why the refurbishment was needed, timescale and costs involved.

The theatre is a grade 2 listed building and reopened on 12th July 2014 after a programme of refurbishment lasting 20 months and costing some £22 million.

The refurbishment not only affected the auditorium and backstage areas but also the foyer and outside eating and drinking areas. Additional toilets were installed and because of the hexagonal shape of the building the complex is mirrored so is identical on both sides.

The tour took us into the 'Green Room' which is used as a relaxing area for both staff and performers. It is equipped with a substantial kitchen facilities and patio doors leading to an outside grass area. There are monitors so the actors can watch and listen to what is happening on stage.

We then moved into the costume and wig making department and saw the array of different costumes and make up areas available for the players.

A visit to the dressing room corridor was next where it was explained that there is no 'star' dressing room and with a look into a couple of rooms we were able to get a flavour of the experience.

Now for the more technical bit. A visit to under the stage area and we were shown how following the refurbishment the stage was in fact a giant meccano set with the facility to install and remove 'bits' depending on the production. We were shown the backstage area where general maintenance and carpentry could take place to perfect pieces of scenery that may require such attention.

Finally it was into the auditorium to view the seating and stage layout, a peek into the sound and lighting control room completed the tour. The refurbishment means that the theatre has reduced its carbon footprint by using the most up to date technology and the revamped seating arrangement has give the public a more enjoyable overall experience. Upgraded insulation has improved the thermal and acoustic performance of the building. More sustainable technologies are used to minimise future running costs. Outside the car park arrangements have been made easier and access for lorries for the moving of equipment direct to backstage areas has been greatly improved. The tour lasted just over the hour but an awful lot of interesting and informative detail was given to make a very enjoyable morning.

George Woollard

Outing:

Wednesday 15th July 2015 - Worthing Croquet Club.

9 members and guests (one non-playing) joined Worthing Croquet Club for the afternoon to be initiated into the mysteries of playing croquet. The club is situated on the lawn to the east of The Barn building at Field Place where there are 2 x 3/4 size lawns and 1 full size lawn where croquet is played 7 days a week from 10 a.m. till dusk

RCEA member Chris Wood, along with club members, explained that croquet can be a fiercely competitive game of skill and strategy for teams or the individual. Fortunately, we were to play a rather genteel 'fun' game. Once the basic rules were explained we split into teams and off we went. Two teams of two, playing each other with a club member to guide us and to demonstrate the finer points of the game. After one game we stopped for tea and biscuits - then another game.

Many thanks to Chris for organising the outing and to the members who helped. Also for their patience in showing novices the finer points of the game – and supplying tea and biscuits. A most enjoyable afternoon.

Randall Keir

SUBSCRIPTION REQUEST: (2015/2016)

To: Treasurer, A J Tomkins, 2 Badger Drive, Haywards Heath, RH16 1EP

Full name:..... **Telephone No**

Address..... **e-mail**.....

.....
.....

I enclose a cheque made payable to RCEA for £..... (**£15.00**)

Please return this form by 1st October 2015 (Separate cheque please)

REPLY SLIP 1

To: Malcolm Hind, 7, The Castle, Horsham, RH12 5PX

Tel: 01403251719 or email malcolmhind@msn.com

I would like to attend the **visit to Ricardo UK – Shoreham Technical Centre on Tuesday, 24th November, 2015 at 14:00pm.**

The company is celebrating its 100th anniversary this year. Numbers for the visit are strictly limited to 25 on site and places will be allocated on a first come first served basis with priority given to RCEA members. It is anticipated that the visit will conclude at 15:30pm.

Name..... **Telephone**.....

Address..... **e-mail**.....

.....
.....
.....

Applications by 1st November, 2015 please.

REPLY SLIP 2

To: George Woollard 18 St Lawrence Ave, Worthing West, BN14 7JF (01903 523640)

E Mail : Georgewoollard1@hotmail.co.uk

Can you please reserve me places for the Christmas Lunch at the Windsor Hotel, Worthing on **Thursday 17th December.** 12.00 for 12.30.

Full name:.....(Block capitals)

Address.....

.....

.....

Telephone Number.....Name of guest/s

E mail address.....

Car registration number for disabled parking

I enclose a cheque made payable to RCEA for **£.....(£28.00) per person**

(Separate cheque for this event please)

Applications by Friday 4th December

If possible, I would like to be seated with.....

Menu choices

Name 1	Name 2	Menu choice
		Sweet Potato Soup
		Goat’s Cheese – With a Beetroot Relish set on a Rocket Salad
		Spiced Prawn Bruschetta – With Coriander Salad and Warm Sweet Chilli Sauce

		Roast Breast of Turkey - With Honey Roasted Gammon and Cumberland Chipolata
		Braised Pork Loin – Set on a Caramelized Parsnip and Apple, with Cider gravy
		Slow Cooked Beef – With a Peppercorn and Whiskey Sauce served on a Horseradish Mash
		Piri Piri Salmon – Grilled and served with Chunky Bean Salsa
		Winter Vegetable Stew with herb Dumplings
		All Served with seasonal vegetables

		Christmas Pudding - with brandy sauce
		Banoffi Sundae
		Chocolate and Orange Torte – With a Grand Marnier Cream

(Please keep a note of your requests)