

Register for the competition on the form at <http://www.cipher.maths.soton.ac.uk/registration>

National Cipher Challenge 2009, part 8A

July 28th 1837

My dear Mr. Babbage,

I was most shocked to hear of the death of our dear friend Mr. Cocking and assumed immediately that all had gone awry. It was with the utmost relief that I discovered of his ingenious ruse to escape the attention of the French assassins by faking his death. It was a most gruesome end, and I shudder to think of those unfortunates who witnessed it, believing it to be true. Where he obtained a corpse suitable for the deception I do not know, and do not care to ask. I am even more puzzled at how the body may have been concealed in the basket, but this is of no account. I am truly happy to have received news that he is well and I wish him continued good health.

Of course the first major challenge for the Turning Engine, now it has been safely returned to us, will be the decryption of the enclosed cyphertext discovered in the house believed to have been used by Agent Monhier as a safe refuge. The broken wheels discovered in another room lead me to believe that this, Monhier's final message, has been encrypted using the Jefferson cypher alluded to in his previous letter. It appears from the fragments that the device used twenty six wheels, each with a random alphabet of the standard 26 characters, but I recall that Monsieur Monhier asserted that each wheel was identical to another. I have managed to reconstruct the first 13 of the wheels in their entirety from the fragments and the letters on these discs read as follows:

Wheel one: H I M Q E B N Y U L W T A S C V O J P R X Z F G D K

Wheel two: B L A X C V S H I R W P F Y Q O D E T M N J K Z G U

Wheel three: E A D Z M I J Y K S R X V Q T L P U C H N W G B O F

Wheel four: L H R T S O U A Z K X E D I B W Y V P F N G M J C Q

Wheel five: A O E B M U N W J Y C G X Q Z V H L S T K R D P F I

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Wheel six: H B T W O S I V Q R D P Y G N X U Z L A F C K E J M
Wheel seven: O B Q Z G R L K X A T P N S Y E W V D F I J U M C H
Wheel eight: I M R W V U L B D K O Q H A E T P G Z S Y F C N J X
Wheel nine: R U H C E S J A X M N Z O G V B Q T K D W I L P Y F
Wheel ten: S A Z O R C I E T F Y K X M D P G W Q V U H L B N J
Wheel eleven: Q U A I H J M C E Z T K Y F V L P B X O S G R W N D
Wheel twelve: M U C A T P J Z O X E W I F Q H B S R G L Y D K N V
Wheel thirteen: Q W L C K U E T D I V P H F A M Z O Y B R S G X N J

This gives me considerable hope that we might crack Monsieur Monhier's Jefferson cypher with the aid of a little luck, perhaps a crib, and the power of the new computing engines available to us.

I must say that the life I have led since meeting you, my dear Prof. Babbage, has been much more exciting than I could possibly have imagined. The gaming tables seem tame by comparison. Our work on the Turning Engine, on its successor, and on the Analytic Engine, has wrought a revolution in my life and I believe will do the same for many others. When time permits I will return to the question of my father's enigma, but the pressing needs of the nation, and of mathematics call me away once more and I am delighted to serve them both in your company.

With much affection,

Ada Lovelace

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National Cipher Challenge 2009, part 8B

July 25th 1837

Mes Freres, the treacherous English have double-crossed us. It is not yet clear what role Lord Pennylaine has played in the destruction of our network in London, but its downfall was engineered with his witting or, as is more likely, his witless, support. Cocking appears to have been a double agent all along, and my spies in the London Constabulary tell me that it was he who warned them of the presence of a large number of foreign agents at the location of the auction for the Turning machine.

While both the machine itself and the drawings for it were lost to us during the raid on the auction I believe that I learned enough of its construction to allow me to reconstruct at least some part of the design with the help of French engineers.

Cocking was of no further use to us and I instructed agents to eliminate him, however he saved them the effort and expense of a French bullet: before they could reach him he died in a fantastical public experiment involving a balloon and a new design for a parachute. He will no longer trouble us.

Babbage and Lovelace are still working together on their computing engines, and an agent at Cambridge informs me that they have plans for a new and significantly more secure version of the Turning Machine based on a somewhat enigmatic encryption method. We will of course continue to monitor their progress, to impede it as necessary and to attempt to acquire it at the appropriate juncture. I believe they may be working on this device with Prof. Wheatstone and we will endeavour to intercept their correspondence.

Lovelace and her colleagues may have won this battle to secure the Turning Machine, but they have not yet won the war ... Monhier.