



e-DEFENCE ELECTRONICS NEWSLETTER

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DEMONSTRATING RADAR

Welcome to October 2018's eDEN!

Among those DEHS members who give lectures and displays of equipment to audiences up and down the country, a frequent topic of discussion is simply logistics – historic equipment, even airborne equipment, is extremely heavy and bulky by modern standards (and according to the backs and car springs of those who move it!). The power supplies it requires are frequently even more so, and the situation isn't helped by the fact that many meeting rooms are reached by flights of stairs.

A typically original and ingenious solution to the problem comes from our member Tatjana Joëlle van Vark, whom members will recall as the owner and re-creator of the only working Vulcan NBS radar and bombing system in the world. Tatjana has now completed her long project to create, from scratch, a fully working scaled version of the H2S Mk 2 navigation and bombing system, with 3 inch and one-inch display tubes taking the place of 6 inch and 3-inch versions, and miniature B7G valves the place of the octal and B9 versions, and with each unit replicating the look and functions of the original as can be seen in the image above. The project, which was briefly described when still incomplete in *eDEN* 50, page 74ff, is easily portable (as can be seen from the carrying handles) and operates for demonstrations from a simulator (seen right). The necessary steelwork and ironmongery have been created and machined by Tatjana herself, her design and workshop skills being known to members from her scratch-built 'advanced Enigma' shown at Arthur Bauer's 'Secret Communications' event (Mike Diprose's report in *eDEN* 54, page 5ff). We hope to carry a full article in a future eDEN, and in the meantime, Tatjana has made more details and a YouTube video available at http://www.tatjavanvark.nl/tvv4/H2S_Youtube.html *Chapeau bas*, Tatjana!

As usual, this issue of eDEN ranges widely over twentieth century conflicts, from the late Dr Ernest Putley's very usefully-referenced survey 'Wireless in the First World War' to Thales' announcement of its Kinglip Sonar in use in Indonesia and Brazil. Equally as usual, we include some perhaps less-expected subjects, from the early studies of radar echoes from birds, in research by Mike Dean and an original Army Operational Research Group report by D Lack, to the inclusion in a 60 Group Newsletter of a variant doggerel on the lyrics to 'Olga Pullovski, the beautiful spy' explained in the Tailpiece to Part I.

Following Mike Diprose's major article on last month's Transmission Lines, which drew much praise and comment, we look further at the Infra-Red Image-Converter Tube in an article by T H Pratt of ARL Teddington from the Journal of Scientific Instruments (with thanks to John Kaesehagen); Mike also provides us with the answer to his 'What and Where?' competition of last month. We follow the steps in tracing the use of a decimetric Admiralty P24 Receiver in the collection of Andy Young, with thanks to Clive Kidd at HMS Collingwood and his colleague Lt Cdr. Brian Witts MBE RN at the Whale Island RN Gunnery Museum.

Two lectures from our first CHiDE Conference in 1995, long out of print, are republished here – the GPO Engineering Department's contribution to RAF Radar development, examined by R G Martin, and the position of TRE Scientists: Between Government and Industry, an early study by Drs Jon Agar and Jeff Hughes who both achieved significant academic distinction in subsequent years, but alas, without having published their promised work on TRE. We then follow last month's study of the Chain Home hardware with an account of the trials and tribulations of the 1939 commissioning process at one site, Danby Beacon in North Yorkshire compiled by Ray Barker for a 1990s Reunion with data from Mike Dean and Danby's archivist, ex-operator Freddie Smith. Our final article is included to remind us that however good (or imperfect) the equipment, it is only as effective as the skills, training and care of the operator, and to that end we print the 1944 RAF Notes on Air Operating for Signals Aircrew (Air Ministry Pamphlet 180) with its original cartoons – there are interesting pieces of counsel and instruction to the aircrew wireless operator which are well worth study.

The main single theme of this month's eDEN, however, is that of ELINT, which we consider from two perspectives – first, that of operational 'Ferrets', with three papers by Mike Dean continuing his series begun last month. These consider, in turn, the USAAF search for Japanese Radar, reprinted from their magazine RADAR: the RAF Ferret Operations in South-East Asia (the operators in one operation paying the ultimate price in the most brutal of circumstances); and the Halifax aircraft Ferret Installations of 1341 Flight for comparison with USAAF equipment schedules. Part II of this eDEN is devoted to a subject rarely touched upon in published work, the details and circuitry of the three main wartime RAF VHF/UHF/SHF intercept receivers, the R1294 (otherwise known as the AB2); the R1359 (also known as the ABR 3) and the R1619, one of which is in the possession of our member Chris Cooper whose photographs and earlier research we gratefully acknowledge. Tailpiece II features perhaps the equipment's best-known use, the operation by 1474 Flight on 3 December, 1942, the gallantry of the crew being well conveyed in the account of R V Jones.

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 or info@dehs.org.uk.

Phil

Dr. Phil Judkins, DEHS Chairman.

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