



# THE PUZZLING SIDE OF CHESS

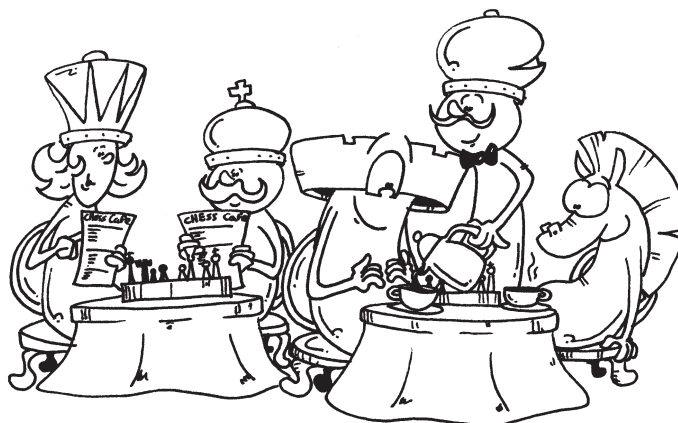
Jeff Coakley

## ROOK AND BISHOP PAIRS

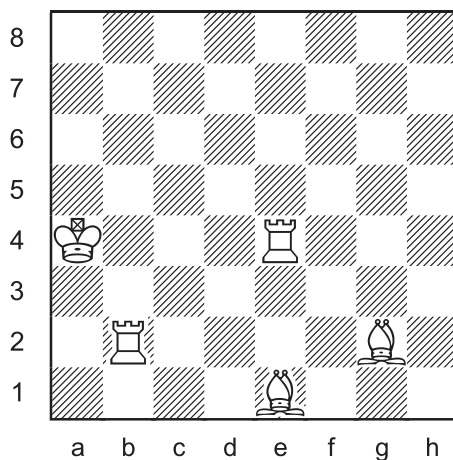
number 142

January 20, 2018

This column presents seven puzzles of various types, all involving rooks and bishops. The grand finale is the super challenging “eight pair loop”, a task which has never been solved.



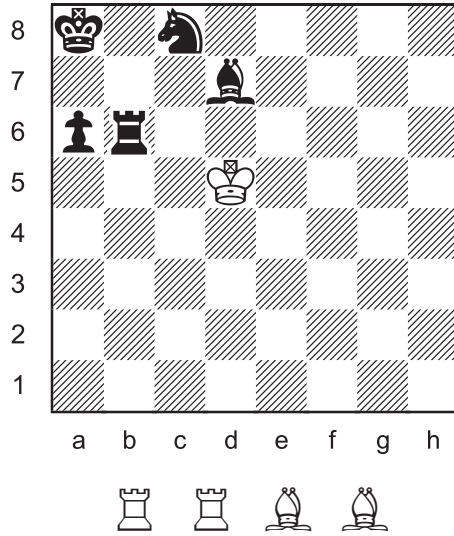
### Triple Loyd 69



Place the black king on the board so that:

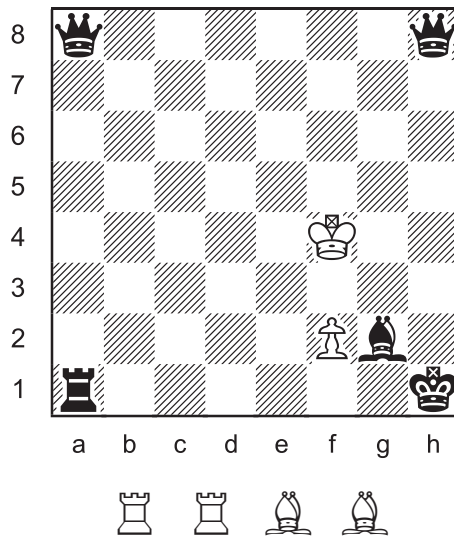
- Black is in checkmate.
- Black is in stalemate.
- White has a mate in 1.

### Inverted Loyd 44

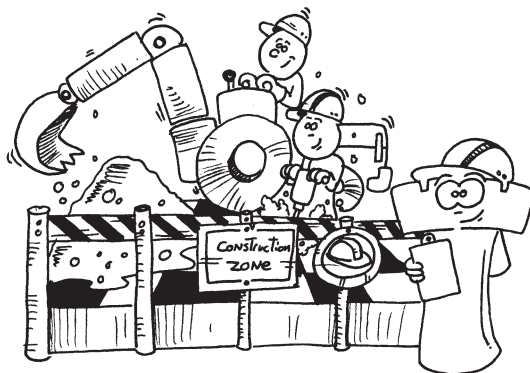


Add two white rooks and two white bishops so that White has mate in one.

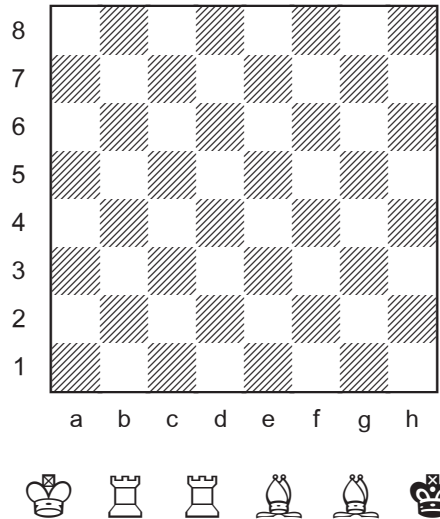
### Inverted Loyd 45



Add two white rooks and two white bishops so that White has mate in one.



### Construction Task 13



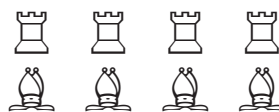
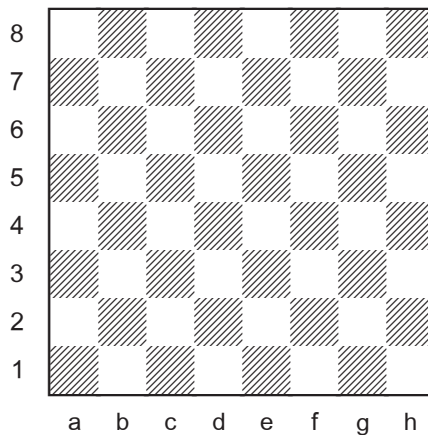
Construct a position with a white king, two rooks, and two bishops against a lone black king so that White has the most mates in one move.

13a. Discovered checks are not allowed.

13b. Discovered checks are allowed.

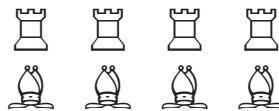
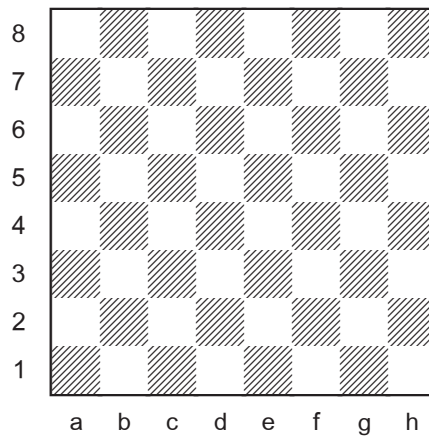
In *part b*, each different move by a piece that uncovers mate is counted separately. Constructed positions must be legal. In other words, they must be reachable from an actual game.

### 4 Rook 4 Bishop Independent Domination

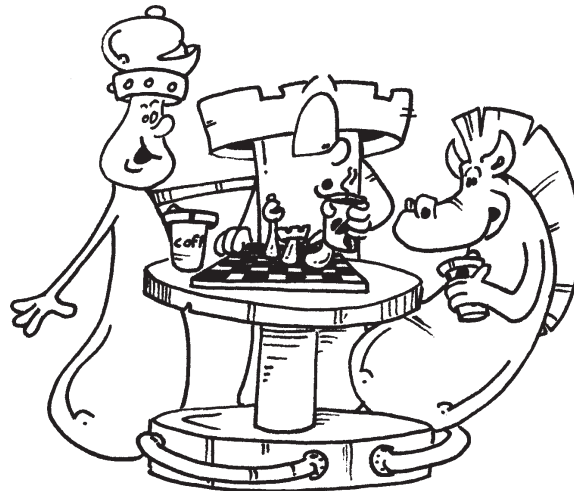


Place four rooks and four bishops on the board so that no pieces are guarded and all vacant squares are attacked.

## 4 Rook 4 Bishop Total Domination



Place four rooks and four bishops on the board so that all pieces are guarded and all vacant squares are attacked.

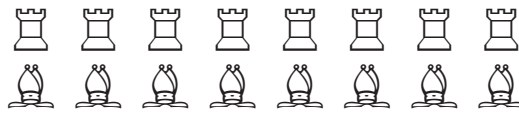
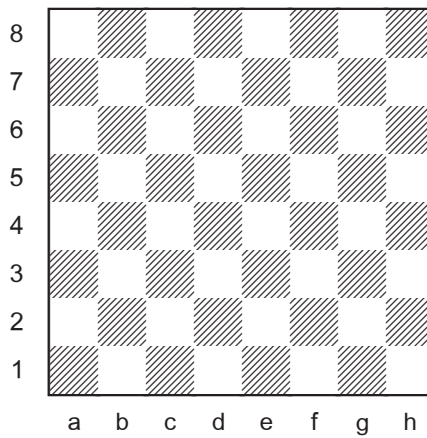


Our final puzzle has three parts, each with an additional pair of pieces. Part A is a fun relatively easy warm-up. Part B is much tougher and will surely test your defensive skills. Part C is the stumper.

In fact, despite considerable effort, I've been unable to find a solution for the 8R 8B loop. There are aspects of this particular task which greatly complicate a programmed computer solution. So at the moment, we are left to our own human wits.

Congratulations to anyone who succeeds in making an 8R 8B loop. Please let me know if you do.

## Rook & Bishop Defensive Loops



Place an equal number of rooks and bishops on the board so that each piece is defended exactly once and each piece defends exactly one other piece. The chain of defence must form a continuous loop.

- A. Six rooks and six bishops
- B. Seven rooks and seven bishops
- C. Eight rooks and eight bishops



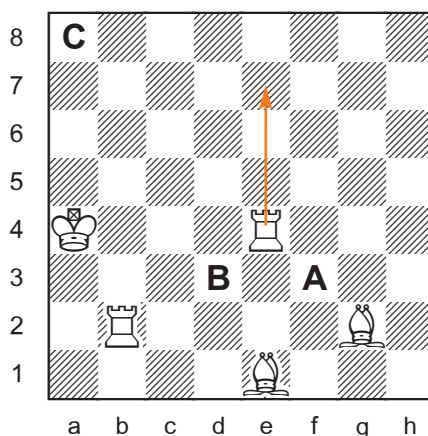
*R & B Loopty Loo*

## SOLUTIONS

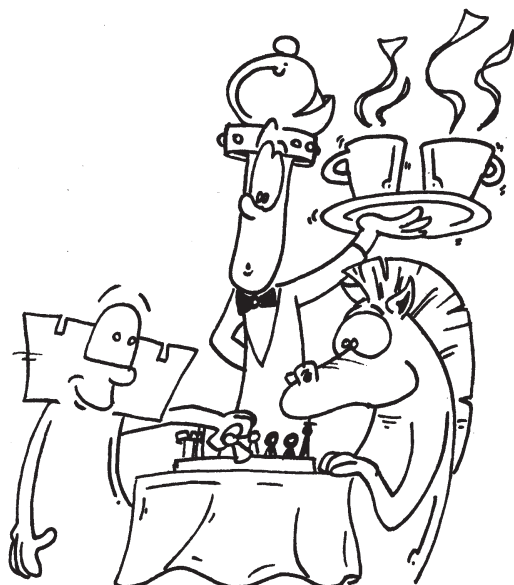
All puzzles by J. Coakley. Triple loyd 69 is from *Scholar's Mate* 24 (1994) and *Winning Chess Puzzles For Kids* (2006), construction task 13 from *WCPFK Volume 2* (2010). The others are *Puzzling Side of Chess* originals (2018).

**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.

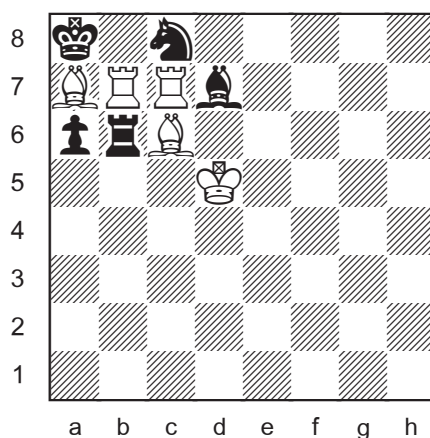
### Triple Loyd 69



- A. Kf3#
- B. Kd3=
- C. Ka8 (Re7#)



### Inverted Loyd 44

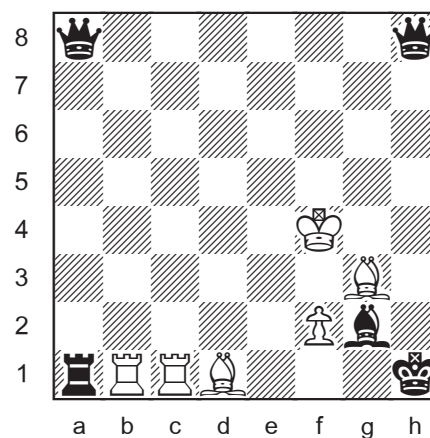


Rb7 Rc7 Ba7 Bc6 were added.

1.Rb8#

Probably a bit too easy for most solvers.

### Inverted Loyd 45



Rb1 Rc1 Bd1 Bg3 were added.

1.Bf3#

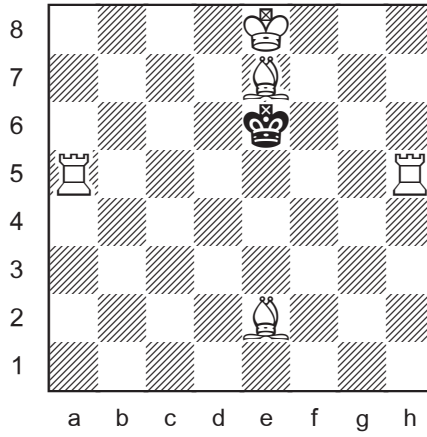
A little tricky perhaps. Hard to make a difficult loyd with this piece grouping.

For more on this kind of problem, see *How You Were Inverted*, columns 96, 101, 105, 109.

## Construction Task 13

### 13a

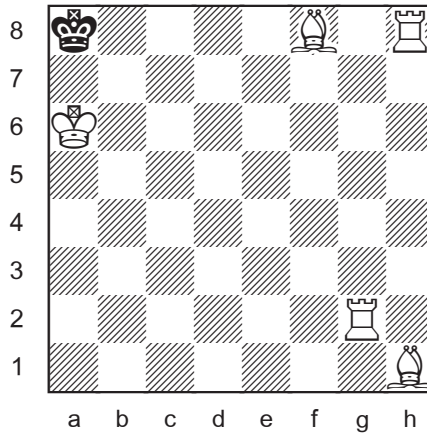
no discovered checks



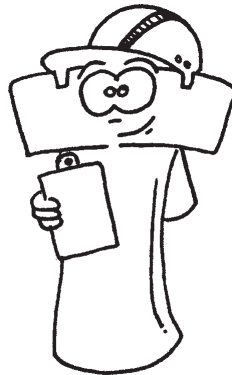
6 mates in one  
(2R + 2R + 2B + 0B)

### 13b

with discovered checks

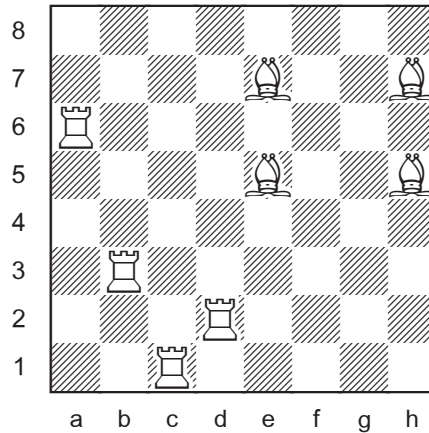


21 mates in one  
(14R + 0R + 7B + 0B)



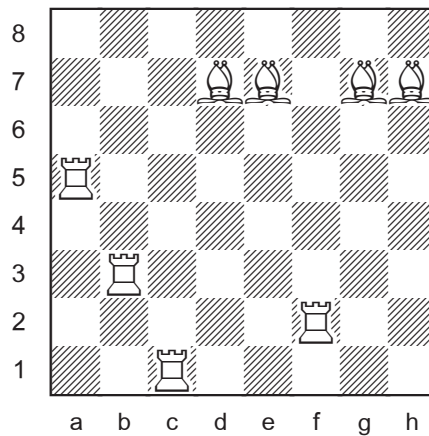


## 4R 4B Independent Domination

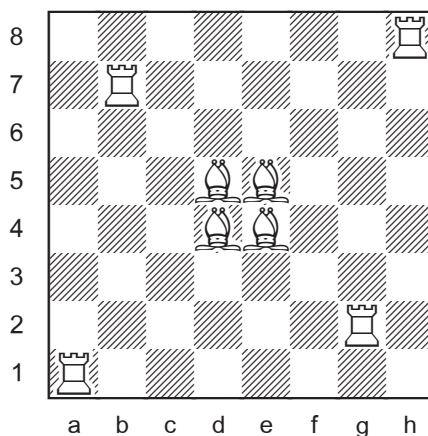


No piece guarded. All vacant squares attacked.

Special thanks to Adrian Storisteanu and Caisay 4.2 for solving a task which I thought might be impossible. There are only two patterns. Here's the other.



## 4R 4B Total Domination



All pieces guarded. All vacant squares attacked.

There are twelve patterns. In all cases, the four bishops are adjacent to each other. The solution shown above\* is symmetrical along the long diagonals. Thanks again to Caisay 4.2 for an analytical assist.

Ra1 Rb7 Rg2 Rh8 Bd4 Bd5 Be4 Be5 \*

Ra1 Rb8 Rg2 Rh7 Bd4 Bd5 Be4 Be5

Ra1 Rb8 Rg7 Rh2 Bd4 Bd5 Be4 Be5

Ra2 Rb1 Rg8 Rh7 Bd4 Bd5 Be4 Be5

Ra7 Rb1 Rg8 Rh2 Bd4 Bd5 Be4 Be5

Ra1 Rb3 Rc2 Rh8 Be5 Be6 Bf5 Bf6

Ra1 Rb8 Rc2 Rh3 Be5 Be6 Bf5 Bf6

Ra2 Rb1 Rc8 Rh3 Be5 Be6 Bf5 Bf6

Ra2 Rb1 Rc3 Rh8 Be5 Be6 Bf5 Bf6

Ra1 Rb7 Rc2 Rh8 Be4 Be5 Bf4 Bf5

Ra1 Rb8 Rc2 Rh7 Be4 Be5 Bf4 Bf5

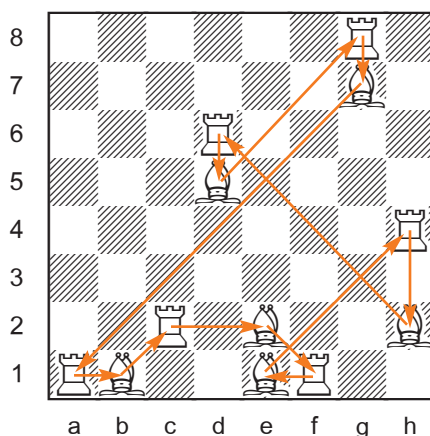
Ra8 Rb2 Rc1 Rh7 Be4 Be5 Bf4 Bf5

For similar problems, see *Board Domination* (column 6), *Minor Inconvenience* (column 71), and *Rook & Knight Pairs* (column 86).



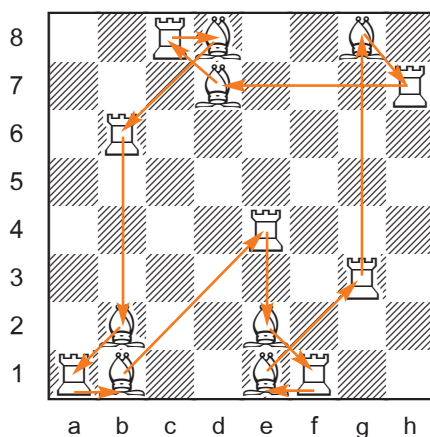
## Rook & Bishop Defensive Loops

**A**



Six rooks, six bishops. There are many solutions.

**B**

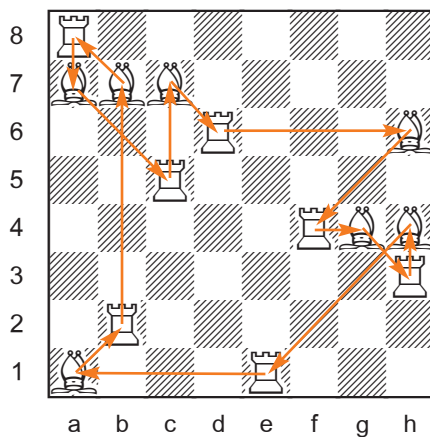


Seven rooks, seven bishops. There are many solutions. One more is shown below and here are three others:

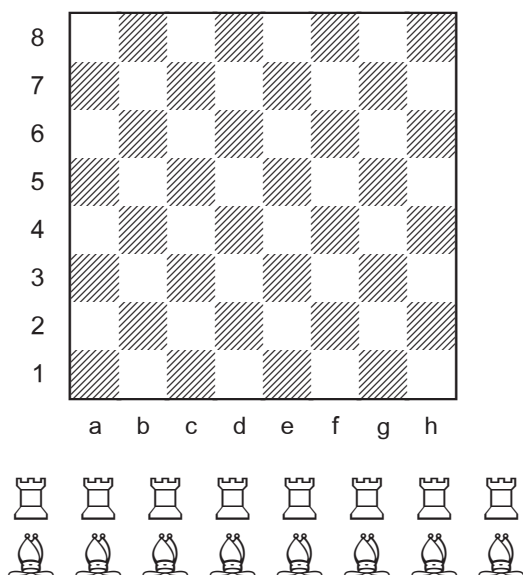
Bb1-Rc2-Be2-Rf1-Be1-Rg3-Bg8-Rh7-Be7-Rd8-Be8-Ra4-Ba5-Rb6

Rb1-Bd1-Ra4-Ba5-Rd8-Bd7-Rc6-Bc5-Rf2-Bf7-Rh5-Be5-Rg3-Bd3

Rd1-Bg1-Rf2-Ba2-Rb3-Bb5-Ra6-Ba5-Rc7-Bg7-Rh8-Bh1-Re4-Bg4



### C



As stated in the main text, the 8 rook 8 bishop loop has never been achieved. I could be wrong, but I believe the task is possible. Hopefully a master solver or clever programmer will prove me right.



Until next time!

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