

Sherlock Holmes and the Curious Case of the Chess Bomb

Sherlock was on his way to the annual retrograde chess convention in Tennessee. On the way his car broke down and he stopped by the nearest house to ask to use their phone.

The lady of the house, Maybel, recognized him as the famous retrograde chess detective Sherlock Holmes, and shouted, "Thank God you're here! there's been an emergency! We were playing a game of chess, and little did we know, each time a piece was taken, Moriarty grabbed the missing piece and used it to arm this pipe bomb! He left a note saying that the only way to defuse the bomb was to take the pieces out in the same order that they were put in! But alas we cannot remember the order!"

"Of course!" replied Sherlock, "Moriarty must have put a time-release sugar packet in my gas tank, knowing that I would be driving by this house at this very minute!"

"But how does one arm a pipe bomb with chess pieces?" asked Watson curiously.

"Always missing the simplest of clues my dear Watson," laughed Sherlock. "Do you not see that these chess pieces are metal? And have you never seen a movie where they have to cut the wires in the right order or the bomb will explode? This is exactly like that, but with chess pieces."

"I might remind you that time is ticking!" said Maybel frantically, "Can you help us disarm the bomb or not?"

Sherlock studied the board intently for a minute, but said it was impossible... Unless Maybel could remember any more information about the game...

"Alas Moriarty knows that I have a horrible memory," replied Maybel. "Oh wait, I remember something! Moriarty left these clues for you!"

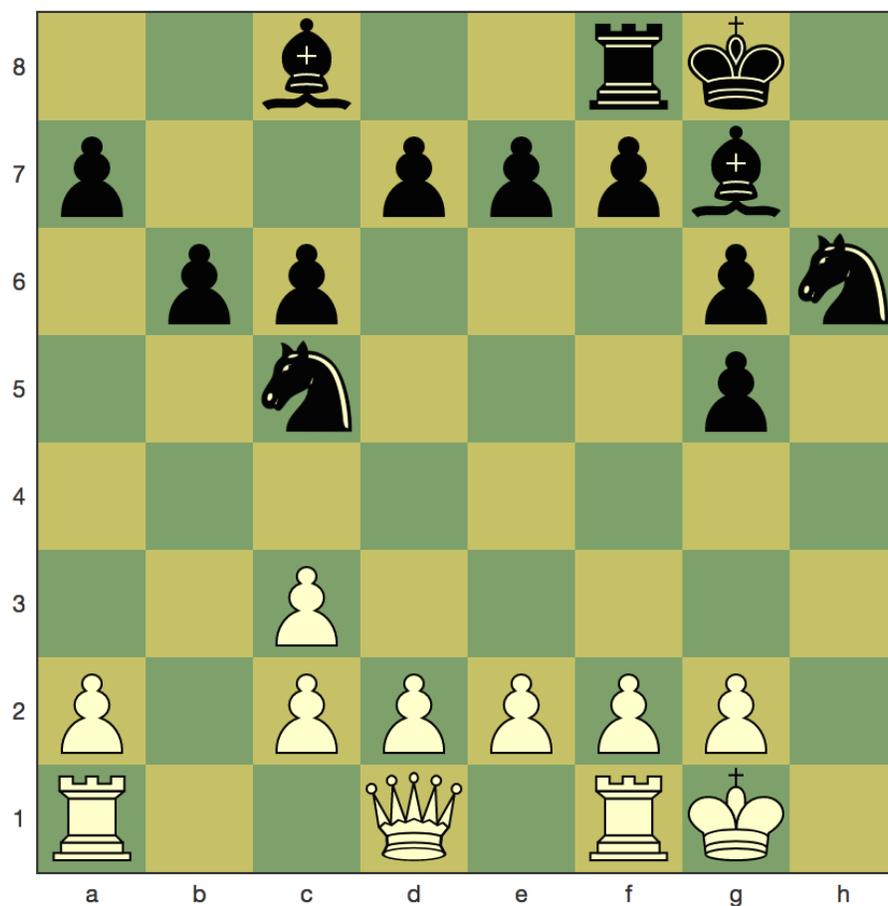
1. Each king has castled and has not moved since.
2. The bishop on c8 has never left its home square.
3. The black queen captured twice, but neither black knight captured at all."

“You could have given me these clues before I wasted all this precious time!” snapped Sherlock. “Of course it would not be possible to distinguish between the two knights as they could replace each other at the beginning. But of course Moriarty has clearly made the knights in the bomb interchangeable... This one is a doozie, I may need a pen and paper for this one...”

Maybel and her husband watched intently, and increasingly nervously, as Sherlock studied the board and scribbled notes and chess symbols. With only one minute remaining on the timer, Sherlock shouted, “Eureka! I have found the solution.”

Sherlock ran over to the bomb, and removed the pieces in exactly the order they were taken. How did he figure it out?

The board:



Solution:

White Knight-White Pawn-Black Rook-White (Dark-Squared) Bishop-
White (Light-Squared) Bishop-Black Queen-White Knight

Proof:

1. The black queen captured the white bishop on f1.

The white bishop on f1 never left its home square, but must have been captured before white castled. Given the white pawns on e2, f2 and g2, The only pieces that could have captured the bishop are the black knights and queen. The black knights never captured a piece, and thus it was the black queen.

2. The black queen was captured by a white knight on f1.

Once the queen captured the bishop on f1, it was checking the king. The king and king's rook cannot have moved since they castled later. The black queen must have captured from g1, thus it could not have been recaptured by the white queen.

3. The rook was captured on c3.

The pawn from b2 must have captured on c3. Since the black queen was captured on f1, and the only other missing black piece was the rook.

4. Black's b- and c-pawns must have cross captured, and the c-pawn must have captured first to let the rook out.

This cross-capture is the only way for the black rook from a8 to escape. Further, if the c-pawn captured on b7 before the b-pawn captured on c7, the rook cannot escape.

5. The missing white pawn cannot have promoted. It made no takes and was captured on the h-file.

The only missing black pieces were already shown not to be captured by the white h-pawn. Therefore the white h-pawn made no captures. The white h-pawn could not have promoted before black castled because the rook would have blocked the h-file. The white h-pawn could not have promoted after black castled, because it would have had to cross the h7 square, forcing the black king to move.

6. One of the white knights was captured on c6.

The white dark-squared bishop could not get out before the black rook was captured on c3. The white light-squared bishop never left f1 and the white pawn never promoted or left the h-file.

7. The white dark-squared bishop was captured on b6.

The black queen could not escape prior to the capture on b6 since the black bishop never left c8.

The white light-squared bishop never left f1, and the missing white pawn was captured on the h-file. One of the white knights was captured on c6 prior to this capture on b6 (points 4 and 6). The other white knight could not have been captured before the queen because the queen was captured on f1 by a white knight (point 2).

8. The queen took the h-pawn right before taking the bishop on f1.

The queen took at least two pieces. The white dark-squared bishop and one of the white knights were captured on b6 and c6 respectively. The other white knight took the black queen on f1. Thus the two pieces taken by the queen were the h-pawn and the white light-squared bishop on f1.

9. The white knight was captured last by one of the black pawns on g6 or g7.

The white knight is the final missing piece. Thus it was captured last and must be responsible for the double black pawns on the g-file.

In summary, the order was:

- One of the white knights was captured on c6.
- This capture allowed the black rook to escape and get captured on c3.
- This capture allowed the white dark-squared bishop to escape and get captured on b6.
- This capture allowed the black queen to escape, where it must have captured the missing white pawn.
- The black queen then captured the white light-squared bishop on f1.
- The white knight recaptured the black queen on f1 in order to allow white to castle later in the game.
- Finally, the white knight was captured on either g5 or g6 by a black pawn.