Computing: The 1940s and 1950s

Robin Wilson and
Martin Campbell-Kelly

The modern computer age began in the Second World War, with Colossus in England, used for deciphering German military codes, and ENIAC in the United States.

In 1932, led by Marian Rejewski, **Polish codebreakers** had managed to break the codes used by the Germans in their Enigma machines.

With the outbreak of the Second World War, the Enigma codes became much more complex, and many lives were

lost through the inability to break them. It was some time before a team of codebreakers at **Bletchley Park**, in England, led by **Alan Turing**, managed to do so with the aid of the **Bombe** machine.

The more secure Lorenz cipher machine was used by Hitler and other German war leaders to send their messages. To break this code, the first **Colossus** computer was developed in great secrecy at Bletchley Park. The achievements of Turing and his fellow codebreakers may have helped to shorten the war by two years.

Meanwhile, in the United States, **John Mauchly** and **J. Eckert**, professors at the Moore School of Electrical Engineering at the University of Pennsylvania, designed the first general-purpose electronic digital computer, the **ENIAC** (Electronic Numerical Integrator And Computer). The ENIAC was large and cumbersome: it weighed 30 tons; contained 17,000 vacuum tubes, 70,000 resistors, 10,000 capacitors, 1500 relays, and 6000 switches; and consumed 150 kW of electric power. The Hungarian-born mathematician **John von Neumann** worked with the ENIAC team to design its successor, the EDVAC, on which almost all subsequent computers have been based.

Polish codebreakers

Bletchley Park

Alan Turing

Turing's Bombe

Colossus

Mauchly and Eckert

ENIAC

John von Neumann

➤ Column editor's address: **Robin Wilson**, Mathematical Institute, Andrew Wiles Building, University of Oxford, UK
e-mail: rj.wilson@open.ac.uk

Martin Campbell-Kelly
Department of Computer Science
University of Warwick
Coventry CV4 7AL, UK
e-mail: m.campbellkelly@gmail.com

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