



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

The e-NEWSLETTER OF THE DEFENCE ELECTRONICS HISTORY SOCIETY  
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## **REMEMBRANCE**

Welcome to November 2018's eDEN!

Our November issue customarily is one for reflection on the sacrifices demanded in military action of all types, and more particularly upon those of all nations who have made that sacrifice while engaged in military electronics, with emphasis on those in roles or regions not normally in the public eye at times of commemoration, and on remembering that conflict is worldwide. Our header image is that of the Commonwealth War Graves memorial in Singapore, where there are recorded the names of more than 24,000 casualties of the Commonwealth land and air forces who have no known grave. Many also have no known date of death, only the date or period from when they were known to be missing or captured. Those in land forces died during the campaigns in Malaya and Indonesia or in subsequent captivity, many of them during the construction of the Burma-Thailand railway, or at sea while being transported into imprisonment elsewhere; the airmen, during flights over southern and eastern Asia and surrounding seas and oceans. We recorded last month four of those commemorated there – 159 Squadron's ELINT operators F/Sgts Bellingan, Woodage, Snelling and Woodbridge. On the night of 31st January / 1st February 1945, their Liberator BZ938 "W" (piloted by Squadron Leader J W Bradley) failed to return; a brief account in Air Commodore Henry

Probert's '*The Forgotten Air Force*' notes that "six survived the crash, all were tortured in the attempt to gain intelligence information, and the four NCOs among them were beheaded. One of them, Flight Sergeant J Woodbridge, was awarded the George Cross ...".

This issue of eDEN therefore looks at both people and technologies across the world in the conflicts of the 20<sup>th</sup> century. In terms of people, we have selected the stories of three who may stand for thousands of others – the last surviving Dutch agent, Bram Grisnigt; New Zealand radar officer Alan Roberts in the US landings at Peleliu; and Tom Hatcher, an RAF Oboe radar operator caught up in the Battle of the Bulge. Bram Grisnigt had an eventful war, and its recent commemoration was greatly facilitated by our member Robert Soek (a link is provided by member Bill Liles to one collection of agent radios, <https://www.itv.com/news/meridian/2018-10-19/daring-spies-who-broadcast-from-behind-enemy-lines/>); the story of New Zealand's radar in the US Pacific island-hopping campaign, and of 'Kiwi' Alan Roberts' wounding in an attempt to save a US colleague, is told by David Lomas in an article passed to DEHS by our member Graham Fraser; while Tom Hatcher's account of mobile Oboe convoy AMES 9442 forms a personal counterpoint to the wide-ranging paper on Radio Aids to Navigation delivered by Sir Edward ('Ned') Fennessy in his 1979 Presidential address to the RIN.

For technologies, we celebrate the two leading technologies of the two worldwide conflicts of the 20<sup>th</sup> century – the wireless valve, or vacuum tube, in the First World War, where we devote the bulk of our Part II to reprinting a little-known British War Office 'Treatise on Valves' written in late 1916 and published in 1917; and in the Second World War, the resonant cavity magnetron, where we reprint a Birmingham University paper by Professors Bill Burcham and Ramsey Shearman originally published as a pamphlet celebrating 50 years of the resonant cavity magnetron. We do not forget the manufacturers, and, with thanks to Jeremy Harmer's excellent Virtual Valve Museum, consider the intricate detail of EMI's manufacture of the CV 14x series of image converters, a technology which moves us on towards the present day.

Here we also contemplate the challenges of lost knowledge and of preservation. Clive Kidd at HMS Collingwood – himself endlessly helpful – asks our help in identifying a photograph of the 'Ardente Radar Group', and of possible naval hydrophones. Issues surrounding preservation are summarised in a 30-year old account of a conference attended by your Editor in Ironbridge – though the subject then was aircraft, we might apply its searching questions to radio and radar, and also ask just how far – if at all – we have come in 30 years; could the paper perhaps be reprinted today without any changes as a statement of the present?

Thales announcements then bring us up to the minute with a series of new products - Partner-C, and Altesse-H – and news of developments in IFF, Optronics, the Tiger helicopter and Crotale missile, while Part I's Tailpiece contemplates the very modern problem of a Royal Navy where ships cannot sail to sea due to lack of manpower. By contrast, Tailpiece II reflects the issue of disposal of the masses of surplus electronics after the Second World War, with a glimpse at a tiny part of a Government sale at Woolwich in 1957 showing radar vans being sold in lots of 3; at the same sale, motorcycles were going in lots of 6, 12 and 18, with Austin 3-tonners in lots of 3!

As always, many 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).

Phil

Dr. Phil Judkins, DEHS Chairman.

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## EFFECT OF WW2 BOMBING ON THE IONOSPHERE

On 13 December at 5pm, the Friends of the National Archives – an estimable body, well worth joining for the good work they do with the UK National Archives at Kew - are hosting an unusual [and highly DEHS-relevant] talk: *Thunder and Lightning: The Blitz on Berlin in World War II at Ground Zero and in the Ionosphere*, by Patrick Major, Professor of Modern History at the University of Reading. Drawing on the collections held at Kew, Prof. Major will discuss the Air Battle of Berlin and Operation *Thunderclap*, the plan to hit the government district of Berlin to precipitate a political collapse in the wake of D-Day. He will conclude by highlighting a collaborative research project examining the effect of bombing on the ionosphere; it is well worth reading the paper on this which can be found at <https://www.ann-geophys.net/36/1243/2018/angeo-36-1243-2018.pdf>.

From this, it can be seen that a series of studies of the effects of bombing on the ionosphere has been in progress for several years; the effects of the release of energy of lightning strikes on the ionosphere have been well studied, and the fact that one metric ton of TNT has an explosive energy of  $4 \times 10^9$  J, the same order of energy as a cloud to ground lightning strike, led to consideration of the effects of the release of energy caused by bombing and other explosive events such as that at the Flixborough chemical plant.

Please book to reserve a place: <https://www.eventbrite.co.uk/e/thefriends-end-of-year-event-tickets51646618426>.