

Retired Professional Engineers Club Bristol

Newsletter Autumn 2011

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Founded by
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Ceng MIEE

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This Edition

This edition consists of a review of talks and visits made during the summer and autumn 2011. For some time we have, I fear, neglected to supply the newsletter to members who are not online. This is being put right and this newsletter will be posted to members without an email address. It will not be an exact reproduction of the website one - slide shows and videos will not work on paper. The reproduction of photos on plain rather than glossy paper also is a problem, they cannot be blown up to full screen as many are in the live newsletter.

The ability to use a computer is becoming more and more a necessity. Another example is the listing of "[Sources of Financial and Practical Help](#)" prepared by Mike Rowe and now available from the Contacts page onsite. This lists about 50 organisations that can provide help when help is needed. It is the hyperlink to contact pages on each organisations website that ensures that telephone numbers, email, fax and postal addresses are up to date. The computer can regularly scan to ensure that the links are still valid. A paper version with the full contact data would have to be regularly reprinted and updating would require considerable time and effort.

A Century of Small Steam Locomotives

A talk by Andrew Dick

At our July meeting Andrew Dick gave an insight into his enthusiasm for small steam locomotives. Andrew, an RPEC member, delivered his talk in two parts.



"Josie" The Locomotive

The first part featured Josie, the coal fired 2.5" gauge locomotive, which he had built from a set of plans designed in 1933, by Lillian Laurence (commonly known as LSBC owing to the confusion caused by his first name). The plans had originally been based on an American 4-6-4 New York Central engine with a typical high smoke stack and cow catcher, but Andrew had anglicised the design although it still bore some indications of its origin. The build had originally been started by someone else but Andrew took it over at an early stage as a very incomplete kit of parts, some of which were not satisfactory and had to be remade. Andrew told how in 1948 he collected his kit of bits on his motor bike and with the bits rattling against each other in his rucksack he made his way home to start his build. Marriage and family took its toll on the progress on this project and it was not until the year 2000, and some 6000 hours work later, that Josie was given her debut run at a track at Cheltenham.

During his build Andrew had introduced a number of enhancements to the design. These included, PTFE piston rings, a feed water heater using exhaust steam and a centrifugal oil separator to prevent oily steam being injected into the smoke stack and so keeping the driver's face clean and oil free. In addition Andrew described a number of the issues posed by the build and commissioning. These included finding suitable materials for the piston valves fitted to this design. It took five

attempts to finally arrive at gun metal. Earlier attempts using different metal combinations either wore out too quickly or seized up. He also explained that he had found that the engine performed significantly better in reverse on a slope and had spent much time examining the valve timing before realising that the brakes were binding when going forward up hill. This was resolved by stiffening the wheel springing on the rearmost set of wheels.

Although small, the engine with its superheated 60-65psi boiler pressure is capable of pulling the driver and a 15stone passenger. It can go at an actual speed of 10mph (a scale speed of 240 mph).



Piston valves, Cylinders and Transmission

In the second part of his talk Andrew explained that interest in model steam engines had initially been championed by the Model Engineering Magazine circa 1895. LBSC (see above), after working for the LBSC during the First World War, started designing and building model steam engines with fire tube boilers and super heaters. At the same time Basset Lowke was designing and commercially manufacturing model engines with simple kettle boilers and there was tension between the two manufacturers. At the 1924 Model Engineering Exhibition the Model Engineering Magazine sponsored a "battle of the boilers" with LBSC putting forward one of his engines and Henry Greenly putting forward a Basset Lowke engine. The trial was held over a simple up/down line with the number of transits in a fixed time counted. The results were in a way inconclusive with Greenly making 20 passes and LBSC 19½. However, Greenly's driver was only 9st whilst LBSC's driver was 12 stone and on this basis LBSC was awarded the prize on the basis that his engine was more powerful.

Prize winning models today are expected to be faithful to the full scale original in every detail down to the number of rivet heads and the lining.



Josie and Andrew Dick

All those present will, I am sure, agree with me that Josie is a very impressive piece of practical engineering and we perhaps can understand why Andrew likes to describe her as his mistress. We would all like to thank Andrew for introducing her to us and giving us an insight into her background.

**Julian Todman
incl. photos**

Review of the Visit on 16th August 2011 by the R.P.E.C. to The Museum of Bath at Work.

Some 20 Members with wives and visitors attended the visit – the number expected. It was especially pleasing that several members of long-standing who live in the Bath area but are rarely able to attend the general run of meetings were able to come. The weather on the day itself was quite good and some took advantage of their visit to look around Bath a bit.

We were warmly greeted and taken round in two parties by volunteers who were both enthusiastic and very well informed. The Museum runs rather on a shoestring, having only one paid member of staff and a corps of volunteers (some of whom have been serving there for 20 years) to which they would love to add other names. It is a fascinating place : many said that they would have to return at least once more in order to see things that they had missed. The ladies also appeared to be fascinated by the Museum. The Museum is so rich in displays and objects of an incredible variety that it is impossible to

give anything other than a brief overview of the various areas : you really do need to see for yourself!

The visit started at the original Bowler's shop counter which probably represents the state of affairs 20 years before I first knew it, over 50 years ago. An incredible agglomeration of all manner of ironmongery and brassware : hinges, brackets, plumbing bits, loo chain handles, lockpicks. No matter how unlikely my request, the very elderly gentleman behind the counter at that time invariably recognised what I wanted – and then found it!

There were, however, several hidden faces to Bowler's, of which I was totally ignorant before the establishment of this Museum. Much of the rest of the Museum is devoted to these aspects. From the counter, we went on to view the machine shop : a wide range of machine tools largely from the 1870s, all driven by overhead lineshafts. It was still largely like that in the big factory where I started my student apprenticeship. Then followed the small brass foundry, with the furnace, patterns, mould boxes and many of the tools followed by the pattern shop. Bowler's also had a tin and coppersmith's shop, very well provided with all the tools necessary for those trades. Adjacent to this is the plumbing and gas-fitting area, again with all the tools, and examples of the gas-fired precursors to neon signs. Something to further inflame an H&S man! There was also a flourishing business in making , bottling and distributing fizzy drinks. Every aspect of this trade is well illustrated by equipment, objects and information panels.

Just round the corner from the counter is a Horstman car : not many were made and only 9 survive. Horstman's was a major employer in Bath and still has a factory there, although the precision gauge-making has long gone, remaining with electronic time switches, central heating programmers etc. rather than the mechanical gas lamp clocks and bomb time fuses of the past. My father-in-law worked there all his working life, fire-watching during the last War and Gauge Shop foreman for many years. Other manufacturing businesses in and around Bath are also covered in lesser detail : Harbutt's Plasticene, Stothert & Pitt – crane-makers to the world - of which only a spare parts business remains, where my wife's cousin served his craft apprenticeship, Pitman's Publishers (where my wife's grandmother worked), Cedric Chivers Book Binders (where my mother-in-law worked) also merited a mention, although the "Bath Oliver" biscuit was



mentioned nowhere ; nor were Frederick Bayer – corset makers . Rotork (who had automated the machine tool demonstration) were covered : very active still in the Defence market as well as pipeline valves. Finally, there is a substantial exhibit on Bath stone with a quarry scene. There were, in fact, so many small and not-so-small manufacturing businesses in Bath over the years that it would be impossible to cover them all. More are covered in the reasonably priced books available at the Museum.

There is also a high-tech audio-visual display adjacent to the cafe area, showing many aspects of Bath life. All in all, a compact but most impressive and interesting museum. It is the sort of place to which you could return time after time and still spot something new.

Michael Rowe.

REMAP – Technical Aids for the Disabled

At our September meeting Bruce Lee (not of Kung Fu fame as Bruce stresses) spoke on the charity **REMAP**.

REMAP was started by Pat Johnson an ICI executive, who started designing things to support his sister, a victim of polio. Pat had a friend whose brother was also a polio victim and so the work began. This was some forty years ago and today there are some 85 **REMAP** local groups across England, Wales and Northern Ireland. These groups have a total of 1500 Volunteers and help some 4000 people a year.

REMAP works with people who have problems doing the common place tasks of life. The aim is to provide solutions enabling them to carry out such tasks for themselves. Most available disability aids are expensive and aimed at generalised problems in order to make a commercially viable product. Such products do not meet peoples specific needs very well owing to their generalised nature .

REMAP seeks to provide customised solutions optimised to the individual client. This it does by initially visiting and discussing the need directly with the client and their occupational therapist where they have one. Following this discussion the **REMAP** Volunteer goes away to devise and build a prototype solution. The prototype is given to the client to try and their observations and views are worked into the design before the final solution is built and delivered.

REMAP Volunteers are a varied lot and new volunteers with suitable skills and experience are always welcome. Current volunteers include:

- Engineers and technicians
- Craftsmen such as woodworkers and metal smiths
- People skilled in electronics and electrics
- Keen model makers
- People with other 'softer' skills such as upholstery
- People with health professional knowledge such as occupational therapists or physiotherapists
- People with specific assistive technology experience
- Product designers
- Competent DIYers
- Good organisers
- People with administrative, secretarial and computer skills
- People with PR and photography skills

REMAP Volunteers get great personal satisfaction from their work and the degree of commitment is flexible to match the volunteer's circumstances. The Bristol Group has 10 to 12 active members and helped 240 people last year. They meet once a month to review progress, exchange materials and ideas and allocate jobs.

Bruce brought with him some of the solutions that the local Bristol Group have provided. Some of these are very simple to look at but none the less allow people to do everyday things. Some examples are given below:

- The Two Ended Peg. Many things require two hands to do easily - e.g. pegging out the washing. Normally one hand is required to hold the washing to the line whilst the other hand applies the peg. **REMAP** has produced a two ended peg (two wooden spring loaded pegs stuck together back to back) which can be operated by one hand. One end of the peg is attached to the washing using the one and only hand. The other end of the peg is then lifted (with the washing) to the line and applied using that same hand. Voila! washing pegged to line with just one hand.
- Management of Oxygen lines. Many people require oxygen supplied by plastic tubing to a nasal canula. Where the people are mobile (say in a wheel chair) the tubing trails across the floor and can become tangled, become a trip hazard, or can become kinked and obstruct the flow of oxygen. By attaching the tube to a slinky (a childs toy in the form of a coiled spring) the tubing can be deployed by a moderate pull but is retrieved into a tight coil when the pressure comes off.



Bruce Lee delivering his talk



Devices designed by REMAP

Other Projects: Pen holders, knife holders, various specialised clamps to fix things to wheel chairs and a wheelchair baby carrier have all been designed.

Not all things are quite so simple and a solution to allow people with very limited dexterity to operate a Kindle Reader has also been produced.

The materials for projects are begged, borrowed or brought and many of the volunteers have stocks of useful items gleaned from car boots sales, surplus stores, skips, free cycle, the scrap store and off cuts left over from previous jobs.

The solutions are free to the user and finance has to be raised by the local groups to cover materials and other running costs. The average cost of a job is £17-20 including materials and visits. Last year the total budget was £4000. **REMAP** makes a little money go a long way but finds small levels of funding are difficult to obtain as commercial businesses and organisations making charity grants are normally looking to make large prestigious donations that hit the headlines. **REMAP** is thus always looking for ways to fund its work.

Julian Todman

REMAP contacts Mr. Bruce Lee, Bristol **REMAP**, Tel. 01453 843404 web site www.remap.org.uk

The Production of Wild Life Series

A talk by Ted Oakes from the BBC Natural History Unit

This talk at the October meeting proved to be very special. The BBC natural History unit based in Bristol operates all over the world and there was uncertainty whether Ted Oakes would be available until the day before the meeting. Mike Rowe our Events Secretary had alternate speakers on other subjects available but in the event they were not required.

Ted is one of a team that goes to locations where they can acquire the video shots of wild animals that the BBC Natural History Unit are famous for. Ted showed us video clips from several series where he has been a producer such as "Life" and "The Bear Family and Me" giving us details of the problems and solutions encountered during the production.

One result of Ted's presentation is that for me he has changed the way I view these wildlife programmes. A new dimension has been added. There I am in an armchair and up to now there was a wild animal in the television set (safely ensconced), this has changed - the person behind the camera has intruded. The BBC are very careful to remove any trace of the camera or the persona behind it, even to editing out any shadow should it appear - so he is not in the TV but there is no doubt now that he is present - the video itself proves it. The long hours he has been waiting for all the unpredictable moments that appear, the multitude of clips obtained to produce a complete sequence, the lucky moments and the missed opportunities are all present. Surprisingly the wild animal has moved much closer as well! I am not the only member who has experienced this following Ted's talk.



Tom Oakes at RPEC

photo by Michael Rowe

We are very grateful to Ted for providing us with an insight into a world somewhat different from our past Engineering experience but requiring a similar organised approach.

*By visiting the **members only page** a further development can be viewed.*

Marcus Palmen

Autumn Luncheon 2011

Photos by Michael Clinch



This preliminary preview of the report on the Autumn Lunch contains only one item - the photo slideshow with all the photos except the last one by Michael Clinch. The last one was taken by an official photographer of Michael receiving his MBE from the Princess Royal. Seldom has a more well deserved award been made. In particular his work in Victim Support over many years has made life easier to bear for many who have suffered. We can all take pride in the achievement of our founder member.

