COUNTERFLOW

by Mark Steere

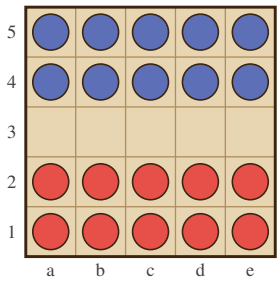


Figure 1
The starting position

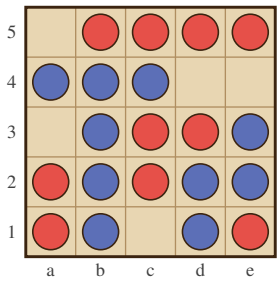


Figure 2
Blue has won

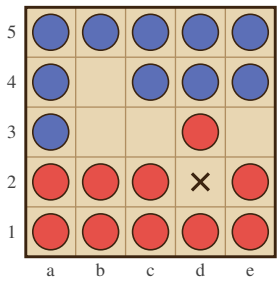


Figure 3
No red checker may move to d2

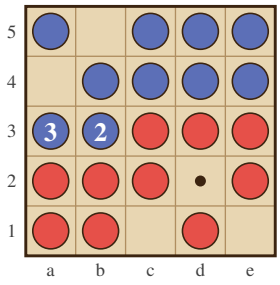


Figure 4
Distances to the opening d2

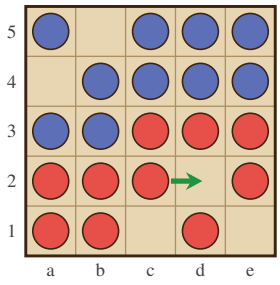


Figure 5
Red's only legal move

INTRODUCTION Counterflow is a two-player game played on an odd-sided, square board. **Figure 1** shows the starting position. The middle row is empty. Blue checkers fill the area above the middle row, and red checkers fill the area below it. The two armies flow through each other in opposite directions. Cycles and deadlocks cannot occur in Counterflow. Mark Steere, in collaboration with Claude, an AI model made by Anthropic, designed Counterflow in November 2026.

OBJECT OF THE GAME A group is an orthogonally interconnected group of one or more same-colored checkers. You win if all of your groups have at least one checker in your far row. In **Figure 2**, Blue has won. Both of Blue's groups have a checker in Blue's far row.

PLAY Red and Blue take turns moving checkers of their own color, one checker per turn, starting with Red. If you have an available move, you must make one. If not, your turn is skipped. At least one player will always have an available move.

LEGAL MOVES Checkers move like non-capturing Chess queens, directly forward, diagonally forward, or sideways, over any number of consecutive unoccupied squares. Sideways moves are subject to a restriction described below.

WALLS A wall is a row filled with same-colored checkers. You must not complete a wall except when: 1) your move wins the game, 2) the wall is in your far row, or 3) there is another wall of your color in the next row ahead of the wall. In **Figure 3**, none of the red checkers on c1, d1, and e1 may move to d2, because the move would complete a wall that meets none of the three exceptions.

OPENINGS An **opening** of a checker is an unoccupied square in the next row ahead of it, with one exception. A square is not an opening of a checker if all three of the following are true: 1) a checker of that color on the square would complete a wall, 2) the wall would not be in that color's far row, and 3) there would not be a wall of the wall's color in the next row ahead of the wall. In **Figure 3**, d2 is not an opening of any red checker (although it is an opening of the blue checker on a3).

DISTANCE The **distance** of a checker is the number of columns from the checker's column to the column of its nearest opening. An opening straight ahead of the checker is at a distance of 0. A checker with no opening has no distance. In **Figure 4**, the dot marks d2, the only unoccupied square of row 2. Row 2 is the next row ahead of the blue checkers on a3 and b3. The square d2 is an opening of both blue checkers. **An opening doesn't have to be in front of a square that the checker can move to.** For example, the checkers on b3, c3, and d3 block the blue checker on a3 from moving to d3. The blue checker on a3 has distance 3 to d2, and the blue checker on b3 has distance 2 to d2. The numbers on the two blue checkers are their two distances from d2.

SIDEWAYS MOVE RESTRICTION The **shortest distance** is the shortest distance of all checkers of both colors on the board. **A sideways move is legal only if 1) the shortest distance after the move is shorter than the shortest distance before the move, or 2) the move wins the game.** If the shortest distance is 0, no sideways move is legal, except for a winning sideways move.

Figure 5 is a continuation of **Figure 4**, and it's Red's turn. The square d2 is an opening of the blue checkers on a3 and b3. The square d2 is not an opening of any red checker, because a red checker on d2 would complete a wall. In the same way, a4 is an opening of the red checkers on c3, d3, and e3, and a4 is not an opening of any blue checker. The blue checker on b3 and the red checker on c3 each have distance 2. No checker has a smaller distance, and the shortest distance on the board is 2. Red's only legal move is the sideways move from c2 to d2, shown by the arrow. After the move, the unoccupied square c2 is an opening of the blue checker on b3 at a distance of 1. The shortest distance on the board has gone from 2 to 1.

DESIGN NOTES With this design, I knew where I wanted to go, but I needed help from AI to get there. Counterflow is a magnificent mechanism. It's magical how constricted the flow can become, while never quite stopping. It's perfect. AI has facilitated a whole new level in abstract game design.

AUTHOR'S NOTE Feel free to publish this rule sheet and to program the game of Counterflow. No licensing fee or royalties are expected. However, please don't change the name or the rules, and please attribute the game to me, Mark Steere. My other games can be found at marksteeregames.com.

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