DEAD SERIOUS

number 145   April 7, 2018

In the retrograde analysis of chess problems, *dead reckoning* is a method used to determine previous moves based on "dead positions".

A position is dead if there is no possibility of checkmate for either side, even if one side is playing the worst moves imaginable.

The basis of dead reckoning, DR for short, is FIDE rule 5.2.2.
"*The game is drawn when a position has arisen in which neither player can checkmate the opponent's king with any series of legal moves. This immediately ends the game.*"

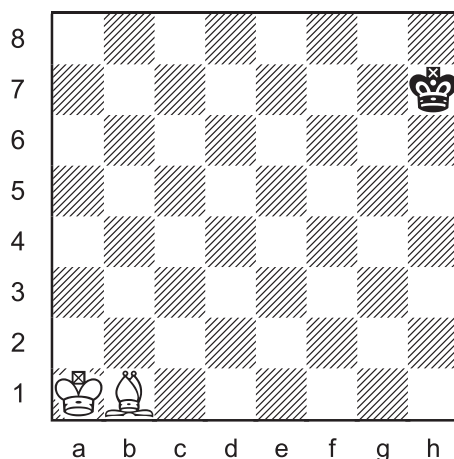The fundamental principle of dead reckoning is:

The last move cannot be made from a dead position.

In other words, the position before the last move has to be alive. There must still be the possibility of checkmate.

This column features four problems involving DR: two last move retros, a rebus, and a construction task. For an introduction to dead reckoning, see column 127 in the archives.

The application of the dead position rule to chess compositions originated in 2001 with British retro expert Andrew Buchanan. Here is one of his early problems that illustrates the basic idea.

Retro 39

What was the last move?

Be as precise as possible. A complete description of a move includes the square a piece moved from, whether a capture was made, and if so, what type of piece was taken.
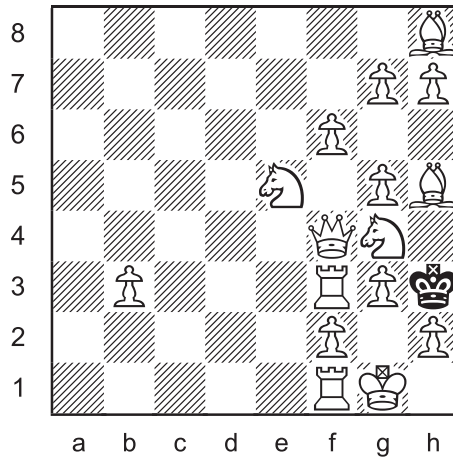

Death vs. Knight
The Seventh Seal, 1957

Not all dead reckoning is as simple as the first puzzle. The following problem is quite the opposite. A masterpiece by Harvard mathematics professor Noam Elkies.

Retro 40
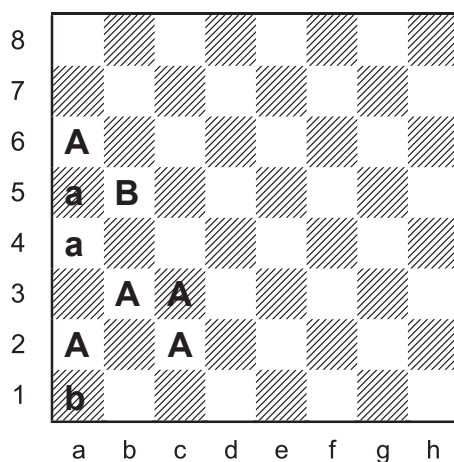

What were the last two moves?

Döden Spelar Schack
(*Death Playing Chess*)
15th century Swedish mural by Albertus Pictor

Have you experienced chess rebuses yet? They are "retro" problems presented in a form similar to sudokus. Sounds like fun to me. If you agree, check out column 133.

Here's a new one dedicated to somebody with the initials A.B.

Rebus 10

Each letter represents a different type of piece.
Uppercase is one colour, lowercase is the other.
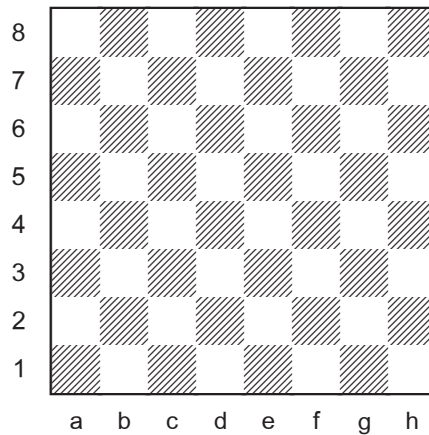Determine the position.

Outplaying the Reaper

Our final problem is a repeat of *construction task 11* from columns 116 and 127. The reason is easy to guess. We have a new record! This time by the *King of DR* himself, Andrew Buchanan.

What is the most pieces on the board so that mate is impossible?

Construction Task 11

Impossible Mate Maximizer

Construct a position, using the maximum number of pieces,
so that neither player can possibly checkmate the other,
even with the help of bad moves by the opponent.
The position may not be a forced stalemate. At least one
player must have the option to "play on", so to speak.

The position must be legal, which means "reachable in an actual game".
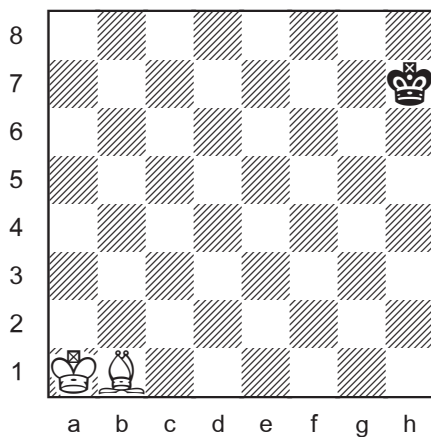

Red Deckoning

SOLUTIONS

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.

Archives. Other columns with similar problems can be found in the *Puzzling Side* archives. Now complete, with an index of problem-types and composers.
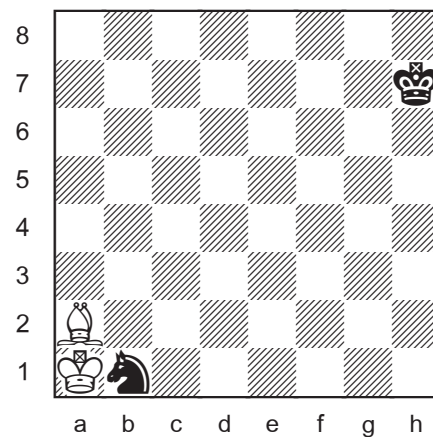
Retro 39

Andrew Buchanan 2001

anselan.com

last move: 1.Ba2xb1(N)+   previous position

Since Black is in check, the last move was obviously by White. No discovered check was possible, so the last move was by the bishop. It did not move to b1 from along the b1-h7 diagonal because it would already be checking the king. It necessarily came from a2.

The last move had to be a capture, otherwise the position was already dead. Mate with K + B vs. K is impossible.

White did not capture a bishop on b1. The earlier position with each side having a light-square bishop is dead.
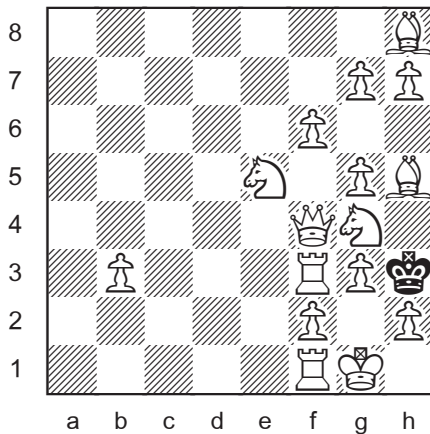
The bishop did not capture a queen or rook because White would be in check, and the only way out of check would be to capture on b1. That means the position would already be dead before the capture.

Therefore, the bishop captured a knight on b1. The previous position was still alive because White was not forced to capture the knight. Mate with K + B vs. K + N is possible. By either side! With bishop Kc2 Bb2 / Ka1 Na2. With knight Ka1 Ba2 / Kc1 Nc2.
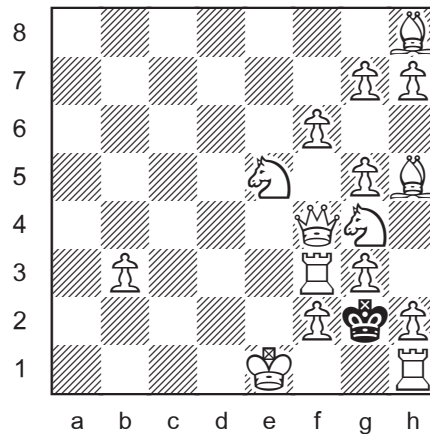
Retro 40

Noam Elkies 2001

StrateGems

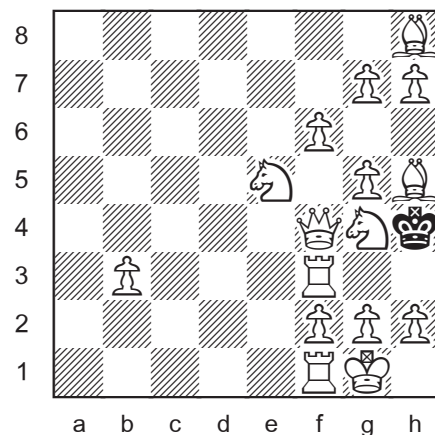last moves: 1...Kg2-h3 2.0-0

position two moves ago

First, let's determine whose turn it is.

The black king has no moves. <u>If it is White to play</u>, there is no way for White to release the stalemate, so the position is dead. But what were the preceding moves?

Black's last move could only have been ...Kh4-h3. This was not a capture because all sixteen white pieces are on the board. White's move before that could only have been g2-g3+. Now consider the position before those two moves.

Black had no move to reach this position. The black king would have been in an impossible check on g3 or h3. So the position is illegal. A situation known as *retro-stalemate*.

position before 1.g2-g3+ Kh4-h3

Therefore, in the puzzle diagram, with king on h3, <u>it is Black to play</u>.

Black is in stalemate. So White just made a move, and the position before that move must still be alive. That is, there must be a way for White to avoid giving stalemate. There also must be a move for Black on the preceding turn that does not lead back to retrostalemate.

The white pawn formation requires fifteen captures. For example:

> e2xf3xg4xh5-h6-h7
>
> d2xe3xf4xg5
>
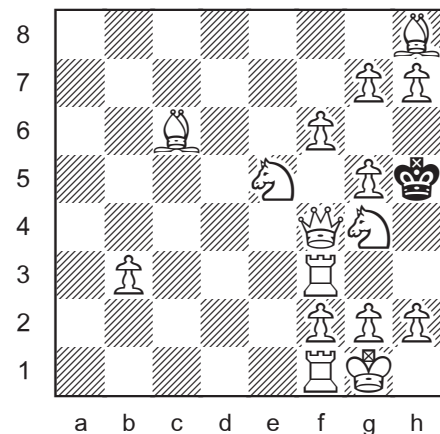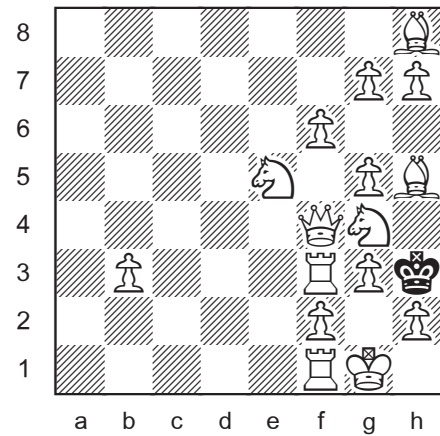> c2xd3xe4xf4xg6-g7
>
> b2xc3xd4xe5xf6
>
> a2xb3

This accounts for all missing pieces. No capture was made by a white officer (KQRBN).

So the last move was not by the white queen, king, rooks, or knights. Black would not have a move on the preceding turn.

But perhaps the last move was by the bishop on h5. For argument's sake, let's say Be8-h5. The analysis that follows also applies to Bf7-h5 and Bg6-h5.

The position in the diagram at the right is alive, and could reach the puzzle position by 1.Bc6-e8+ Kh5-h4 2.g2-g3+ Kh4-h3 3.Be8-h5. However, in this sequence, the position after 2.g2-g3+ is already dead. Black's only choice is 2...Kh4-h3 and White has no way to avoid stalemate with their third move. This means that the last move was not Be8-h5.
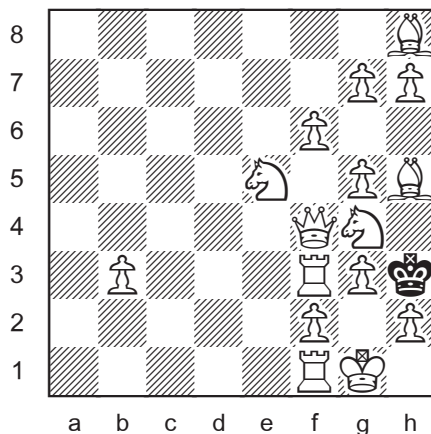
Next we examine the pawns.

position before 1.Bc6-e8+ Kh5-h4 2.g2-g3+ Kh4-h3 3.Be8-h5

The last move was not a non-capturing pawn advance. Black would not have a move on the preceding turn.

It's easy to see that the pawns on the f-file and g-file did not capture on the last move. That leaves two possibilities, g6xh7 and a2xb3.

The last move was not the capture g6xh7. In order to reach the h-file, the white pawn now at h7 captured the black h-pawn on h5, h6, or h7. The black h-pawn could not have promoted. If it were captured on h7 last turn, Black would not have a move on the preceding turn.

Things are trickier with the pawn on b3. The essential clue to this step of the investigation is the missing black a-pawn. It could not have been captured on the a-file. It had to promote first and be captured elsewhere. The promotion could only have happened on a1 after White had already played a2xb3 to clear the way. So the last move was not a2xb3.

That leaves only one possibility for unlocking the position. Castling! White's last move was 0-0, with many options for avoiding stalemate. Anything except Ne3, Kf1, or Rg1.

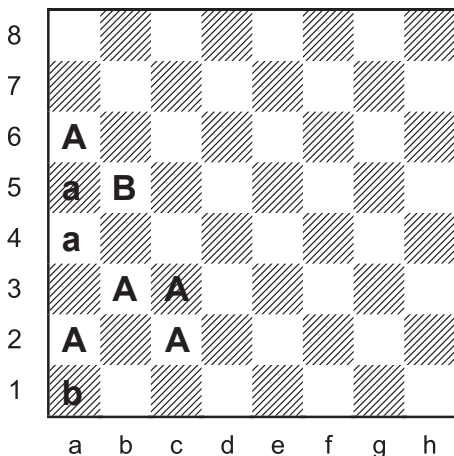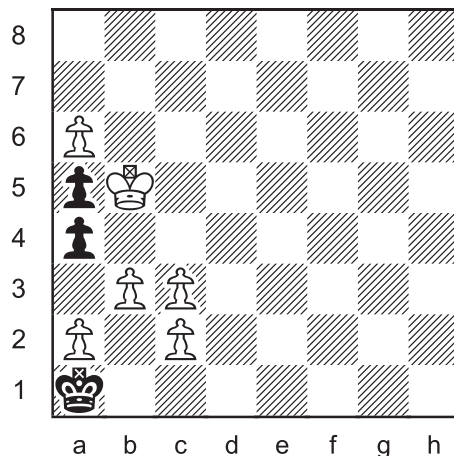Black's preceding move was necessarily ...Kg2-h3. Case solved!

Rebus 10

Andrey Frolkin & Jeff Coakley   2018
Puzzling Side of Chess
"A.B."

A = pawn

B = king

caps = white

B = ♚   The letter with one uppercase, one lowercase.

A ≠ ♛   If A = ♛   Impossible multiple checks (a2 a4 a5 c3).

A ≠ ♞   If A = ♞   Impossible double check (b3 c2).

A ≠ ♜   If A = ♜   Both kings in check (a2 a5).

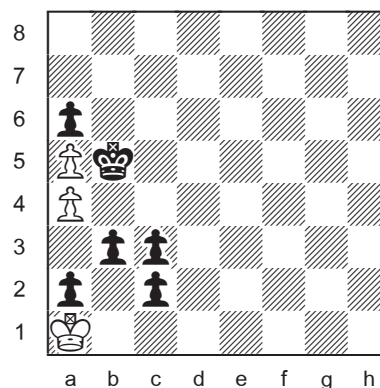A ≠ ♝   If A = ♝   Both kings in check (a4 c3).

A = ♟   Only thing left.

But what colour are the pieces?

Caps ≠ black

> If caps were black, then the black king
> is in check from a white pawn on a4.
> Any move by Black results in stalemate,
> so the position is dead.

> Now consider the last move. It could
> only be 1.a3-a4+. That would have
> been White's only option. Therefore
> the position would already be dead
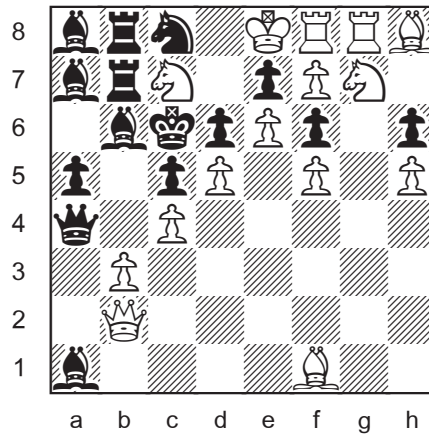> before that move. So caps are not black.

Caps = white

For three more rebuses involving dead reckoning, see *Die Schwalbe*,
issue 288 (17291), and *chessproblems.ca Bulletin,* issues 11 (M-19)
and 13 (C116).

Construction Task 11

Impossible Mate Maximizer

Andrew Buchanan 2017

chess.stackexchange.com

30 pieces in a dead position

Checkmate is impossible.

In fact, even stalemate is impossible!?

last move: 1.d4-d5+ (game drawn at this point)

Black is in check. After the forced sequence 1...Kxc7+ 2.bxa4 Bxb2, the position would be totally blocked except for the black bishop on b2 and white bishop on f1. No captures would be possible. So the position in the diagram is already dead.

The position is legal. The white g-pawn captured a black knight on f7. The black g-pawn promoted to a dark-square bishop on g1. The black b-pawn captured the white a-pawn and promoted to a dark-square bishop on a1.

This is a new record for the task. The old marks were 28 pieces by Geir Sune Tallaksen Østmoe (column 116) and 29 pieces by me (column 127). Will anyone achieve 31?

Until next time!