Download the competition poster

Welcome to the fifth National Cipher Challenge. The competition will run from October 5th 2006 to January 10th 2007. Over the next few months you will be joining Nelson in the fight against Napoleon as he tries to stop the French from obtaining a secret Chinese weapon of war. It will be your job to help the British Fleet in its efforts to decipher French messages and to discover the secret of the Chinese Enigma. Fortunately some of your work has been done for you by the infamous playwright, spy and forger, Christopher Marlowe. It seems that he knew something of this threat 200 years before the French and with luck his diary and letters from his friend Walsingham will contain clues. Unfortunately Walsingham knew the value of secrecy and these documents too are encrypted. You will need to break their codes and ciphers to crack the secret.

Challenges will be set on this web-site in the Black Chamber, and will come in two parts. Part A will consist of notes from the British fleet and intercepts from the French naval communications. As they come from military organisations in a state of war you can expect these messages to be formally (though perhaps surprisingly not heavily) encrypted; nonetheless in the latter stages of the competition you will find them harder to crack. Part B consists of pages from Marlowe's diary and letters from his friend Thomas Walsingham. Because of the age of these documents you will find them harder to decrypt. You might be tripped up by the fact that in Elizabethan times words were not so much spelt as assembled; there was no standard spelling, and words may be spelt in a different way at different points even in the same letter! This can make frequency analysis tricky and also prevent you from guessing the next letter in a word. At the early stages the ciphers used will be fairly simple so as long as you are careful and work out which cipher has been used you should be fine.

If you get stuck on a Challenge don't give up, sometimes a good night's rest is all you need. Other times you need more practical help and you can turn to the web-site for clues. You might find them posted as comments, on the bulletin board, though we ask you not to post hints of your own without checking them with us first as this will spoil the Challenge for others. Anyone posting solutions or links to solutions will be barred from the site and disqualified from the competition. You will also find clues in the Challenges themselves. So teh solution to any previous Challenge may give hints about how the crrent one is encrypted. Also the part A message might give clues for part B at each stage so it is worth deciphering teh part A challenge even if your main interest is the part B competition.

The Challenges will be published at 3.15pm on a Thursday, according to the schedule below. You can submit your solution any time after the challenge has been published and before the deadline at one minute to midnight the day before the next Challenge is published. Solutions to each Challenge will be published after the deadline, so if you can't crack a particular Challenge don't give up. If you submit a solution with a mistake in it you will receive feedback from us by email telling you where you started to go wrong and you can then submit again. Feedback will be generated and emailed overnight each day. For each Challenge you will receive a score based on your speed and accuracy, and we will use these scores to compile an Honours Board for each Challenge part A and for each part B. These lists will be published so you can see how you are getting on. The part B Honours Lists will be compiled into an overall Championship Leader Board which will be used to determine the winners of the competition. Entries for each challenge, which may be from individuals or from teams, should be submitted using the competition web-form. Be careful to follow the instructions on the form. Failure to adhere to all the instructions may result in the entry being deemed invalid. The detailed rules are given below.

Schedule

Cipher	Publication Date	Deadline 23.59 on
1	5 October	11 October
2	12 October	18 October
3	19 October	1 November
4	2 November	8 November
5	9 November	15 November
6	16 November	29 November
7	30 November	13 December
8	14 December	10 January

Rules

1. The competition is only open to persons who are in full time school-level education in the United Kingdom*.
2. The competition is only open to persons aged 18 or under on 31 August 2007.
3. Entries may be received from individuals or from teams. The teams may be of any size, but we can only list details of four members of the team whose names may be entered on the registration form. Instead you could list your class name or the name of the school or group to which you belong.
4. Teams must nominate a captain who we may contact via email.
5. The schedule of messages to be deciphered is given here, the list of prizes is given below.
6. Each challenge consists of two parts, part A and part B. You may submit solutions to either or both parts of the current challenge on the entry form.
7. For each of the challenges 1 to 8 there will be a range of prizes awarded to competitors chosen at random from those who submit a correct entry to part A.

Scoring

Each submission you make for Challenge part A or for part B is marked by computer in the following way. Your solution is stripped of spaces, punctuation and numerals, all characters are converted to upper case and the resulting string is compared with our master solution which has been treated in the same way. The comparison yields a "similarity score" out of 100. For the part A Challenge your position on the leader board is based entirely on the highest accuracy mark you get for your submissions to that round, so if you make a mistake you can dramatically improve your ranking by trying again. For the part B Challenges you will also be given a mark for the speed with which you submitted your most accurate solution (bearing in mind that we are taking the last of any identical submissions you make!)

In week one the mark for speed will be out of five, with a mark of 5 for a submission on October 5th or 6th , 4 for a submission on October 7th and so on with a mark of 1 for submitting on October 10th or 11th. Your overall mark in Challenge 1B will therefore look like (x%, y) with a maximum of (100, 5), and we will compare these using the dictionary order so that a score of (100, 5) beats everything, (70, 5) is beaten by (80, 1) and (70,5) beats (70, 4). Other part B challenges will be marked in a similar way, though the number of marks available for speed increases as the Challenge gets harder and we will distinguish by smaller time periods, part day, hours or minutes rather than by the day. We will combine your marks in the part B challenges to produce the final rankings. The outcome is that being delayed by even several hours in the early stages will not affect your position in the final league table. This scoring system is not open to discussion!

Note that we will disqualify anyone who crashes the server by hammering at the submit button like a woodpecker at a tree so go easy on it! Given our scoring scheme you don't need to do this, and you are more likely to get a response from the server if you don't wear it out. For the initial challenges points will be awarded for both parts of the Challenge according to the schedule as follows. Note that the schedule will vary for later stages of the Challenge and such changes will be notified in despatches.

Prizes

For each stage of the Challenge we will award eight cash prizes of £25 each to teams selected at random from those submitting a completely correct entry to the part A Challenge at that stage. The overall winner of the championship will be the team or individual with the highest overall score in the part B challenges throughout the competition. The two top prizes are an IBM laptop provided by our sponsors IBM and a cheque for 1,000 pounds provided by GCHQ. The runners up prize is a cheque for 700 pounds provided by Trinity College Cambridge. The organisers will decide how to distribute these prizes and their decision is final.

8. For each of the challenges 1 to 8 for which you submit an entry for part B you will be awarded a score, based on the accuracy of your best submission for that challenge and the order in which we receive the submissions. Your score will be used to determine the winner of the Championship Prize, who will be chosen from among those achieving the highest total scores.
9. A solution will only be deemed to be correct if, disregarding the punctuation [and spacing], the deciphered plaintext (only involving the Roman characters A to Z [UPPER or lower case is fine]) is letter perfect as compared to our master solution.
10. A submission will only be deemed to be valid if it is submitted on the entry form and all the instructions on the entry form are adhered to.
11. The Challenge Committee may publish clues on the competition web-site (in despatches) if it considers it appropriate to do so.
12. If a correct solution of a challenge is not received before the deadline given on the schedule the Challenge Committee will have the discretion to not award the prize or award some or all of it to the entrant or entrants whom it judges to represent the best solution or solutions.
13. The competition will be judged by the Challenge Committee, whose decision will be final in all matters regarding the competition including the award of prizes.
14. In order to qualify for any of the prizes all entrants, whether solo or part of a team agree to their names being used in publicity associated with the competition including publication on the competition web-site.
15. In submitting an entry solo entrants vouch that it is solely their own work and teams warrant that it is solely their own collective work.
16. Entrants who do not abide by the rules will be disqualified from the competition and will not qualify for any of the prizes.
17. In submitting an entry to the competition, all entrants, be they individuals or members of a team agree to be bound by all the rules of the competition.
18. Winners and their schools will be notified as soon as possible after the solution deadline for each message.
19. The organisers reserve the right to change any aspect of the competition at short notice and to split prizes where it is deemed appropriate. Such changes will be announced on the competition web-site as soon as practical.
20. Rapid fire multiple submissions put an unreasonable load on the servers and make it difficult for others to submit. Anyone who makes an unreasonable number of submissions will be open to disqualification. In the first instance this will mean that anyone who submits more than 20 times in 10 minutes.
21. Anyone posting solutions on this web-site or in any other public forum before the deadline will be disqualified and barred from the forums. Please do not post hints on the site without checking with us first as this may spoil the competition for others.

* Home-schoolers also qualify as do those attending schools in the Channel Islands and the Isle of Man.