

The Science and Art of the Pyrotechnician

October 2016

Members of the Science and Technology Group gathered at Erica's house for their October meeting to hear Colin Tufnell give a fascinating talk on the development and use of pyrotechnics – from the early days, when simple explosive devices were constructed in fairly primitive factories (usually by women because of their smaller hands) to the present day's professional displays, such as we see along the Thames at times of national celebration (New Year, millennium, the Queen's jubilee, etc.).

Colin explained the different categories of fireworks available for purchase. However, very few of these, only two, can be bought from retail outlets by individuals for private use at bonfire parties and the like. The vast majority are sold to organisations with a special license to mount public displays for which the safety regulations appear to be very stringent. There is now only one manufacturer of fireworks, Kim Bolton Fireworks and run by the Reverend Ron Lancaster, in the U.K.; most of the imported stock comes from China (well, there's a surprise!). Ron Lancaster taught chemistry at Kim Bolton School and is now, probably, the foremost firework chemist in this country.

I found the economics of mounting a firework display quite amazing: although a 15 minute display of the more impressive fireworks could cost up to £2,000, it is not difficult to see that if thousands of people are charged £5 each (or more!) to watch the display from a nearby restricted area (such as the opposite bank of the Thames), then the profit margin could be considerable. I seem to recall that our national New Year firework displays are barely more than 15 minutes in duration and the River Thames itself provides (free of charge) the requisite safeguard of ensuring that the public cannot get close to the firing area.

Following his talk, Colin gave a demonstration (in the garden!) of the different types of fusing being the basis of a firework display.

Thanks go to him for a very interesting talk and to Erica for providing refreshments, including her usual delicious apple cake.

Janet Cato

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[Ron Lancaster on You Tube, London 2016](#)