



e-DEFENCE ELECTRONICS NEWSLETTER

The e-NEWSLETTER OF THE DEFENCE ELECTRONICS HISTORY SOCIETY
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MYSTERIES

DEHS members are always up for a mystery, and in this issue of eDEN we have quite a few – some with solutions, some with none, some with a lot more to be found! Above, from the 1930s, **Tony Waller's R1110** Fleet Air Arm homing receiver (a.k.a. 'how to find your aircraft carrier') – but how does it work? Below, one WW2 RAF 'velodyne', when surplus, usually discarded as a useless device – but again, how did it work and what was it used for?



eDEN #105, as always, spans Army, Navy, Air Force and clandestine applications of military electronics of all vintages, and we open Part 1 with a 'taster' of our next, May 1st, issue – articles by **Robert Soek** on his continuing F-111 cockpit restoration; **Simon Watts** on the fascinating variety of early ASV radar aerials, and some of their problems; **Mike Dean** on the development by Germany in 1944 of the railgun (the electrically-launched 3000mph projectile variety, not WW1's 'Big Bertha' and her WW2 offspring), and **Tony Waller and Mike Blom** on the US ARR homing receivers and YG transmitter. **David King and colleagues** contribute a full appreciation of **Michael Herman**, 'Doyen of Intelligence Studies' whose death we reported last month, and **Mike Dean**, in our series 'Generators for use in Aircraft', then unpacks the **Velodyne**, from its first article by **Freddy (FC) Williams and A M Uttley**; the use of velodyne Motor Generator Type 74 in **H2S's** Stabilised Scanners 63 and 71; and of velodyne Motor Generator Type 88 in **ASV Mk 15**, to its use by **TRE's Mathematics Group** in their Electro-Mechanical Differential Analyser. **Dr B Russell's** 1946 article on 'AI, ASV, IFF: Airborne Radar Aerials for Metric Wavelengths' then gives background to **Simon Watt's article next month**.

We have been discussing with the Vintage Military Amateur Radio Society (VMARS) the ability for each other to reprint (with, of course, the approval of authors) some of the articles in each other's publications, and this month, with thanks to **Bronek Wedzicha of VMARS** and the authors, the first of two is by **Roger Scott of the Solway Aviation Museum** on the **RAF Syko Machine**. This is followed, for 'Big Iron' fans, by **Drs D Taylor and CH Westcott's** 1946 article on **CHL and GCI: Broadside Aerials for 200-Mc/s Ground Radiolocation Systems**. From Australia, with thanks to **Margret Doring**, Editor of the excellent 'Engineering Heritage Australia' and **Brad Slater** of the Department of Fire and Emergency Services, Western Australia, **Perry Beor** tells us of **Perth's Secret WW2 RAAF Bunker** – Perth, Western Australia, not Perth, Scotland, of course!

Tony Waller then continues his popular series 'To Restore or Not to Restore' with a look at 'British and American Rotating Homing Beacon Receiving and Transmitting Equipment for Naval Aircraft' – primarily the **R1110 and the R1147A and B** – read to hear how Tony is unscrambling part of the mystery, and then next month how our US colleague **Mike Blom** provides the counterpart answer, the ship-borne transmitter beacon. We move on to more mystery - **Mike Dean** sets the background to the involvement of **John Cockcroft** and the Army's involvement in the Navy's little-known Infra-red '**Arran Project**', and **Tailpiece** rounds off with a look at a property you may – or may not! - wish to buy, the Rotor building at **Hope Cove**.

In Part II, in the second of our articles this month from the excellent **VMARS** publication '**Signal**', **Stuart Rayner** recounts his research into the **Southwold Y-Station**. This is a truly outstanding piece of work, originally published in Parts by VMARS; here we have brought it together as a single document, and it is most highly recommended to members as a readable and scholarly piece of work. Finally, as **Tailpiece** to Part 2, **Bryony Norburn** spotted on BBC Regional News a peaceful aspect of the **Y-Station at Chicksands**; its 'Secret Garden' now restored in an award-winning project to its former glory after years of neglect, a most worthwhile project.

PLEASE NOTE the appeal by **Andy Young** for information on the **RAF Indicators Type 116** on page 132, and **DON'T FORGET** to register for **Simon Watts' talk** on 21st April on 'Airborne Radar in the Battle of the Atlantic, 1940-1945'; **Simon is an excellent speaker and full details are on page 3**.

Particular thanks this month to **Mike Dean**. More next month, and meanwhile, suggestions for improvements, offers of articles and all general comments to me please at philjudkins@btinternet.com or info@dehs.org.uk.

Warmest regards all, and keep safe,
Phil
Phil Judkins, DEHS Chairman.

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SIMON WATTS LECTURE: ‘AIRBORNE RADAR IN THE BATTLE OF THE ATLANTIC, 1940-1945’

Following Simon Watts’ great article on the ‘FuG200 Hohentwiel Airborne Maritime Surveillance Radar’ in the February issue of the IEEE’s AESS (Aerospace and Electronic Systems Society) Magazine, Simon is delivering an evening webinar for IET Surrey on April 21st, 7.30 – 8.30pm UK time, taking as his topic ‘Airborne Radar in the Battle of the Atlantic, 1940-1945’. Air to Surface Vessel (ASV) radars first entered service with RAF Coastal Command early in 1940, in response to the rapidly emerging U-boat threat to Atlantic shipping. Over the next 5 years there was an extraordinary growth in this new technology, including the development of the magnetron, which was to play a key role in the defeat of the U-boat threat. Simon will describe the radar systems developed in the UK and USA for use in airborne maritime surveillance and used by RAF Coastal Command and the RN Fleet Air Arm. His talk will also describe the equivalent airborne systems developed for the German Luftwaffe, intended to assist the U-boats in finding the convoys. Simon is the acknowledged international expert on this topic and the registration page is

<https://events.theiet.org/events/airborne-radar-in-the-battle-of-the-atlantic-1940-1945/>