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# Lichfield Science & Engineering Society

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Dear Member,

At last a Newsletter which starts on a note of cautious optimism. We've had three live meetings. Visits have continued live, both indoor and outdoor. The Annual Dinner is booked. The Society's activities are getting back to normal. I hope.

The December meeting in the Garrick Main House had not been as well attended as we'd hoped and the January speaker Professor Stuart Haszeldine wasn't keen on coming out so back to Zoom. He gave an encouraging talk on Hydrogen as a power source for the future. It's usually thought of as providing motive power but Stuart is involved in a trial of feeding it to homes in Fife, replacing natural gas. In February, Zooming yet again, John Davies spoke about the engineering of the sub-sea power cables between the UK and the Continent through which huge quantities of electricity flow in both directions. The current in the cable is direct to minimise losses over long distances and conversion takes place at both ends. In March, appearing live at the Garrick before an estimated audience of over 100 including an unusually large group of students, Professor Richard Buggs discussed the sudden appearance of flowers, a mystery which Darwin described as "Abominable"; a talk which fascinated even the non-botanists.

It was at this point that the upward trend in the Society's fortunes turned downward. The weekend before the April meeting the speaker, Professor Simon Schaffer, was diagnosed with Covid. Desperate attempts by the Committee to find a replacement failed and his talk on Alan Turing had to be cancelled. We hope that when he recovers we will be able to re-arrange it.

The remaining two lectures of the season were live. Appearing after the Society's AGM, our May speaker Mr Navin Furtado showed how, as a neuro- and spinal surgeon, he relieved pain and restored functionality not only with surgery and drugs but also using prostheses, which explained his reference to Robocop. Finally, in June, Dr Rupert Beale, the latest in our line of speakers from the Crick Institute gave what we hope will be the last of our virus-related talks for a while. Not only viruses; he explained how their variants occur and how vaccines work against them.

Don't forget that if you want to watch a lecture again or even try to understand it the second time around you can find recordings of most of them at <https://www.lses.org.uk/member-area/>

On 1<sup>st</sup> February eight members enjoyed a visit to Clayton Equipment and a discussion with their MD on a wide range of the engineering in the design, construction and operation of their railway locomotives. The company can offer both narrow and standard gauge locomotives on a bespoke basis appropriate to customer's requirements and for a wide variety of applications such as mining and tunneling. Surface work for shunting and haulage can involve locomotives up to 135 tons powered by battery, diesel or battery-diesel. Battery power is increasingly demanded for low maintenance costs and emissions. Part of the visit was a tour of the erecting-shop. Components are preferentially UK sourced and many of the locomotives are exported worldwide.



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On 24th March 24 members were welcomed by Prof Shahin Rahimifard and Dr Denis Sleath to The Centre for Sustainable Manufacturing and Reuse/Recycling Technologies at Loughborough University. They gave a presentation on the Centre's research on sustainability and recycling, emphasising eco designs and end-of-life management. We toured several of the research laboratories, one of which focussed on the capabilities of 3D printing and another on mechatronics, the combination of electronic and mechanical engineering. The Sustainable Manufacturing laboratory is working on recycling shoe leather as animal feed.

Twenty one members assembled in Darnford Park on 14 April to be met by Peter Buck, Engineering Director of the Lichfield and Hatherton Canals Restoration Trust. They traced the route from Darnford Park, along Tamworth Road, where a cutting is currently being dug to provide access to a future tunnel under Cricket Lane. Then along the recently opened Lichfield Southern Bypass terminating at the Falkland Road restoration site. The enthusiasm of the army of volunteers appears to be as strong as ever and Members could appreciate the significant advances made since our visit some four years ago.

On 20<sup>th</sup> May 18 members were treated to a well organised visit at Meggitt PLC, an aerospace components manufacturer situated on the high tech park at Ansty, Coventry. The facility was opened in March 2020 at a cost of £140m and has nearly 1000 employees. Meggitt consolidated a number of separate production sites at Ansty, which also became the Company's Global Headquarters. Manufacturing is split into two products – aircraft oil temperature control systems and braking systems. Meggitt produce new braking systems and refurbish old ones.

Having passed an understandably strict security clearance on arrival at Collins Aerospace in Wolverhampton on Tuesday 14 June, 18 members were given a highly professional and informative presentation of the Company's operations. Collins is a unit of the large American aerospace Company, Raytheon and employs over 1400 staff at their Wolverhampton site. The company specialises in two products, actuator systems for the wing flaps and for the thrust reversal systems, parts of which seemed too big to ever get off the ground. The test rigs were laid out to replicate a full-size aircraft wing. During an enjoyable buffet lunch, young engineers and recent graduates explained their roles at the company.

I for one have greatly missed the Summer Supper and Annual Dinner; the Committee is working on it and the Dinner will take place this year. Sadly we have been unable to find a suitable venue for the Summer Supper.

My thanks go to all Members and especially to the Committee, for their unfailing support through a very unusual and difficult couple of years. I look forward to seeing many of you in September and onwards when I think you will find the 2022-2023 programme well up to our usual standards.

Best wishes,

Mike

PS. The enclosed Autumn Visits and Dinner booking forms are in the Members' Area of the website; there you can open them in Word, overtyping on them and mail them straight back. Untouched by human hand!