Bletchley Park Coursework

Why was Bletchley Park able to break the German Enigma codes?

The Enigma code was very hard to break because of the huge number of combinations possible, making it impossible to crack in the traditional way, settings changed every 24 hours so Enigma constantly needed to be broken.

The Poles played a large part in helping to break Enigma, Rejewski a Polish mathematician handed BP a replica machine in 1939. This gave BP a head start in breaking Enigma.

Germans believed Enigma was unbreakable; this led to operators taking shortcuts. Rejewski, a Polish Mathematician, discovered that many German operators chose Enigma keys that were easy to remember, "Cillies", such as a name, which largely reduced numbers of possibilities. Unknowingly Germans provided BP with clues by starting many messages with "To all units." Many messages did not exceed 26 letters, meaning the middle Enigma wheel did not turn, ruling out many possibilities. Also one letter could never represent itself in Enigma; this was precious information when liked with other facts and compared with other texts. Codes were sometimes sent in two forms; Enigma and a simpler code. Most German operators could not be bothered to follow codebook rules, sending repeated messages so other operators could quickly set their machine. All the clues above made code breaking a lot easier for BP and led to many breakthroughs.

John Herivel put himself into the situation of the German Enigma operators. This was known as "The Herivel Tip" as he exploited German mistakes. Initially this idea did not work as not enough messages were received but once messages increased the method became successful. "The Herivel Tip" allowed BP a way to quickly find daily settings and break the codes.

At first BP activities lacked resources. However, Welchman integrated BP into an effective interception organisation and increased all areas of BP activities with the use of Churchill's extra resources. This organised BP's work, allowing effective decoding and use of information. ULTRA was added to all messages leaving BP this made it impossible for German agents to discover BP's purpose. ULTRA meant no decrypts could be used to take Military action unless they could have come from another source.

Alan Turing was responsible for the first breakthrough while consulting the Poles. After returning with correct information he broke the German army cipher "Green". This came as a great morale booster for everyone at BP. The Turing "bombe" was an electrical machine which speeded the process of decoding messages, allowed BP to break messages faster.

When a four-wheel version of Enigma, “Shark”, came into use by the U-boats BP lost contact with them. Fortunately two codebooks were recovered from the U-559. BP also discovered that the three wheel Enigma was still in use. This allowed BP to provide vast information about the enemy from 1943 onwards.

BP’s secrecy made sure the Germans never discovered that Enigma was being broken. This led to them carrying on making mistakes and helping BP. Communication with the Poles was also important as their information helped come about the first breakthrough. Overall I think the most important reason for the enigma code being broken was German mistakes because without them none of the breakthroughs would ever have occurred and BP may never have broken Enigma.