



## ***e-DEFENCE ELECTRONICS NEWSLETTER***

The e-NEWSLETTER OF THE DEFENCE ELECTRONICS HISTORY SOCIETY  
No 85: August 2019 Part I

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<https://en.wikipedia.org/w/index.php?curid=50919855>

### **RECOGNITION ...**

The image above is deliberately uncaptioned - I have no doubt that most members of DEHS could recognise a photo of, say, **Robert Watson-Watt**, but how many more images of radar and electronics pioneers could most of us recognise? If the images were of pioneers not from our own countries, how few – if any? – could we identify? The point is relevant in the context of promoting the history of our subject – audiences are not, as a rule, as interested as are we in pictures of equipment; they are interested in the human story also. Of the questions posed by researchers to your Editor, a good half are questions about people, not about equipment; and many are about pictures of the person involved. In the case of our header photo, go to our article on page 7 and see if your identification was correct – but read the article too, to find the story of this lady whose much photographed husband considered her contribution to electronics far greater than his own.

This month, **eDEN 85** throws its net as wide as ever, covering Army, Navy, Air Force, and clandestine electronics. Part I has three foci, the first being international articles covering significant subjects which have not received the attention they deserve. May I draw your attention

first to the promised article by **Paul Evans** on the **Bathythermograph**. Paul, most modestly, tells us that he has no academic background; his article stands as an excellent example of what can be achieved simply by properly meticulous personal research, and your Editor can only wish that it inspires more colleagues with no formal historical training to write. From Australia, and their first-class magazine **Engineering Heritage Australia**, **Owen Peake** contributes a fascinating article on **The Black Box Flight Recorder**. Next, covering the little-known French clandestine wire-tapping activity 'Source K', **Emmanuel de Charborst** poses the question - **French Legend or British Denial?**

A second focus is provided by a series of contributions centred on the RAF bombing aid **OBOE**. While in hospital recently, your Editor looked back at early issues of DEHS's Journal **Transmission Lines**, and found much there, written by members now deceased, which merits bringing to our attention. As originally printed, the articles on OBOE extend over many issues, and so here they are, collated, - **A WAAF on Oboe** by **WAAF Pat Cassidy** of Ontario, Canada; **Oboe on The Continent** by **Clifford Sanctuary**; **Oboe on The Continent: The Rhine** by **C R Eastwood**; **The History of Oboe**, by the late **Owen Williams**, with a following letter to DEHS by **W G Allen**; finally, **Oboe Abroad: AMES 9432 – the First Oboe Radar Convoy** by **Maurice Brockman**. A rich and worthy series of sources.

The third focus consists of responses by members to requests for help in previous issues of **eDEN** – first, on **Chris Cooper's 'Mystery Valve'**, where **Heinz Trochelmann**, **Simon Watts** and **Phil Racher** provide their thoughts; then on **Mike Dean's** article on the **RAF intercept Receiver R1334**, aka 'The T.R.E. Receiver', where **Phil Racher** again gives a great start to tracing its builders, Central Equipment. **Andy Young**, through the Electronics Restoration Group, poses a new puzzle, the **Modulator 208**; we look at progress on tracing the **RAF Indicator 6** family, and finally, **Tony Waller**, **Mike Diprose** and I, with **Prof Simon Watts** seek help on a future project, to locate the details needed for the reconstruction of **ASV I** and **AI I**.

There is much else! We report the unveiling of the **memorial to V9977**, her scientists and crew, reported by **John Wilson**, Editor of the **Hereford Times**, who most commendably promoted the project and appealed for the necessary funds. **Owen Davie** writes on the **Wartime Double Beam Oscillograph**, and the late **Sir Edward Fennessy CBE** on **No 60 Group (Radar) Fighter Command**. The two main UK radar research sites are not forgotten - **Doug Myhill** tells his personal story of **Bawdsey & Beyond**, while in a different vein, in **Tailpiece**, **Frank Gee** breaks into verse to tell of a very visible mistake of the type we have all made, in the story of **Malvern's Perishing Gate**.

In Part II, we begin a two-part series which dips into selected chapters of the **British Army's Official History of Signals, 1939-45**. Were you aware, for example, that radio was almost unused in France pre-Dunkirk? **Peter Butcher** has a terrific paper on **Batteries** in our next **Transmission Lines** – what was the War Office's view on the issues around batteries in World War 2? What sort of strains did the equipping of the many 'private armies' cause – or indeed the various invasions of Madagascar, Africa, Sicily/ Italy and France? Should the War Office view of communications security should be read in parallel with Arthur Bauer's and my study of intercept in the Western Desert campaign? These and many more illuminating aspects of history are covered in detail – a fascinating account, though perhaps for reasons not intended by the Official Historian!

Once more as always, my grateful thanks to **Mike Dean** for his invaluable help, and suggestions for improvements, offers of articles and all general comments to me at [philjudkins@btinternet.com](mailto:philjudkins@btinternet.com) or [info@dehs.org.uk](mailto:info@dehs.org.uk).

Warmest regards all  
Phil

Dr. Phil Judkins, DEHS Chairman.

# DEHS CONFERENCE ON SECURITY & INTELLIGENCE

WEDNESDAY 27 NOVEMBER 2019

On July 10<sup>th</sup>, The Science Museum will be opening a new exhibition, '[Top Secret: from ciphers to cybersecurity](#)', Tickets are free but can be booked at <https://www.sciencemuseum.org.uk/see-and-do/top-secret> The exhibition has been curated by **Dr Elizabeth (Liz) Bruton, Curator of Technology and Engineering at the Science Museum, and DEHS committee member.** She is also a committee member of the IET History of Technology Network.

From the trenches of the First World War to the latest in cyber security, *Top Secret*, which coincides with the 100th anniversary of GCHQ, the UK's Intelligence, Security and Cyber agency, explores over a century's worth of communications intelligence through hand-written documents, declassified files and previously unseen artefacts from the Science Museum Group's and GCHQ's historic collections.

- Trace the evolution of the gadgets and devices used to conceal crucial messages and to decode the secrets of others.
- Hear from GCHQ staff doing top secret work to defend against terror attacks and serious crime and discover the challenges of maintaining digital security in the 21st century.
- Explore the story of Alan Turing and the team of Bletchley Park codebreakers who broke the Enigma code in 1941, uncover spy-craft from 1960s Cold War espionage and challenge your friends and family to become codebreakers in our interactive puzzle zone.

**To coincide with this exhibition, (DEHS) is organising 'Security & Intelligence'.**

The Science Museum has kindly allowed the DEHS to hold the conference in the Dana Centre, located in Queens Gate, which is only a short distance from the main museum building. The only cost will be for refreshments and will be approximately £25.

- The Keynote Address will be given by **Tony Comer, GCHQ's Departmental Historian.**
- **David Kenyon, the Bletchley Park historian,** will give a talk on the History of Bletchley Park.
- **Dr Helen Fry** will give the talk 'Listening-in: what was discovered from senior German POWs in WW2'.
- A senior representative from the National Cyber Security Centre who tell us of the present-day cyber threat.
- **Olga Topol, of the Pilsudski Institute in London,** will give a talk on the Enigma Double Machine.
- **Dr Edward Stansfield,** previously a senior manager at Racal Research, is an expert on speech coding and will outline the workings of vocoders
- DEHS President **Keith Thrower** will give a talk on the Fullerphone which was used to provide secure Morse communication across the battlefield in the two World Wars.

**The Newcomen Society** and the **IET History of Technology Network** are co-sponsors.

The conference will conclude at 4 p.m. and Liz will then take us through to the exhibition and give a conducted tour.

**Very few places are now left - please book TODAY to avoid disappointment.**

Email: [kthrower@waitrose.com](mailto:kthrower@waitrose.com)

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# HISTELCON 2019

18th-19th September 2019

Technology and Innovation Centre, Strathclyde University, Glasgow, Scotland

[www.histelcon2019.org](http://www.histelcon2019.org)

**HISTELCON** is an IEEE Region 8 conference covering topics in the area of Technology History, held about every two years. Information is available via the website: [www.histelcon2019.org](http://www.histelcon2019.org)

**The primary theme is 'historic computers'** including papers on those inventions and developments which have not already been the subject of extensive historical publications, and to include the contribution that special purpose processors have made to the development and use of advanced digital signal processing methods in many applications areas. Among the computer topics which may be included are, for examples, the history of the F100L and the Viper microprocessor, and the impact of digital signal processing microprocessors including the TMS 320 for the implementation of very sophisticated signal processing algorithms. Sessions to cover other aspects of technology history in the electrical, electronic and related fields will be provided for.

**Invited Keynote speakers** include **Nina Baker** (WES Historian) on the work of Dr. Winifred Hackett, **Peter Grant** (University of Edinburgh) on standardisation of electrical units, and **Simon Lavington** (computer historian, emeritus professor of University of Essex) on Ferranti Computes for UK defence and GCHQ uses).

On the **17th September** there will be an unveiling ceremony for an **IEEE History Milestone** at the Hunterian in Glasgow to recognise work done for **the standardisation of the unit of electrical resistance (the Ohm)**, to be followed by a free-to-attend technical seminar 1500-1700 on the nearby University of Glasgow campus (registration via Eventbrite).



**Georg Simon Ohm**, 16 March 1789 – 6 July 1854), German physicist and mathematician.

**Ohm's law**, that electric current is proportional to a potential difference, was in fact first discovered by Henry Cavendish but Cavendish did not publish his electrical discoveries in his lifetime; they did not become known until 1879, long after Ohm had independently made, and published, the discovery, and so the law bears Ohm's name.

**The moral - don't simply invent, publish!**