



THE PUZZLING SIDE OF CHESS

Jeff Coakley

ILLEGAL POSITIONS: RETURN of the GOOF

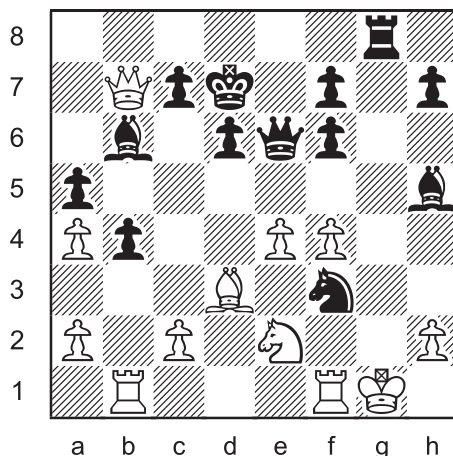
number 19

December 15, 2012

The positions in this column are intentionally illegal. Your task is to figure out why.

A chess position is *legal* if it can be reached in an actual game, starting from the initial array and following the rules of normal play. When deciding legality, strategic considerations are irrelevant. The moves leading to a legal position may be totally absurd.

Who's the Goof? 07

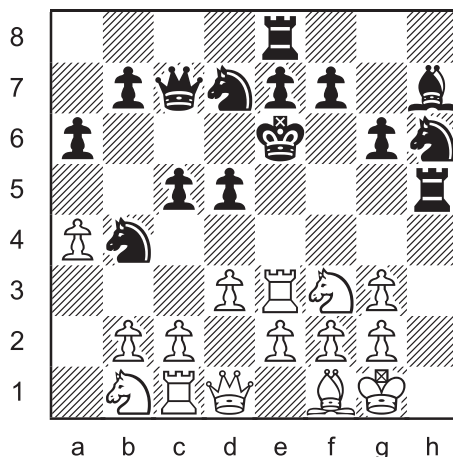


Why is this position illegal?



Who's the Goof? appears every three months on *The Puzzling Side of Chess*. For problems 1-6, see column 12 in the archives.

Who's the Goof? 08



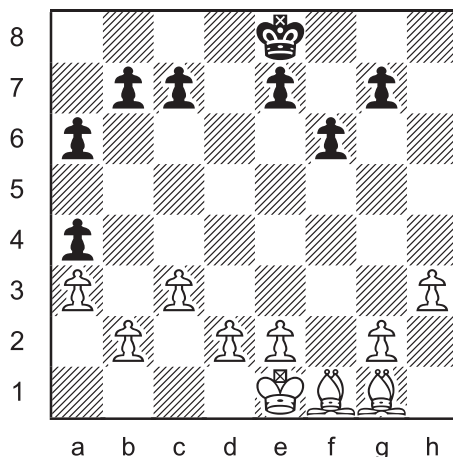
Why is this position illegal?

Who's the Goof? is a kind of negative *proof game*. The goal is to prove that a position could **not** happen in a real game. Solving the puzzle usually involves “backwards thinking” (retrograde analysis).

To show that a goof exists, it is sufficient to demonstrate a logical contradiction in the given position.

The next puzzle, by German composer Josef Haas (1922-2003), returns to themes from the last column. It was first published in the excellent *Introduction to Retrograde Analysis* by Karl Fabel in 1971.

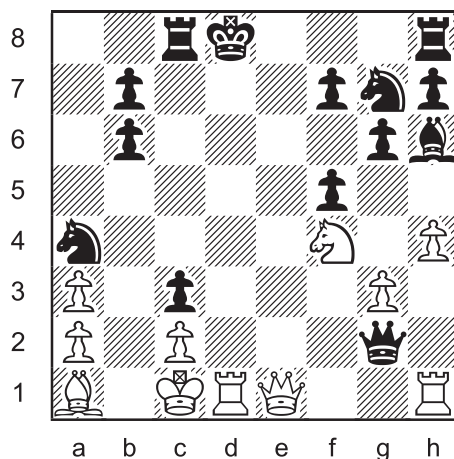
Who's the Goof? 09



Why is this position illegal?

There is no shortage of goofs in the world. Here's one more that may challenge you.

Who's the Goof? 10



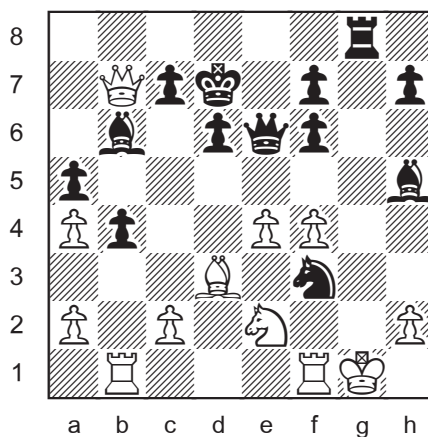
Why is this position illegal?

SOLUTIONS

Puzzles 7, 8, 10 by J. Coakley. Number 7 is from *Winning Chess Puzzles For Kids Volume 2* (2010). 8 and 10 are *ChessCafe.com* originals (2012).

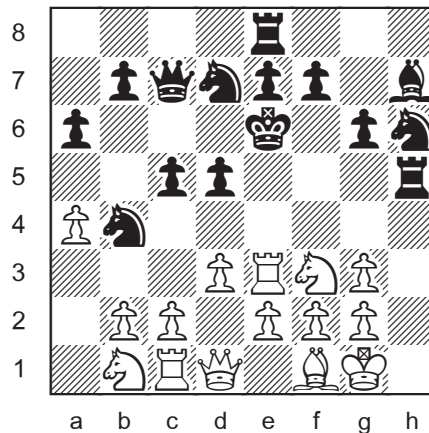
PDF hyperlinks. You can advance to the solution of any puzzle by clicking on the underlined title above the diagram. To return to the puzzle, click on the title above the solution diagram.

Who's the Goof? 07



The goof is the white king. He is in **triple check**. A sure sign that the law has been broken.

Who's the Goof? 08



If you noticed that Black has three knights, you are of course correct. But that in itself is not enough to make the position illegal. What does prove that a goof has occurred is that ***the third knight cannot be a promoted pawn.***

Black is missing one pawn (on the h-file). This pawn did not promote by capturing on g1 because the only missing white piece is the dark-square bishop, which could never have reached g1. The black h-pawn could have promoted on h1, after White played hxg3. However, a promoted knight could never have moved from h1 because of the white pawns on f2 and g3. Therefore the position is illegal.

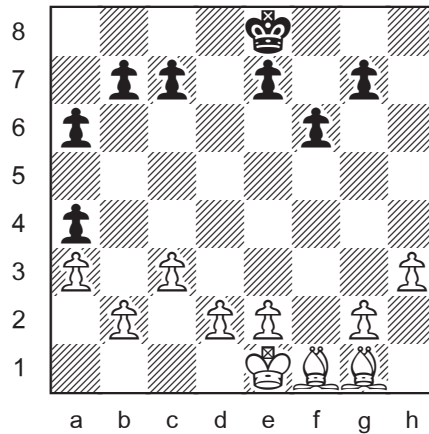
There are several unusual piece placements in the diagram. These “distractors” can all be explained by legal moves. For example, the white king could have reached g1, after d3 and hxg3, by the route Kd2-e3-f4-g4-h3-h2-g1. The check from the white rook on e3 could have happened on the previous move by the discovery Ne5-f3+.



Who's the Goof? 09

Josef Haas 1971

Problème



It is difficult to pinpoint the goof in this puzzle, but it is related to the white bishop on g1, the black pawn on a4, and the missing black h-pawn.

Experienced chess detectives typically begin their investigations by taking an inventory of pieces, and identifying necessary captures and promotions. The missing pieces provide as many “clues” as those on the board.

White is missing six pieces. Three of them were captured by the black d-pawn, on its way from d7 to a4.

The white bishop that began the game on c1 was captured on c1 because there are still unmoved pawns on b2 and d2. That means that the bishop on g1 is the former f-pawn. To become a dark-square bishop and exit the eighth rank, the f-pawn had to promote on b8, which requires six captures on dark squares (f2xe3xd4xc5xb6xa7xb8=B).

Neither white rook ever escaped from behind the wall of white pawns. They did not leave along the open f-file because of the unmoved bishop on f1 (which is blocked by e2 and g2). Thus, the three pieces captured by the black d-pawn were the queen and two knights.

Black is missing eight pieces. The white f-pawn, which captured six times on dark squares en route to b8, did not take the light-square bishop (from c8). It also did not take the dark-square bishop, which was captured on f8 since there are still unmoved pawns on e7 and g7. So we can deduce that the white f-pawn captured all the other missing black pieces, including the h-pawn.

However, the black h-pawn could not be captured by the white f-pawn unless it first promoted into a piece (on h1) and then moved onto the path from e3 to b8.

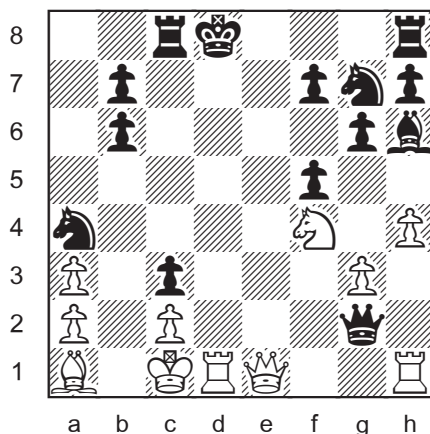
In order to promote on h1, the h-pawn would require two captures, for example $hxg3xh2-h1=Q$. The piece captured on h2 could be the rook that started on h1. But there are no other available pieces to capture on g3 (or elsewhere on the g-file). White's queen and knights were captured on c6, b5, and a4. The original dark-square bishop was captured on c1, and the rook that started on a1 was captured somewhere to the left of f1.

So, there are not enough missing white pieces to explain a promotion on h1, which means there are not enough missing black pieces to explain a promotion on b8. Therefore, we could say that the **bishop on g1** is the goof. It cannot be the original dark-square bishop and it cannot be a promoted pawn.

There are frequently different perspectives on what makes a position illegal, and different ways to demonstrate a contradiction. In this case, an alternate view is that the **black pawn on a4** is the goof. The black h-pawn made two captures to promote on h1, which allowed the white f-pawn to promote on b8. But then there are not enough missing white pieces to explain three captures by the black d-pawn.

The most accurate conclusion is that the position is illegal because **the number of missing white pieces is less than the number of required black captures**.

Who's the Goof? 10



Checks often provide important clues in “retro thinking”.

The goof in this puzzle is the **white rook on d1**. He is checking the black king, but White had **no legal move on the previous turn** to reach this position. Consider the possibilities.

The last move was not by the rook. It could only move to d1 from along the d-file, where it would already be giving check. *It cannot be White's turn if Black is in check.*

That leaves one other option: a discovered check.

The last move was not Kd2-c1+ because the white king would be in an impossible double check on d2, from the black queen and pawn at c3.

Showing that a discovered check by Nd5-f4+ or Nd3-f4+ was impossible is trickier.

Imagine the position with the white knight on d5 and the f4 square vacant. White would then be in check from the black bishop on h6. However, that check would be illegal because the bishop could only move to h6 from along the c1-h6 diagonal (where it would already give check) and no discovered checks are possible.

But if there were a black piece on f4, then White's last move could be a discovered check and capture by Nd5xf4+. So it is necessary to prove that there could not have been a black piece on f4.

An inventory shows that Black is missing two pieces: the light-square bishop and a pawn.

The doubled white a-pawns required a capture on a3, which is a dark square. The missing black pawn was captured there. The only other missing black piece is the light-square bishop, which could never be on the dark square f4. Therefore, a discovered check by the capture Nd5xf4+ (or Nd3xf4+) was impossible.

Since White had no possible move on the previous turn, the position is illegal. This situation is known as "retro-stalemate".

Until next time!

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