
$-7 \&=1$ Proca Retractor $(5+2)$
Frankfurt Chess
White Maximummer
White Disparate

## Solution:

-1.c6-c7! Sf7xRh8=bR -2.Sg7-f5 Rf8xSf7=bS -3.Rg8-h8 Sh7xRf8=bR -4.Sh6-f7 Rh8xSh7=bS $-5 . R c 8-f 8+$ Sf7xRh8=bR -6.Sg5-h7+ Rf8xSf7=bS -7.Sf5-g7 \& 1.Se6xf8=wR=

## Explanation:

The move c6-c7 is legal (having in mind the White Maximummer condition) only if the white knights are paralyzed, which means that Black had to move a knight in the previous move. This forces Sf7xRh8=bR as the only possible retraction. This idea repeats in the following moves. In W5, although Rc8-f8 is one of the longest moves, Black is forced to retract a knight because otherwise bK would be in an illegal check from wSh7. Note also the tries -2.Sg7-e6? (refuted by -3. ... Se6xRf8=bR!) and 1.Rc8xf8=wR= in the forward play (refuted because this move is illegal!; namely, because of the retraction -7.Sf5-g7, we know that the previous Black's move was made by a rook, that is, $w R$ is paralyzed).

Six completely determined uncaptures by Black (one in each move) in a Proca Retractor. Switchback of $w S f 5$. Repetition of moves Sf7xRh8=bR and Rf8xSf7=bS.

Judge Michel Caillaud: I frowned at once discovering the exotic combination of fairy conditions. Then it appeared that this conception is rather powerful, using the 3 conditions on every move! (This rarely happens in problems combining several conditions). So, how to explain that the first white retraction is ç6-ç7, rather than a Knigth move (forced by the Maximum condition)? Because the last black move is a Knight move (Disparate condition). But there is no black Knight on the board. Hence the last move was a Knight move and the Knight was transformed by the Francfort condition. Using this principle, White can keep Black under control and 6(!) thematical captures are displayed in 6 moves(!!). White must be careful to keep everything under control and play is not automatical. Impressive.

See also a detailed analysis of the problem by Vlaicu Crişan in Quartz 52 (pp. 882-884).

a) Add $\mathrm{wK}, \mathrm{bK}, 10 \mathrm{wSs}$ and 8 bSs for an illegal cluster.
b) Add wK, bK, 10 wSs and 7 bSs for an illegal cluster.

## Solution:

a) $+w K f 7$, bKe3, wSf2f4f6g1g3g5g7h1h3h5, bSd3e2e4e6f3g8h7h8

b) +wKc4, bKf7, wSb4b5c5c6d5e6f6g6g7h8, bSa6a8b7b8c7d8f8


## Comments:

In comparison to the Baibikov \& Keym's problem (feenschach III-IV/2019, Nr. 12009; also WJP 2019, 2.-3. Place ex æquo), here we have twice as many pieces in the initial position! :D But this is compensated by the following refinements:

- The twinning is more subtle: the requirement to add only one knight less makes all the diference.
- The number of pieces that are to be added is greater. In fact, in the twin a) the maximal possible total number of 20 knights is reached, and 19 knights in the twin b).
- The two solutions are more diverse. Not only that in the twin a) Black gives check and in the twin b) it is White who does it, but also the twin a) is built around legalizing the retraction of the knight's move $\mathrm{Sg} 6(\mathrm{x}) \mathrm{h} 8+$, while the twin b$)$ is built around legalizing the retraction of the underpromotion h7-h8=S+!


The main plan is to retract $\mathrm{Kd8xSe8}$ (wKe1) and then play 1.Kd8-c8+ or $1 . \mathrm{Kd8}$ $\mathrm{c} 7+$, forcing $1 \ldots . . \mathrm{Kb} 8-\mathrm{a} 7$ (with bK firing a K-Q battery, respectively a K-S fairy battery). But before that, wPd7 must be pinned (in order to prevent d7-d8, respectively d 7 xe 8 ). In one twin, the pinning is achieved by an uncaptured bB , and additionally an uncaptured bR is helping; in the other twin, it is vice versa.
a) $-1 . \mathrm{Kb} 2 \times \mathrm{Ra} 2(\mathrm{wKe} 1) \mathrm{Ra} 1-\mathrm{a} 2+-2 . \mathrm{Kc} 1-\mathrm{b} 2 \mathrm{Ra} 2-\mathrm{a} 1+-3 . \mathrm{Kd} 2-\mathrm{c} 1 \mathrm{Ra} 1-\mathrm{a} 2+$ $-4 . \mathrm{Ke} 1-\mathrm{d} 2 \mathrm{Ra} 2-\mathrm{a} 1+-5 . \mathrm{Kg} 3 x \mathrm{Bh} 3(w K e 1) \mathrm{h} 5-\mathrm{h} 4+-6 . \mathrm{Kf2}-\mathrm{g} 3 \mathrm{Ra} 1-\mathrm{a} 2+-7 . \mathrm{Ke} 1-f 2 \mathrm{Ra} 2-$ a1+-8.Kd8xSe8(wKe1) \& 1.Kd8-c8+ Kb8-a7\# (Note: if -5.Kg3xBg4(wKe1)?, then -6.... Be2-g4!)
b) $-1 . \mathrm{Ke} 1 \mathrm{xPf} 2(\mathrm{wKe} 1) \mathrm{f} 3-\mathrm{f} 2+-2 . \mathrm{Ke} 2 \mathrm{xPf} 2(\mathrm{wKe} 1) \mathrm{f} 4-\mathrm{f} 3+-3 . \mathrm{Ke} 1-\mathrm{e} 2 \mathrm{f} 3-\mathrm{f} 2+$ $-4 . \mathrm{Ke} 2 x \mathrm{Re} 3(\mathrm{wKe} 1) \mathrm{Re} 7-\mathrm{e} 3+-5 . \mathrm{Ke} 1-\mathrm{e} 2 \mathrm{R} \sim 7-\mathrm{e} 7+-6 . \mathrm{Ke} 2 x \mathrm{Bf} 2$ (wKe1) Re7-~7+ $-7 . \mathrm{Ke} 1-\mathrm{e} 2 \mathrm{Be} 3-\mathrm{f} 2++-8 . \mathrm{Kd} 8 x \mathrm{Se} 8(\mathrm{wKe} 1)$ \& 1.Kd8-c7+ Kb8-a7\#


## Circe Assasin

Construct an illegal cluster with white piece types A, B, C, D, E and black piece types A, A, B, B, C, in which a piece $A$ standing on a light square gives check and observes none of the pieces of its own color

## Solution:



Piece type A = bishop.
Retractions:

- -wP: -1.Rd5xPd7(+bPd7, -wRd7)+
- -wQ: -1.e5xPd5(+bPd7)+ e.p. d7-d5 -2.Rd5xPd7(+bPd7, -wRd7)+
- -wS: -1.c5xPd5(+bPd7)+ e.p. d7-d5-2.Rd5xPd7(+bPd7, -wRd7)+
- -wB: trivial
- -bPd3: -1.Bf1(e2,d3)-c4+
- -bPd7: -1.Se6-c5+ (does not work in the initial position because White would be in an impossible check from bPd7 after this retraction)
- -bBc6: -1.Bb5-c4+ or d5-d6+
- -bBf7: trivial


## Notes:

- An empty-board illegal cluster where no particular piece type that is to be put on the board is specified!
- The wQe5 cannot be a wR (nor any other piece, because the white pieces must be different) since the position would then be legal: -1.Rd5-e5+
- It seems that the pattern in rows 3-7 can be shifted and/or reflected (and possibly somehow altered) thus obtaining more solutions. Three such tries are shown on the diagrams on the right (all but the bottom-right board), and they all fail because of a subtle reason: unwanted (coincidental) checks in the initial position (twice by the $w Q$, once by the bB)!
- The point of the non-observance constraint is not to avoid the possibility that the pieces on d3 and e5 swap places, but to eliminate some completely different constructions, such as the one shown bottom-right.


