

## Gordon Welchman

1906 – 1985

*A brief biography, based on that formerly displayed in the 'Hall of Fame' in Bletchley Park mansion.*

**Within a few weeks of the outbreak of World War 2, Gordon Welchman had reinvented a way of breaking Enigma, which he was then told Bletchley Park was already working on, having learnt about it from the Poles. Welchman then insisted that urgent action be taken to prepare for mass production as soon messages would be being read in large numbers. Edward Travis took notice, and successfully argued the case in Whitehall. Gordon was then appointed to lead the Enigma decryption team that was set up in Hut 6, following their success in reading Enigma in January 1940. He led his ever increasing team with great success. By 1943, every day it was breaking 20 or more keys and producing thousands of decrypts. In September 1943 he was given responsibility for mechanisation work across Bletchley Park.**

William Gordon Welchman was born on 15 June 1906 near Bristol. He was educated at Marlborough and Trinity College, Cambridge, achieving a double first in mathematics. He taught at Cheltenham for a year, before returning to Cambridge as a Fellow of Sidney Sussex College in 1929. He became an expert in geometrical mathematics, and Junior Dean of his college.

He was recruited to attend the GCCS short-course in cryptology in 1938. Welchman joined Bletchley Park on Monday 4 September 1939. He was assigned to work in the Research Section who was working to break the German Enigma machine codes under the Dilly Knox. Welchman was sent to Elmers School House to study 'traffic analysis', soon realising that it should be possible to break Enigma using the repeated encrypted indicator letters sent by the Germans to tell their Enigma operators how to set up their machines. But when he proposed this to Dilly Knox, he was told that they were already working to prepare the perforated-sheets to make use of this method, as they had learnt about it from the Poles.

Welchman successfully lobbied Edward Travis about the need to prepare for the flood of decrypts that they would soon be generating. Welchman was proposing a revolution in codebreaking, akin to the mass-production revolution. Soon after the first break at Bletchley Park was achieved on about the 20 January 1940, Hut 6 was set up to handle the decryption of German Army & Luftwaffe Enigma. It soon became apparent that Welchman was the natural leader of the Hut. He continued to lead the hut throughout all the months of the build-up, as Hut 6 expanded from a couple of dozen staff into a team of several hundred. By the time he was promoted away to look after all the mechanisation work of Bletchley Park, each day his hut was attacking 20 or more Enigma keys and producing several thousand decrypts a day. Initially they used the Zygalski sheet method, then the 'cillies', and after August 1940 cribs and the Bombes, for which Welchman had proposed a vital modification. The decrypts they produced were a major part of the Bletchley Park success.

Welchman had proved himself a man of vision, an outstandingly capable organiser and manager, as well as a creative ideas man. He seems to have got on well with almost everyone at Bletchley Park. After the war, Welchman went to work in the USA on defence data handling projects at the fore-front of the digital revolution. In 1982 he published his *The Hut 6 Story* to official disapproval but much public acclaim. He died on 8 October 1985 in Massachusetts, USA. Sir Stuart Milner-Barry, his deputy & successor in Hut 6, has said 'if Gordon Welchman had not been there, I doubt if Ultra would have played the part it undoubtedly did in shortening the war'.

Soon after the end of the war he took Hugh Alexander's old post as Director of Research for the John Lewis partnership, but moved to the USA in 1948 to be at the heart of the fast developing digital revolution. He took a post at Massachusetts Institute of Technology, lecturing on the first computer course there, with spells at Remington Rand and Ferranti before coming back to the MIT non-profit spin off, the Mitre Corporation, who were working on a large scale air defence data handling project. Welchman acted as a sort of Chief Scientist, working for Mitre from 1962 until he formally retired in 1971, though he continued as a consultant to them until 1982. It was in that year that his famous book '*The Hut 6 Story*' was published. Acting on the assumption that the publication of Freddie Winterbotham's '*The Ultra Secret*' had removed the obligation to secrecy that he had maintained for 37 years, he was surprised by the official disapproval that greeted the book's publication, which included the removal of his security clearance.