Towards a Longer History of British Women in Engineering

Elizabeth Bruton and Graeme Gooday discuss women in engineering before, during, and after the foundation of the Women’s Engineering Society in 1919.

In 2019, the UK’s Women’s Engineering Society (WES) will celebrate the centenary of its foundation with events and activities, including an HLF-funded Centenary Trail that commemorates WES’s interwar origins. But women’s involvement in engineering in Britain pre-dated the foundation of WES in June 1919 by the aristocratic Lady Katharine Parsons and the upwardly mobile Caroline Haslett. Instead, then, we draw attention to the somewhat longer but less visible history of women working in British engineering.

Patricia Fara’s recent book A Lab of One’s Own: Science and Suffrage in the First World War (2018) very effectively looked at how pre-World War I campaigns for women’s votes also generated opportunities for women in science and technology during the First World War. Fara gives three brief examples of women in wartime engineering: Rachel Parsons, Hilda Hudson, and Victoria Drummond. These women’s participation undeniably helped to meet the wartime manpower shortages that temporarily overrode traditional gendered assumptions about who could serve as an engineer. Yet our story begins a whole generation before the advent of the so-called Great War.

Pre-war Female engineers

Family and kinship were important factors enabling women’s contribution to engineering in the late Victorian period, and most obviously in the exciting new terrain of electrical power and lighting. The female spouse in a number of electrical engineering couples worked in supporting the electrification of the home from the 1880s, either directly in collaboration with their male engineer partner or in some cases semi-independently. Among these electrical engineering couples, women’s work was rarely given much public credit. Important exceptions arose, however, when these partnerships wrote published books together.

For example, Alice Gordon was credited as the main author of Decorative Electricity (1891) in the guise of ‘Mrs J. E. H. Gordon’, with her husband James Edward Henry Gordon contributing a chapter on fire risks, and credited as Director of and Consulting Engineer to the Metropolitan Electric Supply Company. In this book, Alice Gordon not only established her reputation for aesthetics and domestic economy in electrical lighting, but the concluding chapter ‘Some Personal Experiences’ gives a rare glimpse of how an ‘engineering wife’ could be integrally involved in the expert management of machines, employees, and innovative practices.

Similarly, Maud Lancaster co-authored Electric cooking, heating, cleaning, etc. being
a manual of electricity in the service of the home (1914). While the British edition gave
authorial credit to “Housewife” (Maud Lancaster), the contemporary US edition
was credited more directly to Maud Lancaster. Each version was ‘edited’ by
Lancaster’s husband, electrical engineer Edward W Lancaster. Both Decorative
Electricity and Electric cooking, heating, cleaning, etc are rare examples of publicly-credited
women’s creativity in engineering, even within the bounds of marriage. However,
the gender dynamics changed over the next few decades.

Changing dynamics

Some women who gained early access to the field of electrical engineering through
spousal connection were subsequently involved in the Women’s Engineering Soci-
ey. In 1889, Hertha Ayrton (born Phoebe Marks) became Britain’s first female mem-
er of the Institution of Electrical Engineers (IEE) in recognition of her original
research in improving the performance of the electric arc light. While not directly
involved in WES’s launch two decades later, she was one of its early members, and
correlatively Ayrton was a keen supporter of increased opportunities for women in
science and technology, helping to launch the International Federation of University

An event more directly involved in WES’s foundation were the women closely connected
to Charles Parson’s shipbuilding and steam turbine works on Tyneside. His spouse
was Lady Katharine Parsons, who was

heavily involved in engineering work and, according to an Honorary Fellow of the
North East Coast Institution of Engineers and Shipbuilders. Their daughter Rachel, a
mechanical engineer in her own right, was

the first President of WES in 1919–21, with
Lady Parsons succeeding her in 1922–25.

Another woman closely involved in the
founding of WES and from a working
class background was Caroline Haslett.

Having joined the Cochran Boiler Com-
pany in a clerical role before the outbreak
of hostilities in 1914, she received an
engineering training there during the First
World War. In succession of increasingly

responsible engineering roles, Haslett
became WES’s first secretary in 1919 and
later its President in 1941, her service thus
spanning both World Wars.

For her important work in supporting
the industry, and women’s participation
in it, Haslett was awarded a CBE in 1931,
and became a Dame Commander in 1947.
Haslett’s career epitomises the way that
the opportunities created by the First
World War broadened the opportunities
for women in engineering beyond that of
familial and spousal relationships, and
indeed beyond that of the middle and
upper classes.

Women’s participation

WES was founded in 1919, after male
engineers returned to their pre-war work and largely to protect women’s continued participation in engineering. Now less
privileged working-class women were entering the profession through changing
education and employment roles nurt-
tured in wartime.

With these too-little-heard stories of
women engineers from a century ago, we
can challenge the myth that Britain has no
substantive long-term tradition of women in
engineering. The UK currently has the
lowest participation levels of women in
engineering in Europe – with less than
10% of the UK’s professional membership being women. The WES centenary,
then, is an opportunity to change the
atmosphere in which 21st-century female
engineers still report that that they do not feel they have a well-established position in the profession. One major factor in
the ‘leaky pipeline’ of so many women
leaving the engineering profession after
qualification may thus be addressed with a better historical understanding of the way
that women have in fact been long-term
participants in British engineering.

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Further Reading

Bruton, Elizabeth, [article on Hertha
Ayrton], Science Museum Group Journal
issue 10 (forthcoming Autumn 2018) via
journal.science museum.ac.uk.

Gooday, Graeme, Domesticating Electric-
ity: Technology, Uncertainty, and Gender,

———, ‘The Authoritative Hertha Ayrton’,

Rosalind Messenger, The Doors of Op-
portunity, A Biography of Dame Caroline
Haslett (1967).

See also the WES’s own resources at
www.wes.org.uk/content/history.