Issue 21 Spring 2021

Abstract Games

...for the competitive thinker

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Front Cover

Accasta (1998) is a game by Dieter Stein, and one of his first games. The image shows an Accasta prototype that Dieter sent to *Abstract Games* back in 2003; an article about the game would have appeared in the old Issue 17, "Accasta—Introduction to a Pure Stacking Game." Years passed in which *Abstract Games* was dormant, and the article was subsequently published on Dieter Stein's website. Nevertheless, Accasta has stayed with us throughout the years, and every now and then we still play this fine, unusual stacking game, using the original prototype.

Accasta pieces come in three types, Shields, Horses, and Chariots, which can move, respectively, up to 1, 2, and 3 spaces. The top piece controls the column, and can move any pieces under it, up to the whole stack, according to the power of movement of the top piece. A stack can split, and if it exposes a lower column controlled by the moving player, this column, too, may move in the same turn. Stacks can land on any friendly or enemy stacks within their reach, but here is the key rule: no stack can have move than three pieces of any one colour. This means, for example, that if you have a stack with three captured enemy pieces under it, it is invulnerable to recapture. The pieces begin arranged, facing off across the board, each army in its own nine-space castle. The objective is to control three stacks in your opponent's castle at the start of your turn. Accasta's goal is similar to that of Camelot or Jungle, occupation of key spaces on the opponent's side of the board.

Accasta has a variant, Accasta Pari, in which there is only one piece type. The power of movement of a piece controlling a stack is determined by the number of pieces of its own colour underneath it. Accasta Pari is quite a different game. I have not played enough to be able to evaluate its merits, although with just one piece type the rules for Pari are simpler and more elegant. I like the three piece types of the original game, although my preference may be based on familiarity with the older version, and nothing more substantial.

Accasta Pari was joined by two other stacking games, Abande (2005) and Attangle (2006), playable with a single set as Tactic Blue, and published by Bambus Spielverlag. Dieter Stein's website lists a total of 25 games, many of which can be played on his own website or on SuperDuperGames. Urbino is reviewed in this issue, which also includes an interview of Dieter Stein by Rey Armenteros. Many of Dieter's best games are published in attractive wooden editions by Gerhards Spiel und Design. ~ Ed.

Dieter Stein's games: https://spielstein.com/
Gerhards Spiel und Design: https://www.spielewerkstatt.eu/de/

Bhargage game in progress

Contents

The cover of this issue shows an original prototype of one of Dieter Stein's first games, Accasta. We also have a review of one of Dieter's more recent games, Urbino, and an interview with Dieter about his games and game design more generally. We were supposed to present Accasta in the old *AG17*, so it is a pleasure now finally to focus on Dieter and some of his games. On his website, Dieter writes, "My primary interest is in innovative concepts, reduced to the essentials and embedded in elegant rule sets, which are challenging and fun to play." That seems to me like a perfect philosophy for a designer of abstract games. I hope we will be able to revisit games by Dieter Stein in future issues.

Tumbleweed, by Mike Zapawa, is a game of utmost simplicity in its rules. Tumbleweed has no connection with Go in its origin, but the game unfolds in a manner that is very Go-like, with opposing walls of pieces surrounding territory. I wanted to describe Tumbleweed as another attempt at Hexagonal Go, but I cannot do that; Tumbleweed is a territorial game that is superficially similar to Go. Perhaps this is "convergent evolution," in games. Just as bats and birds both fly, Go and Tumbleweed are both territorial games in which opposing walls of pieces defend territories—each game approached this form from a different direction.

While Tumbleweed is a natural game with a minimalist rule set, Jersi is a game that is obviously constructed. The "artificial" nature of Jersi does not mean that it is any less of a game. The tactics of Jersi follow from its intricate rules; interesting strategies follow from its variety of tactics. More and more, I think that if a game has interesting tactics, the strategy will take care of itself.

Mattock, by Drew Edwards, is built around the structures of filled cells in a hexagonal array, where no filled cell can touch more than three other filled cells. Certain structures are recurring, and Drew has built a game of careful, puzzle-like manoeuvring of "miners" within these structures as they expand over the board. Mattock challenges the player firstly to perceive certain polygonal shapes, and secondly to understand the tactical and strategic consequences of these shapes. Mattock is a mental exercise; as you begin to see how the game is structured, strategies unfold.

With many of the games we cover, the reader may not have the equipment ready to hand. Maybe you can buy a set or construct a set out of parts from other games. Boom & Zoom by Ty Bomba is different, in that it can be played just with a Checkers board and set. It is great to have the opportunity to play almost unlimited games online, but it's nice also to handle a physical set. Many people over the world, across many cultures, have access to something like a Checkers set. We can all play Boom & Zoom!

Ponte del Diavolo by Martin Ebel dates back to 2007. It is not a new game. Nevertheless, we have been doing some catch up, with a retrospective of some of the best games since the old series of *Abstract Games*. Actually, much of our coverage is like this, racing to catch up on a fast evolving world. K. C. Smith eloquently explains why Ponte del Diavolo still deserves our attention.

Alain Dekker writes about Alfred's Wyke, which is one of the unusual games from designer Andrew Perkis. Alfred's Wyke is an asymmetrical alignment game, like his game Miller's Thumb, described in *AG9*. Aldred's Wyke is playable on SuperDuperGames, as are Andrew's other games Owlman, Caravaneers, and Mirador. Andrew's highly original games ought to be more widely known, and I hope we can look into them more. Mirador, for example, may be as foundational and significant a connection game as Twixt. While Alfred's Wyke is too baroque to be foundational, it is an original form for an alignment game.

This issue is more self-indulgent than usual. I include my own games Bhargage and two Spider variants, Sparrow and Starfish. I have never before included any of my own games in *Abstract Games*, and especially not games like Bhargage and the Spider variants, which are obscure and minority-interest. Bhargage and the Spider variants are "pandemic games," developed during a year of back-and-forth lockdown. They illustrate a theme, standard card games transferred to non-standard decks.

The game design competitions are back. I am announcing the Unequal Board Spaces Game Design Competition. The deadline for submissions is around the middle of this calendar year. Tip-Top-Toe and Hox, by Larry Back, are the first two entries.

We also included Splitter, a game by an unknown author from our Shared Pieces Game Design Contest of 2003. I hope we can identify the designer. Splitter was included because the print version of this issue had some extra space. We also added Redstone, an interesting Go variant by Mark Steere; and a review of *The Chess World of V. R. Parton*, edited by Jean-Louis Cazaux.

I found out that L. Lynn Smith had passed away. Lynn was responsible for the early articles on Jetan in *AG6*, *AG7*, *AG8*, and *AG14*. He wrote me once of playing Jetan during his time in the US Navy. I believe his theories on Jetan originate from this time, through much actual experience playing the Martian game. Lynn wrote about the unusual game Gle'x in *AG11*. He wrote a series of articles on 3D Chess in *AG10* through to *AG15*, and the last was published in *AG17* in the new series. He contributed to the game design competitions, and his unusual game SanQi, with shared pieces, was finally highlighted properly in *AG17*. His games Ithaka, Photonic Attack, and also SanQi, are playable on SuperDuperGames. Lynn was a great abstract gamer, and these are just his gaming accomplishments that I know of. Rest in peace, Lynn.

Kerry

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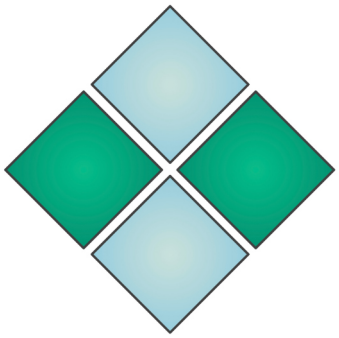


UNEQUAL BOARD SPACES GAME DESIGN COMPETITION

by Kerry Handscomb

Back in *AG17* we briefly reviewed the game design competitions we ran in the earlier series of *Abstract Games*. We proposed an Unequal Board Spaces Game Design Competition. In other words, the games have boards in which the effect of the spaces on the pieces is variable, as with Katarenga (*AG17*), Quandary, Kamisado, and others. I speculated that there may be other ways entirely of interpreting the meaning of "terrain" for abstract games.

We vacillated about a new game design competition over the succeeding year. In particular, I felt that there were plenty of other opportunities for game designers to showcase their work elsewhere. However, *Abstract Games*, I hope, has a unique perspective on games that may not adequately be represented elsewhere. In addition, several game designers contacted me to ask about the Unequal Board Spaces Game Design Competition. People had already started to develop games just for the purpose of entering this competition. We must continue, then! And so, we are formally announcing the opening of the Unequal Board Spaces Game Design Competition.

Entries will be accepted until around the middle of this year, June 30, 2021. Documents with rules and diagrams should be emailed to me at *Abstract Games*. I cannot say yet that we have all the judges lined up, but I will be reaching out to a few people before June 30. Designers of the top three games will receive a complimentary copy of the hard-copy magazine in which their design is featured.

To set the scene, I would like to introduce two of the games that were already submitted, Tip-Top-Toe and Hox, both by Larry Back. Larry, of course, is well known in the pages of *Abstract Games*, and he has contributed many articles. The games here are obviously not necessarily the winning entries, but I think they are good examples of the kind of thing we were reaching for with the concept of "terrain" for an abstract game. For that matter, Larry's older games Onyx and Diamond would also count as games with variable board spaces. The presentations are by Larry himself. I have included some of his notes on strategy and tactics after the rules of each game.

Tip-Top-Toe

Created by Larry Back

Tip-Top-Toe is a two-player game played between Black and White (or any two contrasting colours). The game is played on a board that is comprised of nine Houses, each of which is comprised of nine squares. The nine Houses are arranged in a 3x3 array and the nine squares within each House are also arranged in a 3x3 array. Among the nine squares in each House are four Side squares, four Corner squares, and one Middle square. In total, there are 81 squares on the Tip-Top-Toe board.

Each square on the Tip-Top-Toe board is labelled with a number from **1** to **39**. Each Side square shares the same number with two other Side squares. Each Corner square shares the same number with one other Corner square. Each Middle square shares the same number with no other square. Readers can use the Tip-Top-Toe board on the back cover.

Tip-Top-Toe board

The game starts with no pieces on the board. During the game, Black will place black pieces on the board and White will place white pieces on the board. Black has the first turn and players alternate turns throughout the game. Passing a turn is not permitted.

A turn in Tip-Top-Toe consists of placing a piece on a square and then, if there are other squares labelled with the same number, placing a piece on those squares too. This means that each turn will consist of placing either three pieces on Side squares, two pieces on Corner squares, or one piece on a Middle square.

A player occupies a House if that player has three pieces in a row, diagonally or orthogonally, in that House. It is possible for both players to occupy the same House. For example, both players can have three pieces in a row horizontally, or both players can have three pieces in a row vertically, in the same House. As a result, each House will end up being occupied by one player, both players, or neither player.

The game ends when one player has occupied three Houses in a row, diagonally or orthogonally. If neither player occupies three Houses in a row then the game ends when the board is filled with pieces.

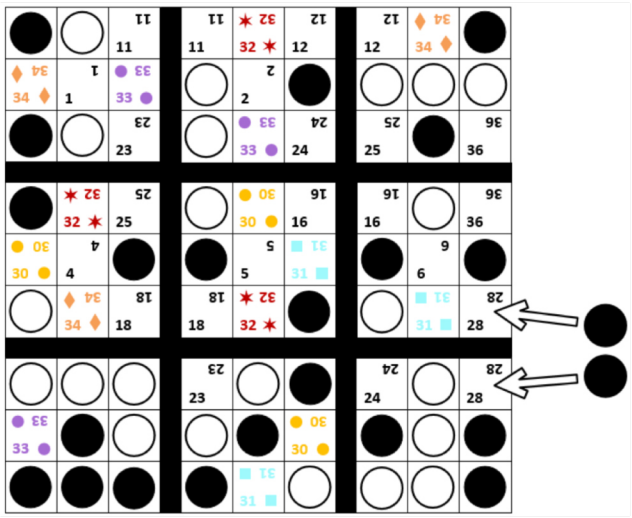
There are three ways to win a game of Tip-Top-Toe:

1. Be the first player to occupy three Houses in a row, diagonally or orthogonally.
2. If neither player occupies three Houses in a row, then be the player that occupies the most Houses.
3. If neither player occupies three Houses in a row and both players occupy the same number of Houses, then be the player with the fewest pieces on the board.

Draws are not possible.

In the following position, Black moves to the two corner 28 squares. The lower 28 move gives Black the win as Black now

occupies the bottom three houses in a row. (Note that both players occupy the two bottom corner houses after the 28 move. A player wins by occupying three houses in a row even if the opponent also occupies one or two of those same houses.)



Black makes a winning move.

To begin the game, players decide who should have the first turn as Black. But then, after the first turn by Black, White can switch sides and play as Black for the rest of the game or White can continue to play as White and have the next turn. (This rule serves to offset Black's first-turn advantage.) The option to switch sides is only available to White after Black's first turn.

Tip-Top-Toe Strategy Notes

For strategy purposes I assigned a value to each square on the board. I figure side squares are worth 2 points since you can make 3-in-a-row in two ways that involve the side square. Similarly, corner squares are worth 3 points and middle squares are worth 4 points. I do the same thing with houses: 2 points for a side house, 3 points for a corner house, and 4 points for the middle house.

*Then, to calculate the value of each square on the board within a house, I add the value of the square within the house to the value of the house. For example, the **1** square is a middle square on a corner house (a middle-corner or MC) so it has a value of 4+3=7. The **32** square at the top of the board is a side square on a side house (a side-side or SS) so it has a value of 2+2=4. But the side squares come in threesomes so to calculate the value of a move to three side squares you need to add the values of all three side squares. It turns out when you do that the total always adds up to 14. For example, each side square threesome is either made up of SS+SS+SM (4+4+6=14) or SS+SC+SC (4+5+5=14).*

I constructed the board this way on purpose. The idea is to make it so that it is not obvious to which side square threesome you should move, at least early in the game before there are many pieces on the board. The more pieces there are on the board the less relevant this point system becomes. But early in the game I think it is useful.

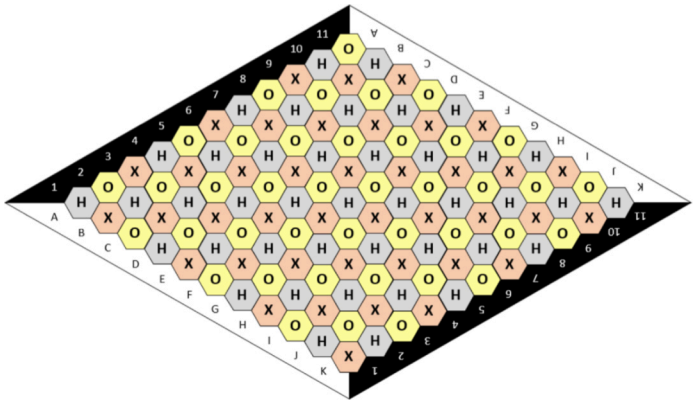
The corner pairs add up to either 11 or 12. I could not make them all add up to the same number but at least there is not much difference, point-wise, in the corner pairs. There was nothing I could do with the middle squares though.

*Using this point system, I figure a move to square **1**, **3**, **7**, or **9** is a good neutral first move since each of these squares is worth 7, according to my point system, which is half of 14. After the first move I assume it is best to move to side square threesomes initially since these moves have higher point values than corner or middle square moves. But, of course, if you just move to side squares then you will never make 3-in-a-row, so obviously you must consider corner square and middle square moves at some point as well.*

Hox

Created by Larry Back

Hox is a simple Hex variant. The Hox board is like a Hex board except that each cell on the Hox board is labelled with the letter **H**, **O**, or **X**.



Hox board of size 11x11 (other sizes possible, like Hex)

The only other aspect of Hox that differs from Hex is the following rule:

- A move to an **H** is always followed by a move to an **O**.
- A move to an **O** is always followed by a move to an **X**.
- A move to an **X** is always followed by a move to an **H**.

To clarify, Black will start by placing a black piece on an **H** cell; then White will place a white piece on an **O** cell; then Black will place a black piece on an **X** cell; then White will place a white piece on an **H** cell; then Black will place a black piece on an **O** cell; then White will place a white piece on an **X** cell; then Black will place a black piece on an **H** cell; and so on.

No two adjacent cells on a Hox board will have the same letter. Different board sizes can be used, but for any board size the cells on the acute corners must be **H** cells. This ensures that there is an equal number of **O** and **X** cells, and that the number of **H** cells is either equal to, or is one greater than, the number of **O** and **X** cells. Consequently, all cells can eventually contain a piece. As a result, draws will not be possible.

Like Hex, Hox uses the pie rule: To start the game, one player will place a black piece on an **H** cell. The other player will then decide whether to continue the game from that position as Black or White. The player that becomes White will make the next move (to an **O** cell) and players will alternate moves for the rest of the game.

Hox Strategy Notes

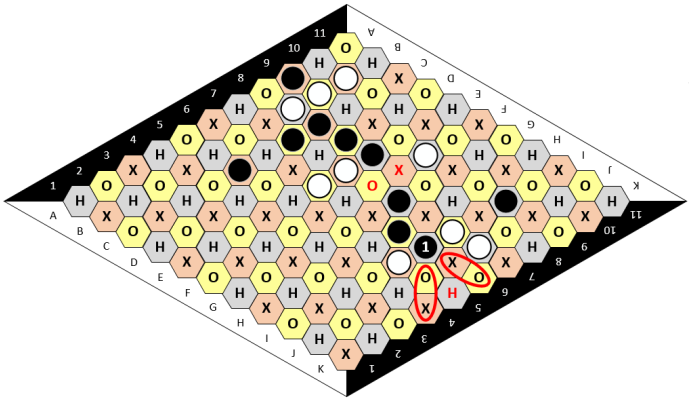
*One Way Stretch: This is where you have a piece on a cell (say an **H** cell) and you place another piece on a nearby cell (say an **X** cell) such that there is an empty **O** cell in-between the **H** and **X** cells. In Hex, your opponent could just play to the **O** cell on the next move and block the connection between your pieces on the*

H and X cells. But, in Hox, after you have played to an X cell you know your opponent's next move must be to an H cell and then you can play to the O cell on your next move and connect your two pieces on the H and X cells. However, your opponent might be able to find an H cell move somewhere on the board that makes a threat and compels you to make your O cell move elsewhere. This would be like a ko *threat. Now your opponent would have the next O cell move so, in this case, your opponent would be able to break the connection between your two pieces on the H and X cells.*

One Way Push: Similar to the One Way Stretch but this is where you have a piece on a cell (say an H cell) and you place another piece on an adjoining cell (say an X cell) where there is an empty O cell adjacent to the X cell such that the X cell is between the H and O cells. Again, your opponent will not be able to move to the O cell on the next turn so you are free to continue pushing in the same direction with a move to the O cell on your next turn. But, same as with the One Way Stretch, your opponent may have an H cell move that compels you to respond with an O cell move elsewhere and then your opponent will have the next O cell move.

Two Way Stretch: Both Hex and Hox have a Two Way Stretch but it works differently for each game. In Hex, when you make a Two Way Stretch you usually wait until your opponent plays to one of the two in-between cells and then you immediately play to the other in-between cell in order to complete the connection. But, in Hox, you cannot do this. After making a Two Way Stretch (say between two H cells) you must move to one of the in-between O or X cells on either of your next two moves or your opponent can break the connection between your pieces on the two H cells. So, after playing to an H cell and making a Two Way Stretch with another one of your pieces on an H cell your opponent can immediately play to the in-between O cell and you can just answer by playing to the in-between X cell. But if your opponent plays to an O cell elsewhere and this move compels you to respond by playing to an X cell elsewhere and then your opponent makes an H cell move that compels you to respond to an O cell elsewhere then your opponent can break your connection between the two H cells by playing to the in-between X cell. At this point you would have an H cell move and then your opponent could follow up by playing to the in-between O cell and thereby break your connection between the two H cells on the Two Way Stretch. So, in other words, your opponent needs two consecutive threats (like ko *threats) to break the connection between your two H cell pieces on the Two Way Stretch. Hex has nothing like that.*

Edge Templates: Hox has very different edge templates than Hex. The following diagram shows an example.



Hox edge template

Having just moved to the H cell near the bottom-right edge with 1, Black's next two moves will be to an X cell followed by an O cell. This gives Black the threat to make a one-way stretch (along the O-X pair at J5-K4) as well as the threat to make a one-way push (along the X-O pair at J6-K6) thereby connecting the black piece at 1 to the edge. If White plays to an O cell in one of those pairs then Black just plays to the X cell in the other pair. But White can disrupt this connection by playing to an O cell somewhere else on the board so that Black feels compelled to respond with an X cell move elsewhere. One such move by White would be to the red O at F7. If Black responds by playing to the red X at F8 then the connection of the black piece at 1 to the edge is no longer guaranteed. This is because Black's next two moves would be to an O cell followed by an H cell. This changes the dynamic and allows White to break the connection of 1 to the edge with a move to the red H at K5.

Tip-Top-Toe and Hox are the first entries to the new contest. Splitter is a game that was submitted to the Shared Pieces Game Design Competition run by *Abstract Games* back in 2003. At the time I wrote, "The author characterizes Splitter as a connection game in which the object has nothing to do with connection. It may well be the most original game in the collection."

Unfortunately the designer names were redacted for judging, and over the years the original documents have been lost. I do not know who designed Splitter. If anyone recognizes this game and knows its author, please let me know so we can publicize the designer's name. Splitter is too interesting to let it slide into oblivion. We have three other games with unknown authors, which along with Jade, SanQi, and Splitter would have gone into the old *AG17*—the best from the large number of entries we received. So here is Splitter, with the original text and diagrams from 2003:

SHARED PIECES GAME DESIGN COMPETITION

Author Unknown

The board and starting position is shown below. The V-shaped walls are called wedges (marked here with black hexagons. You need 79 identical stones to play and some extra stones or tokens of another type to mark the wedge walls.

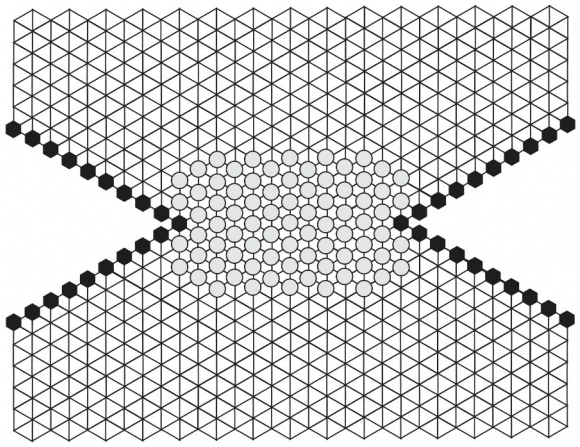


Figure 1: Board and starting position.

The board should be at least as large as the one shown; it is conceivable that a bigger board would be necessary in very unusual circumstances. The board is placed between the two players such that the wedges lie to left and right. The two walls close to a player belong to him. (The wedge walls at the points of the V's belong to both players.)

Neighbouring stones are *connected*. At the start of the game, there is a connection between a player's two wedge walls by means of the playing pieces. During the whole game each player must maintain his connection. It is permitted for part of this connection to zig zag into the opponent's half of the board.

The first player is decided by lot. Moves then alternate. It is not allowed to pass. If there is a legal move left, it has to be played. The outer lines of stones connecting the two wedges on both sides and forming the edge of the stone cluster is called the *border*. The area between the two border lines is called the *Inner Zone*.

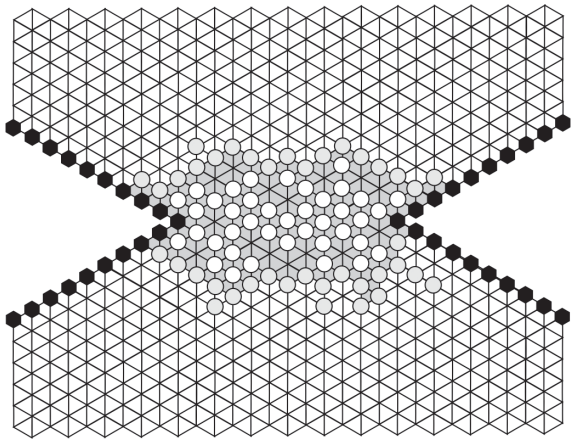


Figure 2: Grey border stones; white Inner Zone stones

A player's turn consists in moving a single stone from the inner zone (i.e., a white stone in Figure 2) in a straight line over other stones and the border to his own side of the board.

It is not allowed to move stones over empty spaces. A player can only move stones in the three directions towards himself. Every stone finishes the move outside the Inner Zone and extends the player's border in that direction.

The game ends when the two border lines, including all stones connected to them, get disconnected. The border lines together with the stones connected to them, now form two groups.

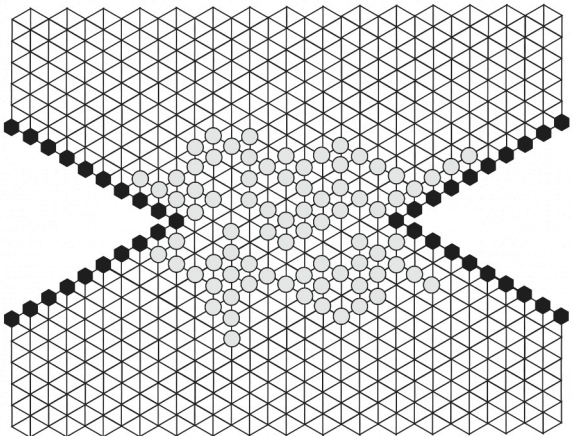


Figure 3: A completed game; the score is upper 44 and lower 35

The player who has more stones in his group wins the game. It is possible that there are small groups in the Inner Zone that are not connected to either of the players' groups. These stones belong to neither player and can be taken off the board to simplify counting. The group of one (or both) players often reach to the other half of the board with some of their extensions. ■

Game review

Dieter Stein's Urbino

Reviewed by Kerry Handscomb

Dieter Stein's games Polar and Urbino both originated in 2017. Polar is a game played on a squared board with black and white pieces. Polar is one of those games with rules that are so basic that you wonder why no one has thought of it before. Polar plays well as it is. However, Dieter Stein developed Urbino on the basis of Polar. Urbino has various piece types, a different scoring system, and a clever way to restrict the movement options each turn. Urbino has complex tactics and some clear strategic choices. I have played both games, and I prefer Urbino, even though it lacks the simplicity of Polar.

Polar is played on a squared board of maximum size 13x13. The players use black and white stones, and Polar could best be played with a 13x13 Go set. Orthogonally connected pieces, possibly of one or both colours, constitute a group. A section on the other hand, is a connected group of pieces of the same colour. The core idea of Polar, and also of Urbino, the foundation of both games, is that any group can only have two sections, one of each colour. Polar finishes when no more stones can be played, and groups with two sections score for the player with the larger section. The score for each such section is a triangular number: 2 stones scores 3, 3 stones scores 6, 4 stones scores 10, and so on.

The core idea of Polar is brilliantly obvious, once you see it, although it took Dieter's skill to bring it to light with a playable game. I suspect Polar does not have a great deal of tactical complexity, and therefore strategic complexity, although I admit I do not know the game well, and I may be wrong.

Urbino, on the other hand, is complex tactically and strategically. The Urbino board is restricted to 9x9, and instead of having uniform stones, the players have three kinds of pieces each, Houses, Palaces, and Towers; worth 1, 2, and 3 points, respectively. Palaces can never be placed adjacent to Palaces of either colour; similarly, Towers can never be placed adjacent to Towers of either colour. Urbino keeps the core idea of Polar, that a group can have no more than two sections; a player wins a group if his pieces are worth more points; a winning section

scores the total of its points; groups with one section do not score.

The biggest change from Polar, however, is the use of two new pieces, the Architects. Buildings can only be erected on spaces that have open sight-lines to both Architects, without intervening pieces. Each move consists optionally of repositioning one of the two Architects to any vacant space and then erecting a building on one of the spaces with sight-lines to both Architects. You must erect a building, and you must reposition an Architect in such a way that you can erect a building. If there is no way to reposition an Architect to erect a building, you must pass. If both players pass in succession, the game finishes, and the scores are calculated.

Restricting the available moves with the Architects adds considerable tactical complexity, and the tactics in turn suggest strategic options. In my view, Urbino is a much better game than Polar. The mechanism where one Architect is repositioned each move means that the two Architects seem to dance across the board in succeeding moves, with new buildings placed with open sight-lines to both.

The mechanism of the Architects is unusual. Dieter's game Fabrik (2017) uses something identical to the Architects, in an alignment game, but without the key idea of only one section of each colour in a group. Tumbleweed, also in this issue, uses sight-lines for placement, but it has nothing like the Architects of Urbino. Likewise, Mirador (2010) by Andrew Perkins and Network (1969) by Sid Sackson also use line-of-sight, though without an Architect mechanism.

Players new to a mechanism such as the Architects may find it difficult to plan ahead and analyze. After all, theoretically, an Architect can be positioned to any one of the empty squares on the board. The proviso that repositioning an Architect must leave an option to place a building restricts the number of choices. Nevertheless, at least in the beginning and middle game, a player typically has a large number of options for moving an Architect and placing a building. It is difficult to look several moves ahead and plan strategically, at least in the opening and middle game.

One way of approaching the Architects is to look at the options that each one will have after your move. Remember, only one Architect can be repositioned each move. Therefore, if you leave a position where both Architects point to a good next move for you, your opponent typically cannot sabotage both. Likewise, if you leave a position where neither Architect points to a good move for your opponent, typically he will not be able to construct a good move. Considerations such as these are the beginnings of analysis of Urbino positions and the basics of Urbino tactics: reposition the Architects to maximize your own options for good moves and minimize your opponent's options for good moves.

The requirement that only one Architect can move at a time is also the basis of Urbino strategy, at least as I understand the strategy so far. Once you are ahead in the game's scoring, it is a good idea to shut the game down so that it ends quickly with you ahead in the score, before your opponent can catch up. As buildings start to fill up the board, site-lines for the Architects become restricted, and the board becomes divided into separate areas, with few sight-lines between these areas. If both Architects are located in one of these restricted spaces, your opponent can only move one of them out—can only provide a good move for himself, potentially, with one of the two Architects and not both. There may be no options to move even one of the Architects out of a restricted area if there are few or no sight-lines out from the Architect that remains in the restricted area. Even if your opponent does manage to move one Architect out of the restricted area, you can just move it right back with your own next move! Eventually, the restricted area will fill up with no more move options, and the game will end.

The strategy of closing the game down when you are ahead accomplishes the tactical goal of restricting your opponent's options for good moves, while increasing your own—where your own good moves will include no move, if you want to close the game down! However, the tactical manoeuvring now serves a strategic goal.

Of course, it is still difficult to look very far ahead with Architect placement with any accuracy, particularly at the start of the game. The key with the shut-down strategy is to get ahead in the first place, and the opening is unpredictable. I commented to Dieter Stein, "The positioning of the Architects almost seems chaotic to me. A way to control the game is to shut it down, but I can't help thinking there's more flair in letting the Architects roam freely." He responded, "In the beginning there's much room, but soon you learn how to place them in a way that they play for you. Being able to move only one of them is crucial." Getting the Architects to "play for you" means, I think, increasing your own movement options while restricting your opponent's, in line with my discussion of the tactical possibilities of the Architects.

An opening strategy must aim at getting ahead in points, and then you can utilize the shut-down strategy. Therefore, I will tend to place my Towers, worth 3 points, early. An opponent's piece that connects to a Tower cannot be another Tower, and so if an opponent does connect to my lone Tower, I will have the scoring group. As soon as you are ahead, try to pull the Architects behind a wall of your own buildings, and close the game down! Of course, there may be quite other strategies—I hope there are!

Urbino as a game is complete. However, the Monuments variant introduces certain arrangements of buildings that have an increased score. I have not played enough of the Monuments variant to determine whether is substantially better. However, Dieter himself and some other experienced Urbino players I have encountered strongly recommend Monuments because it further increases the tactical and strategic options. In my limited experience, I think Monuments does this in a good way, without distorting the original Urbino. The tactical and strategic choices I have discussed are still present, but players have the option to aim for higher-scoring structures, or at least to threaten to achieve higher-scoring structures. Perhaps Monuments should become the default version for serious play of Urbino, but I am really not sure. The original game is more transparent than Monuments.

Urbino is a very interesting game that is much improved from Polar by restricting the movement options available. Setting aside the differences of scoring, piece types, and so on, the major innovation of Urbino is the Architects. At first thought, you might suppose that decreasing the number of moves that can be made on a turn would constrict the tactical and strategic choices. However, clearly this is not always the case, and Urbino is good example in this regard. Restricting the moves available in Urbino, by means of the Architects, opens up a whole a new world of tactical and strategic choices.

The topic of limiting the move options, and thereby transforming a game to make it better, is very interesting. The same drive to reduce move options is present in the two games by Larry Back, presented in this issue for the Unequal Board Spaces Game Design Competition, Tip-Top-Toe and Hox. Both games use different types of board spaces to limit the possible moves. In this way, Tip-Top-Toe becomes a very playable Super Tic-Tac-Toe game, whereas Hox transforms Hex, making of it a completely different game with tactics quite unlike those of Hex.

For Urbino, lastly, I should mention that the game is produced in a very beautiful edition by Gerhards Spiel und Design (https://www.spielewerkstatt.eu/de/), as shown in the header image. The experience of playing this game is greatly enhanced by the gorgeous hardwood pieces and board. Urbino is playable remotely at Dieter Stein's website (https://spielstein.com/), or at BoardGamePlay (https://boardgameplay.com/). ■

Talking about Games with Dieter Stein

by Rey Armenteros

[Questions by Rey Armenteros are italicized; responses from Dieter Stein are in plain text.]

This opportunity to interview Dieter Stein is a great pleasure for me. I have been playing your stacking trilogy, as well as other Dieter Stein games, for years. I have discussed the characteristics of your games with players over the years, making you into a household name (at least in my home). I would like to start with something close to me, and that is Abande. I've always fancied myself a decent Abande player until recently when I played the bot on spielstein.com. After a few decisive losses, it started to dawn on me that this game may have a deeper level of strategy than the light one I had assumed. What are the strategic options in Abande?

Thank you, it's a pleasure for me too. I feel honoured and let me first say, that I'm very grateful that I had the opportunity to live in a time where I could meet (in real life or online) so many people I could learn from and who influenced me or helped me to make my small contribution to the world of abstract games a reality.

Now, let's start with Abande. An Abande player mainly looks for the decisive spots and then tries to follow their spatial branching on the board, which is not easy to manage because these extension paths are based on a not-yet-established or often still-undecided mesh of connections, which only in later phases of the game may give you clarity. New players often believe Abande is light, as all is controlled and limited to a reasonable calculation up to the number of three. But that's only the tactical part, the other more strategic part is really difficult to foresee.

Are there key opening moves in Abande? I ask because I am also thinking about Attangle. In both games, I play the edges, but other players have shown me the advantages of playing the middle spaces. Are there better starting positions in either game?

Like in almost all games with a defined border—and especially those with some kind of connectivity mechanism—edges have a strong impact on tactics as well as strategy, apart from limiting the playing time and thus making it a game attractive for humans in the first place. Edges often mean restriction and in Abande that means lack of connections but also mobility. I myself usually start in the middle to allow for more options and see how the situation progresses. However in this game you are confronted with additional restrictive rules. So it can get tricky very quickly even in more centred positions.

Speaking of crucial centre positions: Peter Danzeglocke, an experienced Go player contacted me a year or so after I had published Attangle and pointed to the perhaps too strong middle position in that game. I had to agree and found a way to attenuate the game in this regard, and—while working on it—we also added a nice mechanism of taking back the supporting piece of a capture.

Apart from dominating the centre, in Attangle it is surely advantageous to build up clusters of pieces which are easier to defend and surely these structures are even stronger at the edges. So as many players who follow this strategy found out, in Attangle it's more about territory than it would seem at first glance.

When I play Abande, I have a pleasant experience, and the same can be said for Paletto. I never feel tense. When you create your games, do you think about the player's experience? Have you ever fine-tuned a game when facing player interaction that you felt was not ideal?

For me creating a game is a very intuitive thing and has very much to do with my own personal preferences and experiences. I think, first of all, as a designer you need to know your domain thoroughly. It's not only very helpful but actually a requirement to know many of the games (and concepts) already out there. Secondly, you should of course actually play them. Getting to know the rules mainly means to get the feel for a specific game and games in general, the mechanisms and—this is even more important—the emotions they induce. Just because play is an utterly human thing. By the way, when becoming more prolific you may even learn to feel a game by only reading the rules, as Christian Freeling would say. In a nutshell for me that is: know your domain and do your work for your audience—the players.

If a game works in the mathematical sense but fails on the emotional side, you may have a chance to rescue it by spotting and fixing one or two crucial points. But almost always, that's my experience, you had better archive the whole concept for some future enlightenment. So to finally answer your question: I rescued a previous "unentertaining" version of Tintas when the idea of a common pawn crossed my mind. In the earlier concept it was the last captured colour which determined the colour of the next capturing piece. It has been a concept quickly to grasp, but only after that small change was it suddenly fun, suddenly there was "play."

I know, one could measure this repair work in terms of game-theoretical parameters, but we should not overlook that it induces mitigated forms of greed and the sublime feeling of well-considered restraint in the players' minds. Never disregard the mental dimension of play!

Paletto feels so well-balanced. It's as if six colour pieces is the perfect distribution for the board of that size. How did Paletto come into being? Were you thinking of Nim?

No, no, it came from another direction. It started with the game system called "Nestortiles" by my friend Néstor Romeral Andrés. As I mentioned, my way is intuition, in some meta-sense "playing with play": I was fooling around with the pieces and one imposing thought was to reduce a large connected structure piece by piece without ever splitting the whole thing. Two players assumed and given differently coloured pieces, it was quickly obvious that a player may use any number of one certain colour selected each turn. That made the game partisan and so in the end, Paletto turned out to be an entangled variant of Nim. So, as often in creative processes, the succession of development steps appear kind of reversed.

Regarding numbers, it often occurs to me that succeeding designs have intrinsic dimensions which are actually playability parameters. This is a personal preference of mine: I like to emphasize numeric harmony in my games: Mixtour is "five," Paletto is "six," Fendo is "seven," Rincala is "eight," Urbino is "nine." This may sound too arcane, but I think these numbers and relations mirror and conclude the elegance and beauty of self-

contained games. They are pointers to the mathematical background as well as the mystical function of numbers and relations.

Mixtour

In Mixtour, you revisited some of the dynamics in your stacking trilogy. To me, there are notions of Accasta Pari in it. It feels slippery, because the attacks can suddenly change depending on an unexpected move. Did you work off of a game like Accasta or Abande and looked for possibilities, or was it more about trying something that you might have liked to see in the previous stacking games?

Mixtour owes its existence to the "Stacking Contest" encouraged by Daniel Shultz in the newsgroup rec.games.abstract in December 2010. When I was thinking about the stacking concept in general I had the idea to disregard the two "unwritten laws of stacking games," which are: First, the piece on top owns the whole stack, and second, towers have some kind of power presented through their height. This led me to Mixtour—actually very quickly. Playing around with a prototype it suddenly struck me to kind of reverse the movement of pieces. It was a matter of seconds, everything fell into place. Although it needed a small second thought regarding the final goal, it was an overwhelming moment.

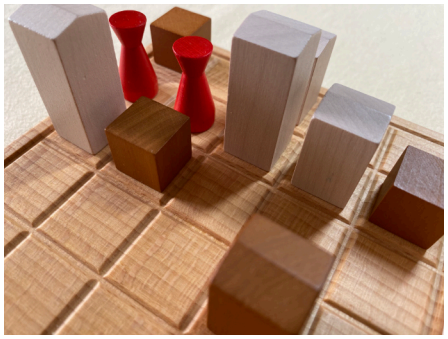
I am a novice at Mixtour, but I get the sense that it is a deeper game than the ones from the stacking trilogy. Do you agree? Are there levels of gameplay that might escape a novice?

Its depth is comparable to Abande or Attangle—that is, not so deep in general. But I think that's not the main point in this game. The thing is it's hard to see the move options as well as the impact of changes on target and origin spaces when splitting a tower. I haven't played with anyone yet who hasn't had trouble with this. It's so counter-intuitive and that's actually what makes it fun—at least to some. Sooner or later you will learn that crazy backward thinking but then you will still be confronted with sudden turnarounds and moves you never thought of before.

Mixtour and Urbino allows both players to move the same pieces. It opens up many more possibilities in player turns. Other games have done this. Which ones were you thinking about when creating these games?

The common pieces in Urbino have their roots in Tintas. When I worked on a three player variant for Tintas I experimented with two pieces which belonged in an alternating way to either of the two pairs of the player trio. I didn't succeed, but it opened up the possibility of intersection points when considering them as Chess Queens. The idea had to wait for half a year when I used it for Urbino's architects.

Urbino is such a wonderful game! The blocking aspect in Urbino goes beyond the conventional mode you see in a game such as Amazons, because it has to do with the positions of both Architects and the target space. As available areas get smaller, areas without either Architect can get locked out. For me, games of Amazon fizzle out, because at some point in the middle of the game, it is obvious who is going to win, which necessitates the losing player to resign. From my experience with Urbino, it has more of a climactic edge. How did you discover this dynamic? I can see traces of it in Attangle, but I don't remember seeing this before.



Urbino

Thank you very much. In the beginning there was a game I called "Polar," which implements the idea of piece groups that consist of a maximum of one block for each of the two players' pieces. The idea was already two years old and I just forgot to finalize and publish it.

Then I was working on a game which I wanted to have a kind of city building theme. It should definitely be called "Urbino" after the most beautiful Italian town with a not less astonishing history. Also, the name actually translates to "little town," the perfect name for my nascent game. It should also have some more complex, even "Euro game" style scoring mechanism.

I have visited Urbino many times and I have been to their "Festa dell'Aquilone," the annual festival of kites where the different districts of the town compete against each other. That way, I rediscovered Polar. The groups were the perfect match for Urbino's *quartieri*. Sticking to the subject I now discovered streets, open and private places. I continued in this style and finally added the Architects, who were unemployed since the work on three-player Tintas. They came to restrict the building of groups in a way that opened up a whole new field of tactical possibilities. So again, everything grew in a mixture of personal experiences and preferences along the path of game development, which luckily ended up in a deep and entertaining game.

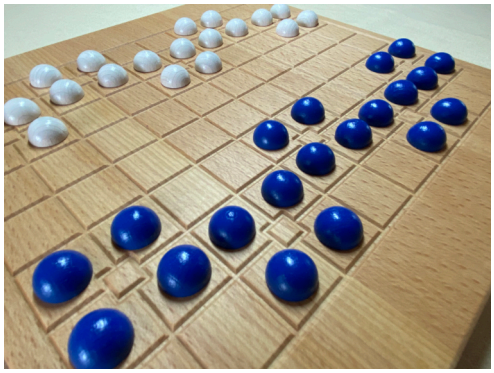
Here I finally have to mention Gerhards Spiel und Design, the publisher. Ludwig Gerhards, a genius when it comes to transforming game concepts into physical wooden objects once again did an enormous job with Urbino. The roofs of the palaces and towers have got that typical Mediterranean angle and we dressed the Architects like the great historical figure which is Federico da Montefeltro, the Duke of Urbino.

The way I have learned the division between tactics and strategy is that tactics is the analytical portion of assessing the situation. Strategy is not just the long term plan of where I would like to be after a certain number of moves, it is the gut feeling. When I play a game, I try to think about when in the game I have to switch from one type of thinking to the other. For example, I sometimes think Chess follows the arc of starting with both strategy and tactics and then finishing in mostly tactics. Is there an arc in Urbino? If so, how would you trace its path?

I think it's justified to say Urbino shows a very variable and therefore lasting playing experience. On the surface you will observe similar progress as in many other games like the number of possible moves steadily decreasing and tactics becoming more and more important over strategy. But the outcome of Urbino is often more undecided, because of the score goal and moreover, because of how the scores are actually achieved through majority. Investments can go to waste, there are chances to pocket a temporary winning score by isolating the Architects and there are the big surprises of a late unification or acquisition of large decisive groups.

Are there set strategies in Urbino? With an open board at the start, Urbino makes me wonder if the strategic choices come after several moves. Or is there an approach you can take right from the opening?

I'm sorry, I played a lot of Urbino in the last years and I think I made some progress, but I haven't found a certain strategy which seems to be valid for each and every game. Sometimes you will see players choosing a more strategic approach, sometimes you find yourself engaged in some tactical local battle in the very beginning of a match. It's certainly easier to unfold your own plan in later phases of the game.



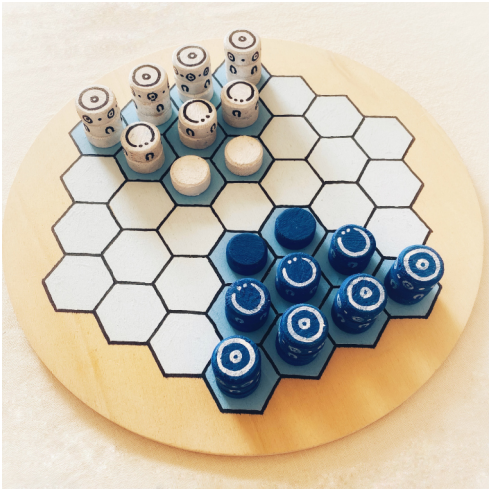
Ordo

Your article "Volo: Bird Flight in a Game" records the process of inventing a game. Thinking of Ordo, you realized that the Ordo moves were similar to those in flocks of birds, and so you took that spark to create a game about this phenomenon. Actually, your article is an invaluable document of the creative process in game design, and the game itself is a thematic revelation. I admire that this abstract game not only has a unique theme, but it shares a poetic view of it. I think it telling that theme was an important aspect of making this game. What are your thoughts on themes in games? Do you sometimes begin with the theme, or was Volo an exception?

I already mentioned that intuition takes a large part in my work. Although I'm well aware of the fact that games, especially combinatorial games, are pure mathematical objects, we should not forget that they also have a cultural, humanistic side—simply because, like books, they transport and induce emotions. So my way to work is often based on personal experiences which can be described as story-telling or following a theme. Such a motif can be carried out throughout the process and still made perceptible in the final work if it presents or emphasizes the sensational dimension—also in games which should normally be filed under "abstract." I see no problem with that. Of course, the situation is quite different when marketing people are tagging an arbitrary theme onto a game product in order to increase sales. It may work, but that's not exactly the same thing.

The creation of Volo leads me to the question of how did you start inventing games? I have read that you've been doing it since you were a child, when you were first forming Accasta.

Yes, it started when I was 10 years old. I began to alter the rules of the games we played in the family. These were mostly the simple dice games, but I also started to learn Chess and I played a lot with my uncle. Soon after that I began to develop a love for abstract games which appeared on the market in the 1970's. I still have a quite representative collection of game boxes from this era like "Orion," "Duell," or "Viaduct" to name a few rarities. As those minimalistic games were hard to vary I soon ended up in trying new ideas from the ground up. Accasta was my long-term project which saw lots of changes through the years. All of them were tiny failures and then successes from which I learned much that I know and use today.



Accasta

Which game designers have influenced you the most? This could include game design itself or game theory, or it could simply be game designers whose games you enjoy playing.

Sure, there are many who influenced me. Sometimes because of the way they explained their motivation for designing games, sometimes because they created designs that I loved to play and made me wonder how one can achieve such beautiful things which manage to absorb people's minds. I had a book called *Das große Krone Spielebuch*, which described about 150 games—all with hardly displaying any actual components, but that stimulated my desire to invent even more. I read Sid Sackson's book *A Gamut of Games*, played and—as I said—collected almost all the now classic abstracts. Later I had the pleasure to meet Reinhold Wittig, Michail Antonow, and Kris Burm. I now consider Fred Horn, Néstor Romeral Andrés and Cameron Browne as friends and soul mates who steadily influence me.

When I play Homeworlds or Epaminondas, I recognize a great range of creativity you are given by the game's rules. It empowers the player, and it offers moments when you can feel suddenly clever for something that you figured out and used effectively. When you play a game, does your inventor's cap come on, or are you immersed in the game? How is playing a game also a creative activity? Which games do you think lend a broad range of creativity to a player?

Like any other I'm normally totally absorbed by a good game. But at the end, especially when playing a game with my daughter who I often consult when it comes to my own designs, we are

talking about the overall experience and maybe some things and details we like or dislike. So, I leave the cap off while playing but cannot quite resist to grasp it afterwards. It's inevitable.

Games that lend creativity to players? Oh, that's how you define creativity. I myself link that term to an activity in a much more open space. Games in contrast are defined as small worlds with strict rules. You may describe a player as a creative actor, but there's certainly a substantial difference. And that's also a good thing! It's not about getting lost in possibilities, in fact it's the limitation which creates the game in the first place.

In classic games like Chess, we have inherited established strategies. I have wondered if and when contemporary games acquire those strategies, how they will alter the game experience. But I also wonder if contemporary game design does not really work in that sphere of specific strategies, since they are quite different from older games. Honestly, I have no idea, but it is something that I have thought about. Do you have any ideas about this or about differences between great modern games and their classic forebears?

It seems like an interesting question. Well, when we look at abstract games we will quickly either locate—even insignificant—design flaws or perfection, which in some sense can be equated with timelessness and that in turn lets the question come to nothing.

Many regard Go an ideal game. What is your ideal game?

I have to agree, there is no game like Go. Not only because of its most beautiful simplicity, which on the other hand opens up a manifold strategic world, but also because of the social and cultural dimension it created and still reflects. You can feel this when comparing it with another often named candidate for Abstract Zero which is Hex. Admittedly, it has a much shorter history, but, same as Go, it's also a quintessential game of unsurpassable purity with a straightforward goal, perhaps even more next to perfection as Go. But in my eyes it somehow falls short when it comes to telling a story.

Fendo

It seems that the world of abstract games (not including the institutions of Chess and Go) is a quiet community that does not make a gigantic marketplace impact. Will it always be like this? Is this good or bad? What is the future of abstract games?

When you look at the history of games you can easily go back 5,000 years from now. And these first concepts are already "abstracts" in the contemporary sense. Games are not only part of human history, they are—abstract games even more—a manifestation of humanity. Again, they may be mathematical entities, but their true purpose is "play," which belongs to a complete other reality, the reality of feeling and acting as a human being.

For me, marketing is mainly about the boxes and the presentation: Games should be presented in an appropriate form, like drinking wine out of elegant glasses rather than paper cups. But it's not about the very existence of a game. If it's in the world, it will live forever and interested people will get access to it sooner or later. If there's only a tiny community around a certain game it doesn't matter.

If you ask me about the future of (abstract) games, however, we'll certainly have to talk about artificial intelligence. The progress in this field is enormous and it seems that games count as the first victims in this development. I don't see that. Games won't disappear as long as there are still humans around. Look at what AlphaZero did to Go and recently Chess: it didn't kill these games at all, it just revealed new forms of play and made the game even more attractive to humans. After all, machines don't "play" in the strict sense of the word: Neither random moves nor the perfect rush through the decision tree of a game isn't play. As Cameron Browne has shown, already today it's perfectly possible to algorithmically create complete new games with feedback processes even to optimize the entertainment factor.

However, it will have a strong impact on game designers and may even question their work as a whole. I think Cameron saw this too and shied away from that. He started the incredibly extensive and long overdue research on the human culture of games with the Ludii project, which is fantastic.

My hope is that humanism will survive, it's not less than the ultimate challenge for mankind. We will have to find new ways—but choose carefully.

Do you play other types of games, like Euro games?

I have two kids, so—yes of course! They are grown-up now, but still we love to play simple and fun games like Stone Age or Dixit when we meet.

Besides games, do you have any other creative endeavours?

Yes, I compose music. I don't play an instrument though, it's computer music of the minimal repetitive kind.

Are there any upcoming projects you would like to talk about?

My main interest is currently not in new designs but more in caring for my old ones. I'm planning to further develop my website spielstein.com. I'm going to add more tactical and strategic insights and extend the online gaming platform. But maybe a new idea pops up in my head in the near future. As always, I cannot influence that. ■

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- SuperDuperGames: http://superdupergames.org
- Gerhards Spiel und Design: https://www.spielewerkstatt.eu/de/

Thank you very much to Rey Armenteros and Dieter Stein for this interesting interview. Beautiful wooden editions of most of Dieter Stein's games are available from Gerhards Spiel und Design. These are classic designs for classic games. Many of the games are playable remotely at Dieter's website, spielstein.com, either with human opponents or AI. Dieter's trilogy of stacking games, Abande, Accasta, and Attangle, as well as his game Ordo, are playable at SuperDuperGames. I review Urbino in this issue, and speak a bit about Accasta in the blurb for the cover page. ~ Ed.

Tumbleweed

I stack, I see, I conquer

by Polina Kameneva, Alek Erickson, and Mike Zapawa

Creating an abstract game is easy. Creating an abstract game worth playing is harder, and getting people to actually play it is harder still, at least for non-commercial projects. Tumbleweed, a recent design by Mike Zapawa, seems to have pulled off this trick, and thus merits a closer look. This article offers a surface-level glance at its rules, behaviour and community; its tactics and strategies will be discussed in the next issue.

Rules and game play

Tumbleweed is played on a hexagonal board, typically with eight cells per side. It is generally agreed that the smallest reasonably playable board size is five cells per side, and the largest is eleven.

On each turn, a player places a stack (a number of pieces sharing the same cell) of their own colour on the board. The number of pieces in a stack is determined by Tumbleweed's central mechanic: lines-of-sight. Each stack can "see" in all six cardinal directions, up to the nearest stack. Upon placement, the number of pieces in a stack equals the number of friendly stacks it can "see" at that moment. Importantly, one can only play within one's lines-of-sight.

In Figure 1, the newly placed White stack on D7 has two pieces because it can "see" two friendly stacks on D6 and I12. (Black-bordered stacks indicate the last move.)

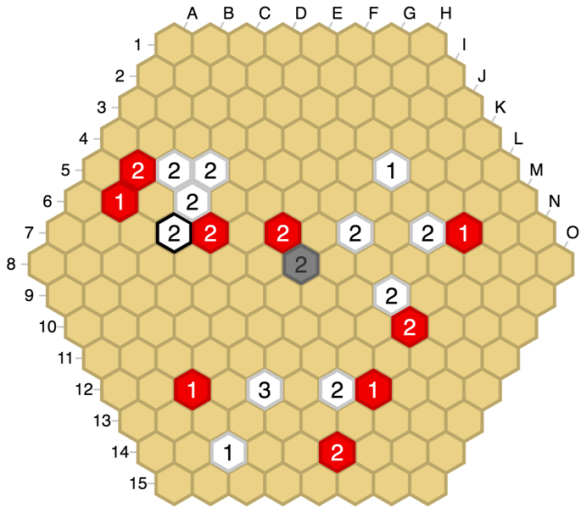


Figure 1: White places a 2 stack on D7.

One can "capture" an opponent's stack by replacement, as long as the resulting stack will be strictly larger. One can also "reinforce" one's own stacks in the same manner, again only if the resulting stack will be larger than the existing one.

In Figure 2, Red's 2-stack on F4 could "see" three enemies, so it was vulnerable. Red chose to reinforce, as shown in Figure 3: now, it cannot be captured, as the resulting stack wouldn't be strictly bigger. Reinforcement wastes tempo, but can be used as a solid defensive move, particularly in the endgames.

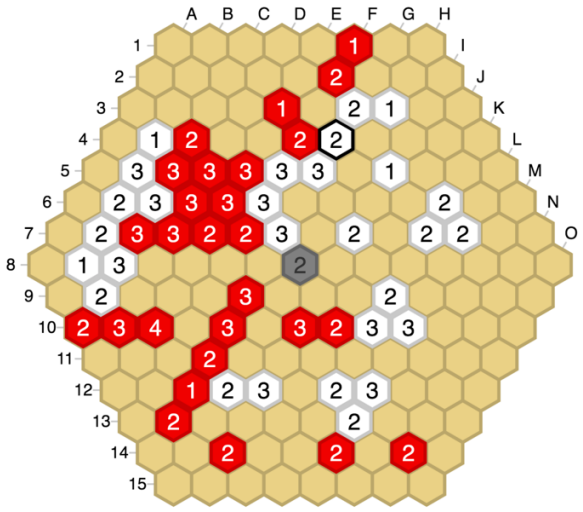


Figure 2: Red's 2-stack on F4 is vulnerable.

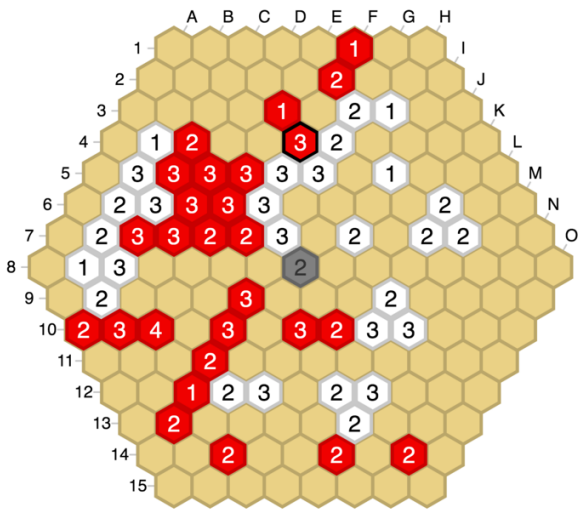


Figure 3: Red's 2-stack on F4 is replaced with a 3-stack.

The game begins with a brief setup phase, performed by the first player, the Host. First, a stack of two neutral pieces needs to be placed in the centre of the board, followed by freely placing two one-stacks: Red and White. The Guest then chooses whether to play first (with Red), or second (with White): this is a form of the

pie rule. The neutral stack does not contribute to any lines of sight and can be captured. The players are free to experiment with alternative setup protocols, but this one is recommended and supported in all computer implementations.

In Figure 4, Red's expansion is inhibited by the central two-stack, while White has a nice, open position.

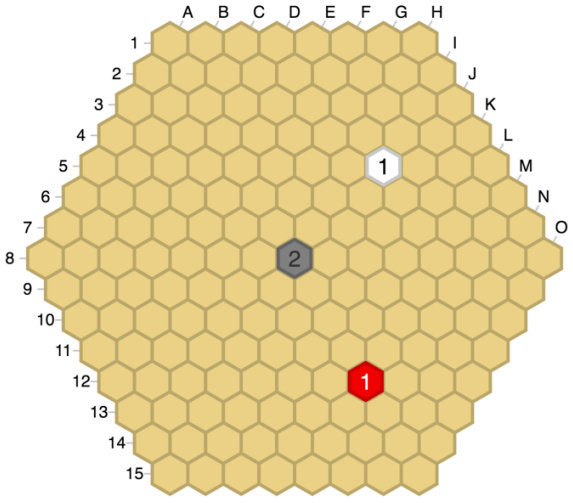


Figure 4: Example of opening placement

The goal of the game is to have more stacks on the board than your opponent. The game is theoretically finite, but playing it until its natural termination is unnecessary. At some point, the players will establish clear spheres of influence, allowing them to pass and score. Some computer implementations use heuristics to help with basic scoring. Tumbleweed cannot end in a draw.

How Tumbleweed feels to play

Long-range lines-of-sight make every opening move matter on a global scale. Since 1- and 2-stacks are generally very vulnerable to capturing, balancing territorial influence and safety is the crucial consideration in early game.

In Figure 5, White was able to establish influence in the upper part of the board, while Red is strong on the bottom and on the left. Red's presumptive territory is bigger, but White has multiple attack vectors: the fight is only beginning!

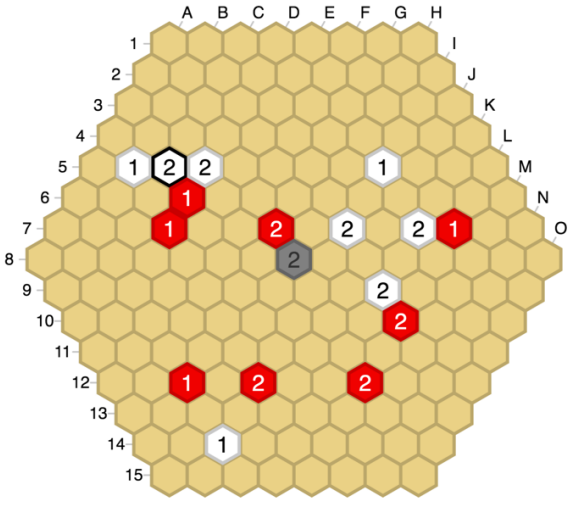


Figure 5: Example position after the opening

Once both players establish sound networks of stacks, a brutal and tactically challenging midgame ensues. Though the theory is far from settled, a lot of patterns have already been recognized. Among the most important considerations is making and breaking of walls: structures that can cut off enemy lines of sight, securing entire sectors of the board. As the game progresses, the board will inevitably become more crowded, and thus the moves will generally be more local in nature—though one must still be wary of "snipers" (late-stage captures that utilize long lines-of-sight and are thus harder to spot).

In Figure 6, E3 is a neat multi-purpose move. It attacks I7, and takes control of E5, preventing White from playing there and sealing off his upper wall. It also exerts much influence on line 3, allowing Red to potentially start building a wall.

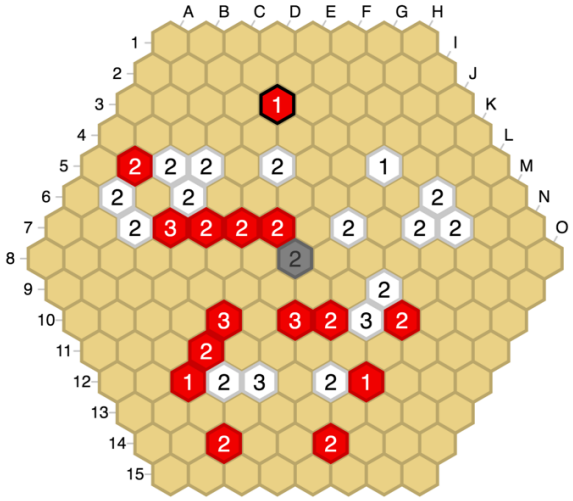


Figure 6: E3 is a strong move.

Towards the endgame, Tumbleweed becomes a series of life-and-death and territory-maximizing problems, before finally stabilizing into a set of regions defended by unbreakable walls. At this point, nothing is left to do; the players can pass and score.

Figure 7 shows the example game won by White 89:80. Either side has some invading moves left, but they would just be instantly captured. Figure 8 is a clarification of the scoring, where empty cells are highlighted with the colour of the player who owns them.

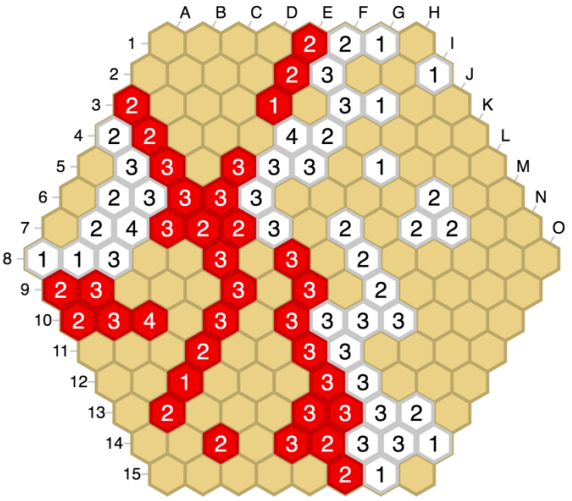


Figure 7: A game won by White 89:80

Some players have commented that Tumbleweed shares interesting concepts with Go, such as territory or life and death. To others, the line-of-sight placement is similar to the shooting action in Amazons. Clearly though, all these games have very different flavours and heuristics, and need not compete.

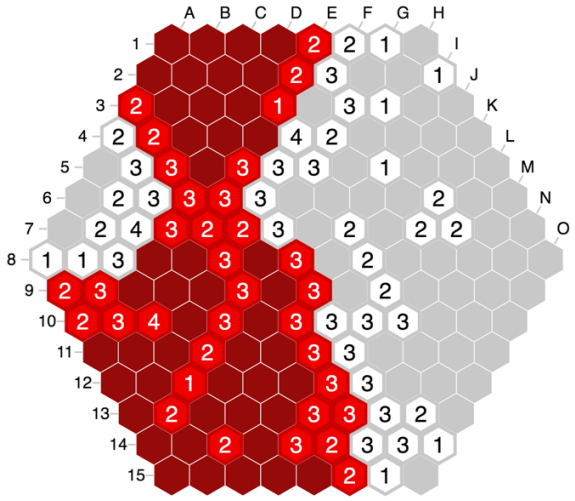


Figure 8: A clarification of the scoring

Where to play and the community

Mike Zapawa created Tumbleweed during a COVID-19 lockdown. Since meeting in person was impossible, it was primarily meant for online play: the first "boards" were drawn in PowerPoint and Paint. For smaller board sizes (5-7 cells per side), the game can be played with stackable tokens such as poker chips. For larger boards, the number of required tokens is excessive, and bulk dice have been proposed as an alternative.

Currently, the best place to enjoy the game is the Internet. Though only few months old, Tumbleweed has already amassed a small but committed community. It has become one of the most popular games at IG Game Center, and it is also playable on several other platforms, including Stephen Taverner's Ai Ai, Christian Freeling's MindSports, Zach Burnam's The Garden Gate, and Project Ludeme's Ludii; there is also an ongoing effort to implement it on Board Game Arena. Some of those offer an AI opponent, but as of today no program can play competently on the default size 8 board.

Tumbleweed has an active Discord server and a Facebook group. The community is generally very welcoming, with first players more than willing to play training matches against newcomers and share their secrets. Game theory is constantly being discussed and expanded upon. Ignazio Panades has regular Twitch streams of Tumbleweed games being played in real time and analysis of the past exciting games between experienced players. Anton Christenson made the interactive board and diagram editor used for the diagrams in this article.

Tumbleweed players are very passionate about the game, and go to some lengths to see it grow. Most notably, a tournament has been announced for April this year, with cash prizes offered to the best performing new players ($100 for the best one, $50 for the runner up, and $20 for a randomly selected participants). For details and submissions, one should contact Mike Zapawa. ■

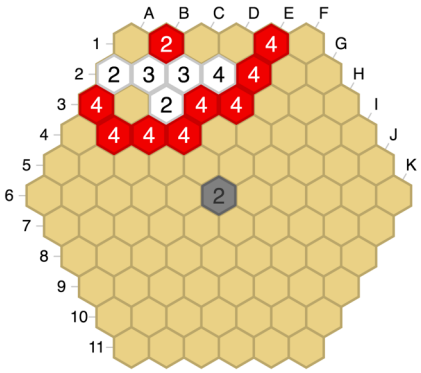
References

- IG Game Centre: http://www.iggamecenter.com
- Ai Ai: http://mrraow.com/index.php/aiai-home/
- Mindsports: https://mindsports.nl/index.php
- TheGarden Gate: https://skudpaisho.com
- Ludii: https://ludii.games
- Discord server: https://discord.com/invite/wu6Xdtt497
- Diagram editor: https://tumbleweed.4tc.xyz
- Mike Zapawa: mike.zapawa@gmail.com

Acknowledgement: This article uses images from Christenson–Panades match, played on 18/2/2021 on IG Game Center.

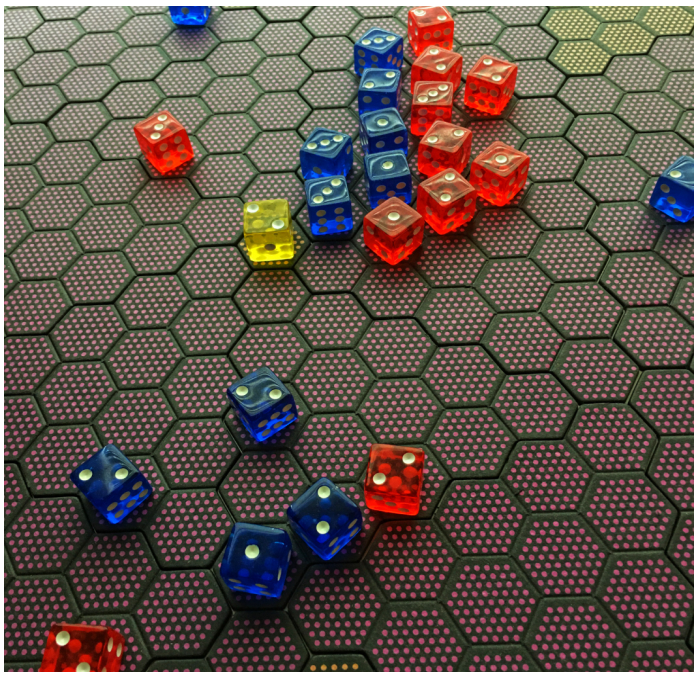
Endgame puzzle

In this endgame puzzle, Red is on the move and must minimize White's territory. Under optimal play, White should be left with only four stacks. There is a unique first move, and every response by White has a unique counter-play. See page 29 for the solution.



One amazing thing about Tumbleweed is that a ruleset that is so unlike that of Go should unfold in a manner that is so Go-like, in which opposing walls of pieces face off and enclose territories. A second amazing thing about Tumbleweed is the minimalist simplicity of the ruleset, reminding us of a game that is discovered rather than invented. Nevertheless, Tumbleweed does not have the black-and-white clarity of Go because piece strength depends on line-of-sight connections with other pieces. Lines of sight need to be counted and can be quite difficult to see on the larger boards.

Of course, it is always nice to play games with a physical set, which offers a better tactile and visual experience than online play. The question is, what kind of physical set would best suit Tumbleweed. Small stacks of pieces would, I think, be too fiddly. I use dice for pieces. So, for my own set, I use two sets of a hundred dice each in red and blue, and an additional yellow die to start in the centre. For the board, I use Ton van Der Valk's modular hex board that I have used for Keil and other hex-based games (https://www.etsy.com/ca/shop/Hexboard?ref=l2-about-shopname). With Ton's board I can construct a hex-hex board up to base 12, and of course base 11 is all that is needed for the largest game of Tumbleweed. The dice and the modular hex board make a great experience of actually playing Tumbleweed with a physical set. ~ Ed.



MATTOCK

...creating the labyrinth

by Drew Edwards

One, two, three — bright as gold can be!
Four, five, six — shovels, mattocks, picks!
We're the merry miner-boys,
Make the goblins hold their noise.

~ George MacDonald, The Princess and the Goblin

There is a simple and mysterious pleasure in creating a labyrinth, akin to the forking paths of a well-played game. Much of the joy we get from abstract games comes from these surprising turns: though players may have complete information as to the game's current state, its course through time is always a gratifying surprise.

In Mattock, the game's labyrinth is not only metaphorical. Named after the pickaxe-like mining tool, Mattock is played on a board of hexagonal spaces using both neutral tiles and players' stones. Think of the stones as miners, and the tiles as the corridors they dig through the rock.

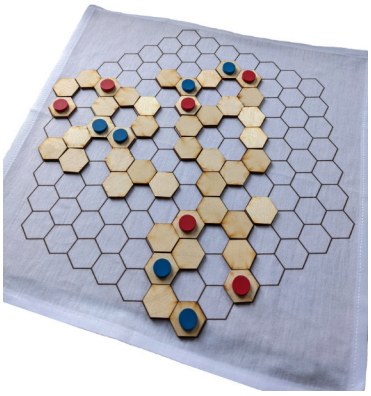
The central mechanic is that no tile may ever touch more than *three* other tiles: if you clear too much open space, the mine will collapse. This mechanic generates the forking paths within which the miners will move. Occupy choke points with your own miners to exclude your opponent from sections of the board. When your opponent has no space left to mine, you win.

Rules

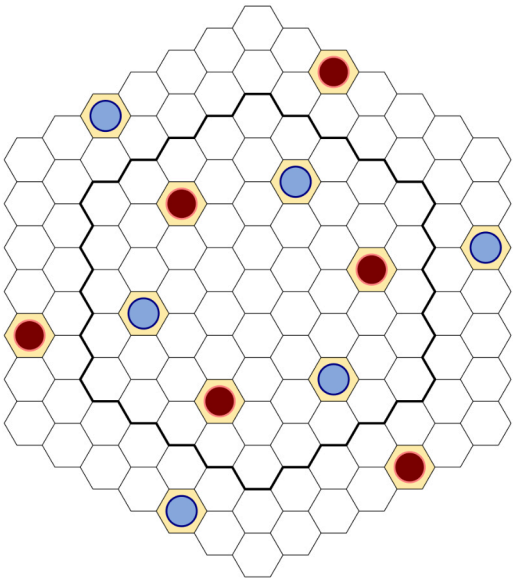
Materials: 1 board, 90 hexagonal tiles, 12 miners in 2 colours (6 each). For a short game, use the inner board: 45 tiles, and 6 miners (3 each).

Fixed Setup: Place one tile and one miner on each of the indicated spaces.

Freestyle Setup: Take turns placing one tile and one miner of your colour on a single board space. You may place anywhere, except next to already placed tiles/miners. The player who places last takes the first turn.



Mattock physical set



Mattock board sizes and fixed setup options

On your turn, take these three steps in order:

1. *Mine*

Place 1 tile on an open space next to, or connected by other tiles to, at least one of your miners. Opponent's miners block connections.

To prevent the mine from collapsing, the tile must not touch:

- More than three other tiles;
- A tile which already touches three other tiles.

If you have any miners which were removed on previous turns, place one of them on this tile. If you cannot Mine, you lose the game.

2. *Move*

You may choose to move any one of your miners to a tile connected to it. You do not have to move. You may move through your own miners, but opponent's miners block your path.

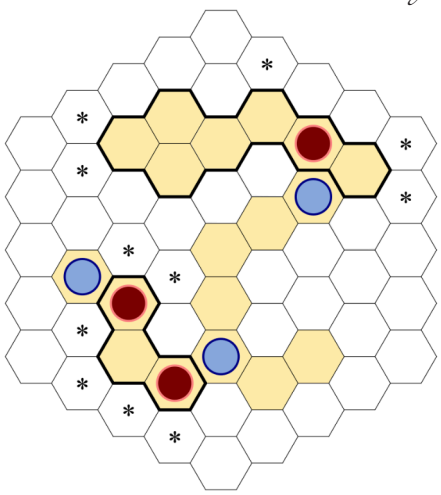
3. *Remove*

Remove all opponent miners that are now both:

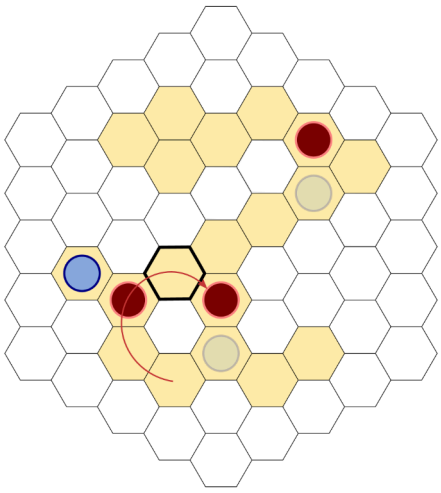
- Not connected to another opponent miner;
- Connected to two or more of your miners.

Your opponent takes the removed miner(s) and will place one back on the board on their turn.

See the two figures below for an example of mining, moving, and removing.



*Red's connections are highlighted in bold. Red's legal tile placements are indicated with a *.*



Red places the highlighted tile. moves 1 miner, and removes 2 blue miners. The final blue miner remains, as it connects to only 1 red miner.

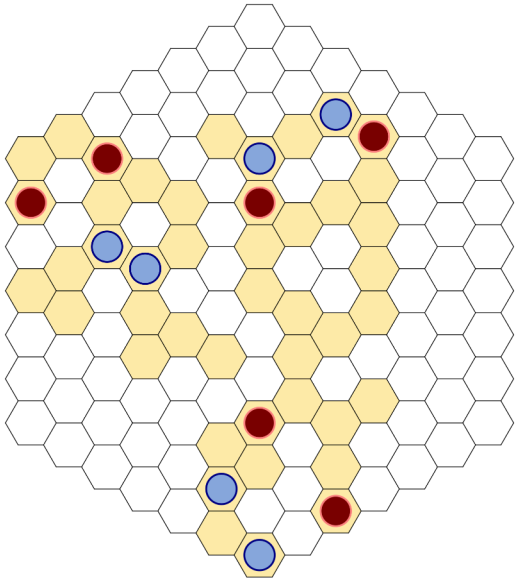
The Emergent Territorial Goal

Although it is not explicitly stated, a territorial goal emerges from the rules: to win, you must exclude your opponent from a large area of open spaces. Similar to Amazons, you want to end the game with plenty of empty space all to yourself. In practice, the empty spaces will usually be around the edges of the board, so the main strategic goal is to *create a defensible frontier that prevents your opponent's miners from connecting to open edge spaces*.

Unlike in many other territory and connection games, the tiles you mine are fundamentally neutral territory—they are only "yours" if you can block your opponent from connecting to them. So, everything you do must work towards blocking your opponent's access to areas of the board. There are two ways to block your opponent:

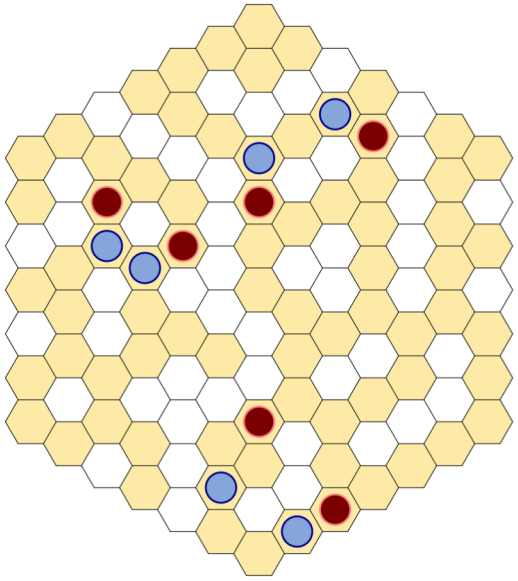
- Occupy a chokepoint with your miner
- Create a structure to which your opponent cannot connect

Below is an endgame position in which the players have each blocked off large portions of empty space that their opponent cannot reach: Red has a large area in the east, and Blue has two smaller areas in the north and the southwest. Both players occupy critical choke points with their miners. Elsewhere, the structures on the board prevent connection due to the central mechanic: no tile may touch more than three other tiles.



Example endgame position

Here is the final position, which resulted in a narrow win for Blue with no spaces left on the board. This game is notable because there are two separate labyrinths that cannot connect.

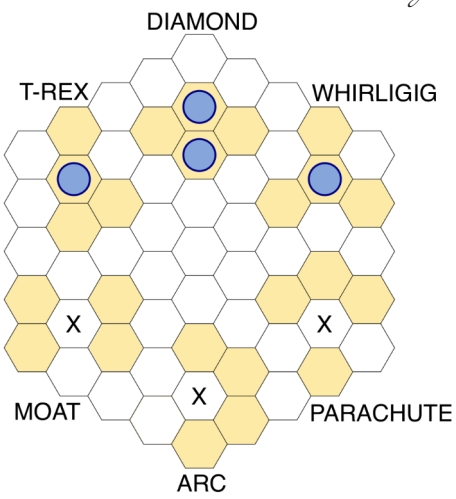


The final position

Basic structures

It may seem that mining would require players to tediously count adjacent tiles to ensure a legal move. But in practice, the mechanics allow only a few basic structures: once you can recognize them, there is no need to count. Thus, in addition to being a territory and connection game, Mattock is also a game about building *polyominoes*: shapes that link together to form the labyrinth. Recognizing and visualizing these shapes is key to playing effectively.

When an area of the board is fully mined so that no more tiles can be placed there, the tiles in that area will form the three shapes at the top of the board: *t-rex*, *diamond*, and *whirligig*. These four-tile structures are the only ways that a tile can touch three other tiles. Blue miners mark the tiles that already touch three other tiles—all open spaces next to these tiles are blocked.



A single tile can be a part of multiple structures, linking them together. You can see all of these basic shapes in the board positions below.

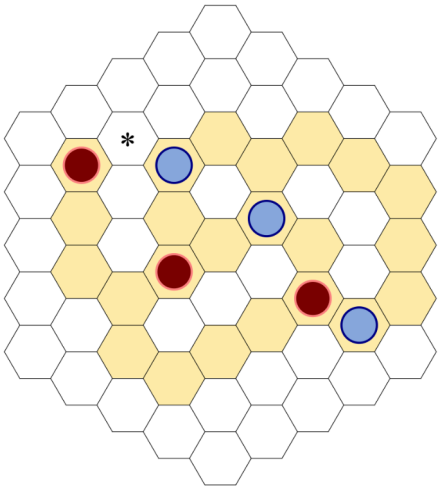
The *moat*, *arc*, and *parachute* shown at the bottom of the board are preliminary shapes composed of four tiles. Although they are not yet part of a completed structure, they also block spaces, as shown with an X.

This first set of tactics will show some ways to use these structures in play. I will use a small hex5 board, which yields a fast game of about 16-22 moves before the winner is apparent. The examples are all based on actual games that were played on a larger hex7 board.

T-rex

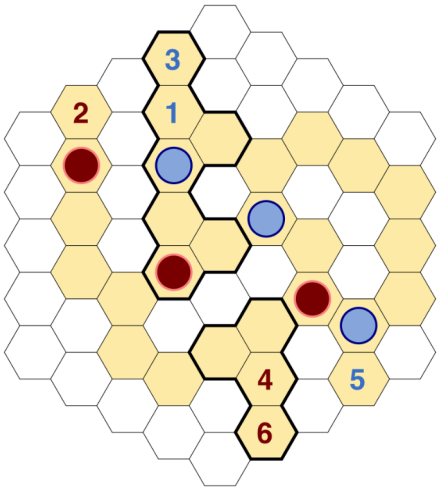
The T-rex is generally the most common shape on the board, since any group of three contiguous tiles can become a t-rex. T-rexes are useful for walling off portions of the board without using a miner, and otherwise blocking your opponent on the "flat" side of the t-rex while allowing you to expand on the other side. You can chain several t-rexes together to create a long, straight wall.

Below, it is Blue's turn. Red threatens to mine and move to the indicated space, which would allow Red access to the spaces in the north of the board. Blue cannot occupy that space with one of his own miners, because all three are already needed to occupy critical choke points—moving any of them would allow Red to invade and remove Blue's miners.



*Blue to move. Red threatens to move to *.*

The image below shows Blue's defence. The numbers show the sequence of mining that follows. Blue builds a t-rex with his first move. Red attempts to connect farther to the north, but Blue finishes the t-rex wall (highlighted in bold) on the third move to prevent Red's connection. (Note that Red cannot connect from the left, but Blue can still expand towards the right.) Red then apprehends an invasion threat from Blue in the southeast, and begins to build a defensive t-rex of her own on moves 4-6 (also highlighted in bold). The result is a win for Red, with 6 spaces left to mine, versus Blue's 4 spaces. Even though Blue was able to protect his territory, Red's advance still forced Blue to use open spaces needed to win the game.

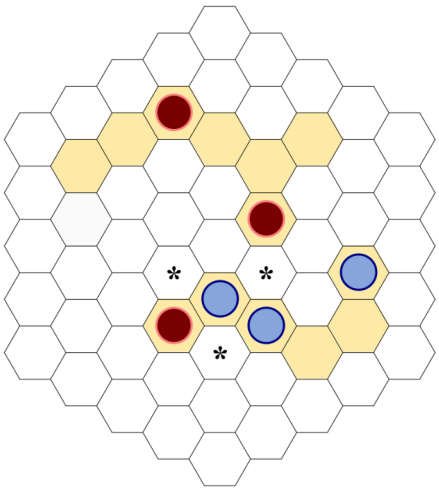


Blue defends.

Whirligig

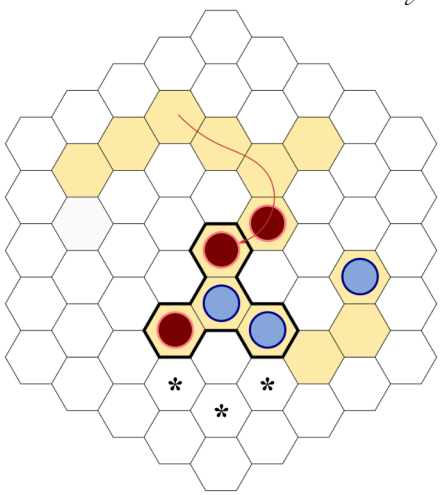
Occupying the centre of a whirligig can be an efficient placement for your miner, allowing you to control connections in three directions. However, whirligigs also serve less obvious tactical uses.

Below, it is Red's turn. Blue threatens to remove Red's miner by placing at any one of the three indicated spaces. Red will then be unable to replace her removed miner in the same space, effectively ceding control of the south to Blue.



*Red to move. Blue threatens the Red Miner by mining at any of the * spaces.*

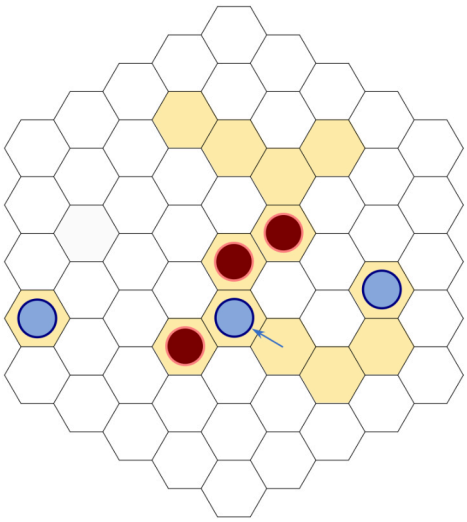
In the second diagram, Red blocks all three of these threatening spaces by building a whirligig. This is a specific instance of a general tactic: complete structures in a way that benefits you and frustrates your opponent.



Red creates a whirligig and blocks all threats.

Even though Blue occupies the centre of the whirligig (normally a favourable position), Blue will not be able to connect and remove Red's miner for three more turns—just enough time for Red to rescue the miner with a connection from the northwest.

This same configuration can also be used offensively. In this modified position, Blue creates a whirligig to prevent Red from connecting to an isolated miner—Red now cannot prevent removal.



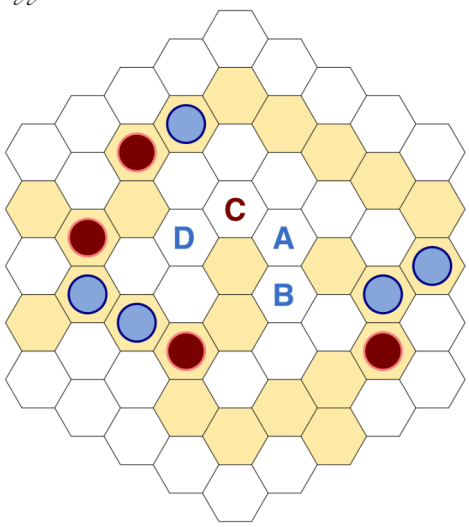
Blue creates a whirligig to isolate the Red Miner.

Diamond

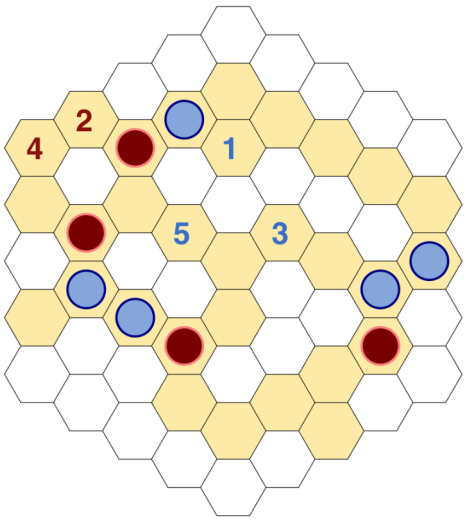
The diamond is a powerful shape, blocking three spaces on each side and allowing a variety of surprising tactics.

Firstly, diamonds allow simple blocks. The position below is taken from a game on a larger hex7 board; thus the increased number of miners. It is Blue's turn, threatening to connect across the centre of the board. Red thinks she is safe from the threat—if Blue plays at A or B, Red can respond at C to create a t-rex, blocking D. But Blue instead creates a diamond to the north, blocking C—Red cannot now prevent Blue's connection through the centre. To prevent Blue from removing both of her miners in the west, Red must either retreat or use previously protected spaces to connect her miners.

Secondly, a diamond can trap your opponent's miners if both sides are blocked by your own miners, or the edge of the board. Below, Blue's northern miner is trapped in a diamond—Red's miner blocks one side, and the edge of the board blocks the other. This Blue miner has no more spaces available to mine.

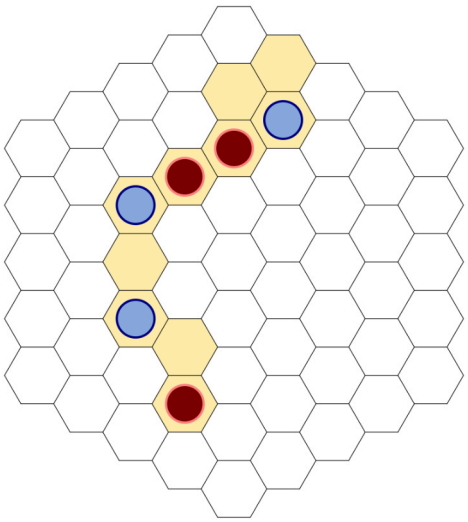


Red defence to one Blue attempt to connect across the centre

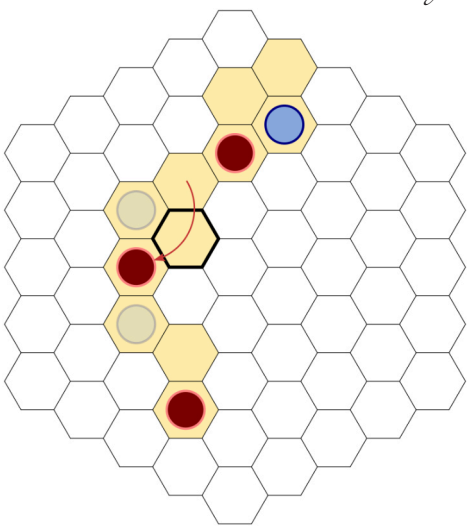


Blue diamond initiates successful connection across the centre.

Thirdly, you can use a diamond to bypass an enemy miner placed in a bend. On the next turn, below, Red uses this tactic to remove two Blue miners. Because Blue's remaining miner has no space to mine, Blue has now lost the game.



The Blue miner in the north is in a diamond trap.



Red uses a diamond to bypass an enemy miner.

Removal and protection from removal

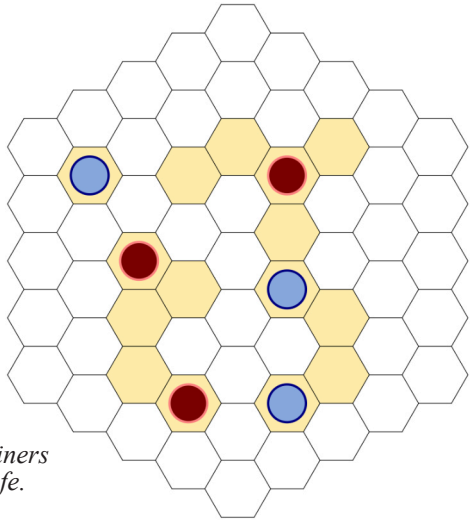
Removal is not a goal in itself, and does not always advance your interests—it serves to consolidate territory. In the example directly above, Red could have removed Blue's northern miner on a prior turn, but chose not to, instead leaving it trapped in the diamond. If Red had removed this miner earlier, it would have reinforced and strengthened Blue's other weak group. Whenever your opponent has two isolated miners, think carefully about which you will remove—your opponent will likely use the removed miner to reinforce the other isolated miner.

Although removal may sometimes enable you to reinforce a weak area, it is typically to be avoided. The simplest way to avoid removal is to connect your miners and create blocking structures to prevent your opponent from interposing her own miner between yours—this is the basic tactical challenge of the game. Note also that two adjacent like-coloured miners are immune from removal. Such a pair can move around the board while retaining this immunity by leapfrogging each other, one space at a time. This is an effective tactic for causing trouble behind enemy lines.

There are, however, some other ways to respond to an opponent's removal threat besides connecting your miners together.

Make removal unsafe

Below, Blue could remove Red's miners in several ways, but in every case Red could reply with her own removal or double removal.

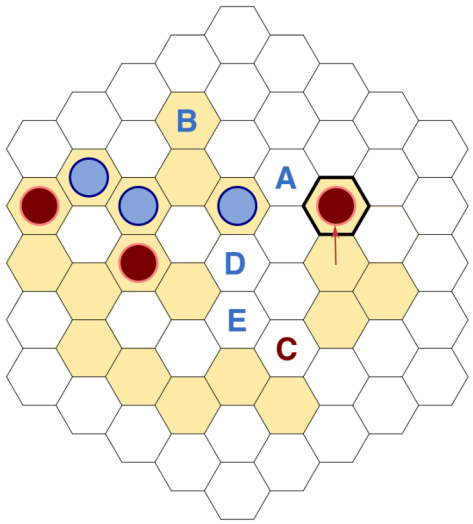


Red's miners are safe.

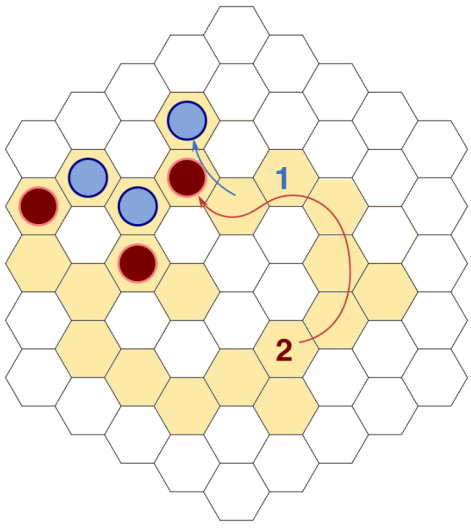
One space away

It is not always necessary to connect your miners to protect against removal. Because removal happens at the end of your opponent's turn, you may be able to replace your miner on the same tile, or even advance farther, if you have another group of miners one space away. It is often possible to gain a tempo and territory advantage by foregoing immediate connection.

Below, rather than connecting her isolated miner to her main group, Red has advanced north forming a strong t-rex structure and staking a claim to the eastern part of the board. Red need not fear removal if Blue mines at A. Blue would need to move his miner to B to remove Red's miner—since the removal happens at the end of Blue's turn, Red can replace her miner at C and advance farther into Blue's territory. The second figure shows this result. Blue could also mine at D, threatening to invade at E, but Red's move at C also creates a t-rex that blocks E, thus serving a double purpose.

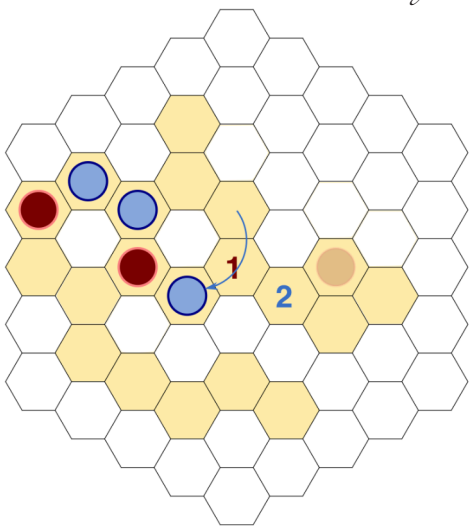


Red advances and leaves herself open to removal.



But Red can counter and gain territory.

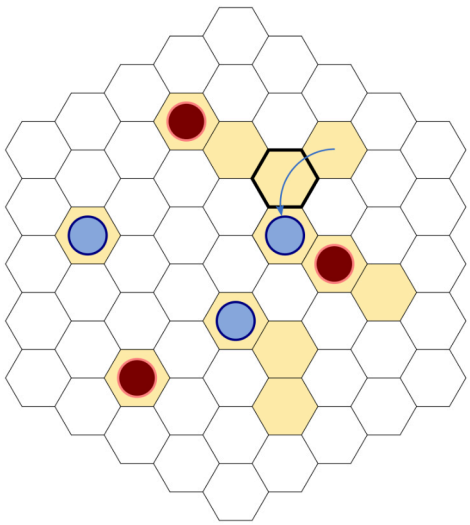
Leaving one open space does not guarantee reconnection after removal. Consider the modified line below, in which Red allows Blue to create a diamond, preventing Red from replacing her miner.



Instead of advancing north, Red mines at 1, and is removed after Blue creates a diamond.

Sacrifice

Occasionally, it is possible to gain an advantage by placing your own miner in a removal position. Since your miner will remain on its space until the end of your opponent's following turn, you can block your opponent from occupying a certain tile during that turn. Below, Blue sacrifices his own miner in order to occupy a strategically important tile that Red needed to occupy with her own miner on the following turn. This miner will be removed at the end of Red's next turn, but Blue can replace it because Blue has another miner one space away. Red must now spend two turns to connect its miners in the northeast to avoid removal, blocking critical spaces along the board's edge.

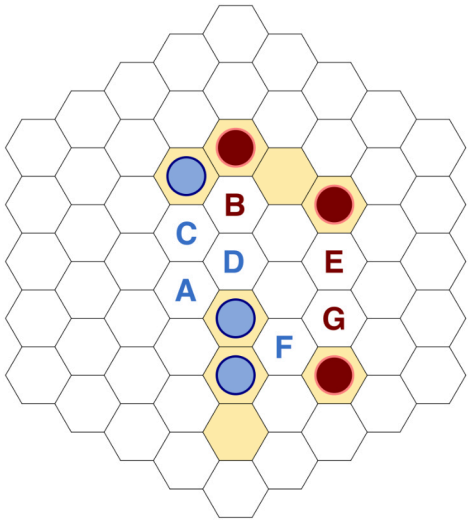


The Blue sacrifice can be replaced next turn, splitting the Red miners.

Combining tactics

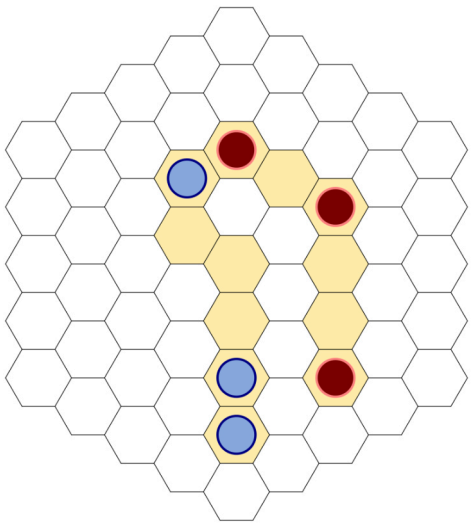
Below, players use the arc, parachute, and moat to rescue isolated miners in danger of removal. Assume it is Blue's turn, and Blue wishes to save his isolated miner. Blue cannot connect directly on this turn, but Blue can mine one space away from his isolated miner—close enough to replace the miner if it is removed on Red's next turn. Blue must, however, choose his space with care. If Blue mines at A, this allows Red to create a diamond at B, blocking C and preventing Blue from replacing his removed miner. Blue must therefore block B while simultaneously bringing his miners close enough for a rescue. Blue can mine at C to create an arc around B, or at D to create a parachute around B. In both cases, Red cannot create a structure which would prevent Blue from connecting C and D on its following turn.

Now assume it is Red's turn, and Red wants to protect her own isolated miner from removal. If Red mines at E, that will bring her miners one space away from connection. However, Blue could create a t-rex at F, blocking G and preventing Red from replacing her removed miner. Instead, Red should mine at G, which builds a moat around F, blocking Blue from mining there. Blue then cannot prevent Red from rescuing her miner.



Blue to move. Blue and Red must both mine carefully to save their isolated miners.

The figure below shows a position four moves later after both players have played defensively to protect their miners from removal. Note that even though there is no completed t-rex, whirligig, or diamond on the board, the parallel lines of tiles still block four spaces, preventing internal connections between these lines. This is an example of a longer moat, extending beyond the initial four-tile structure.

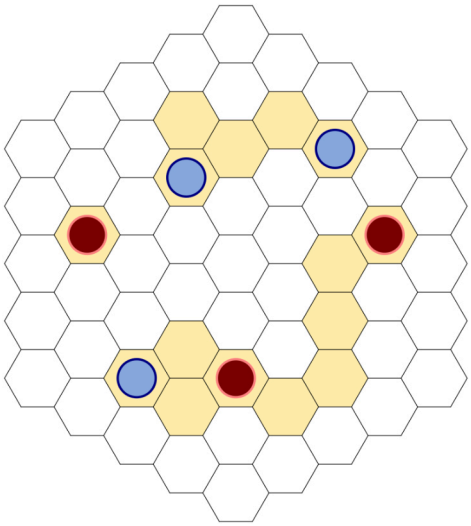


Both isolated miners are saved following the sequence D, G, C, E.

Considerations for a larger board: Miner groups
When playing on the larger hex7 board, each player has 6 miners rather than three. This enables each player to have two or three separate and defensible territories. Players must therefore consider how to distribute their miners. In the hex7 example at the start of the article, red has one group of four in the east and another group of two in the northwest; blue has three separate groups of two. A favourite strategy of mine is to protect my main territory with a group of four, and send a group of two into my opponent's territory to cause trouble and use up their open spaces.

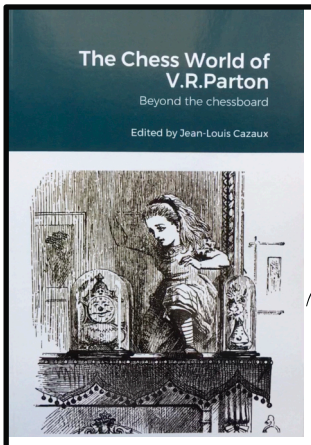
Of course, the distribution will depend on the particular circumstances of the game you are playing. Try to avoid situations in which you have too many miners in a small area, and too few in a large area. If this happens, try to link your groups so that you can redistribute your miners more efficiently. You can sometimes gain a strategic advantage if you prevent your opponent from linking their groups, especially if their miners are distributed inefficiently.

A final puzzle
On Red's next turn, prevent both the removal of Red's isolated miner in the west, and Blue's impending invasion in the northeast.



Puzzle: Red to move; save the Red miner in the west and prevent the Blue invasion in the east.
(Solution, page 25)

How to play Mattock
Mattock is a new game, so tactics and strategy are still evolving. Each game that I play surprises me. Here are some ways you can try it yourself:
- Print-and-play boards are available on BoardGameGeek (https://boardgamegeek.com/boardgame/320505/las-medulas), or you can play with a hex board of any size and shape that you have around the house. For miners, you can use stones or other game tokens. For tiles, pennies work well on the hex5 board, or you can simply colour in the spaces with a pencil.
- Mindsports (https://mindsports.nl/index.php/dagaz/1116-las-medulas-base5) hosts a version playable in your desktop or mobile browser. If you would like to challenge someone to a game, this is where to play.
- AiAi (http://mrraow.com/index.php/aiai-home/) by Stephen Tavener includes a version of Mattock with built-in AI (listed under the game's prior name, Las Médulas).
- BoardGameArena (https://boardgamearena.com/)



The Chess World of V. R. Parton

Reviewed by Kerry Handscomb

Chess players have tinkered with their game throughout the centuries. Japanese Shogi players have done the same, presumably driven by a similar inspiration as their Western counterparts, and resulting in the large family of Shogi variants. In the frontispiece to his *The Encyclopedia of Chess Variants*, David Pritchard writes, "Reflect that chess is but an imperfect variant of a game that was itself a variant of a germinal game whose origins lie somewhere in the darkness of time."

Vernon Rylands Parton was an English chess variant designer. He self-published nine booklets on chess variants between 1961 and 1974, the last published posthumously. Chess historian, Jean-Louis Cazaux, has gathered all of Parton's booklets into a single volume, *The Chess World of V. R. Parton.* Amazingly, Parton's booklets were almost entirely typewritten, without diagrams. The editor has greatly enhanced the usability and readability of the collection by adding diagrams throughout. Also included are Peter Parton's reminiscences about his uncle (initially published in *AG8*) and a small collection of letters between Parton and Dutch Chess problemist Meindert Niemeijer.

The nine small volumes by V. R. Parton demonstrate a huge range of inventiveness. Parton writes lucidly, as he must without diagrams, and his output is charming and original.

The first small volume, "Chess - Curiouser and Curiouser," uses several characters from Lewis Carroll's *Alice in Wonderland/Alice through the Looking Glass*. Here we find the Dodo's Chess in which checks or self-checks are not permitted, and the game is a race to reach the opposite side of the board with your King. Here also is Rettah ("Hatter," as in The Mad Hatter, spelt backwards). The Rettah King, or just Rettah, has the combined powers of Rook, Bishop, and Knight, but the special additional rule is that when one or more enemy pieces are attacking the Rettah, the Rettah must capture one of theme The Rettah is an implacable counter-puncher, sometimes to his own detriment. Partonici is a system of capture, instead of the replacement capture of Chess, which logically extends the custodial capture of Tablut. The most frequently played of Parton's games, Alice Chess (*AG8*, *AG9*, and *AG11*), is also included in the first booklet. There is much, much more.

The ideas multiply with Carrollian charm through the other eight volumes, sometimes straying far from the Chess of FIDE. Parton nevertheless stays anchored in his starting point, Chess.

Jean-Louis Cazaux has performed a great service for the abstract games world by putting together these collected chessological works of Vernon Rylands Parton. The entire output of this brilliantly original game-designer is now available to everyone. I highly recommend this book. ■

The Chess World of V. R. Parton: Beyond the chessboard (2021), edited by Jean-Louis Cazaux and published by Pionissimo of Toulouse, France, is available on lulu.com.

A game by Ty Bomba:
Boom & Zoom

by David Ploog

I am going to introduce a game that is not brand-new but still just a few years old, and which feels very fresh to me: Boom & Zoom by Ty Bomba. Before explaining the rules and talking a bit about how to play, I will mention the man behind it.

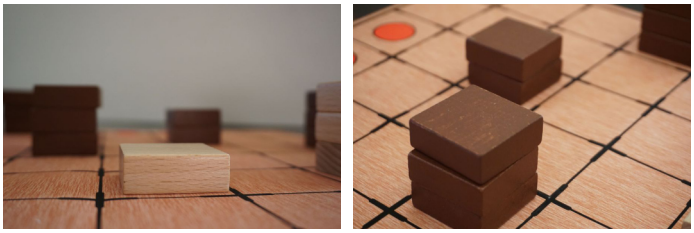
Ty Bomba is a famous board game designer for conflict simulations. He is a US Air Force and US Army veteran, and BoardGameGeek lists more than a hundred titles to his name. Some of his titles are Proud Monster: The Barbarossa Campaign, Drive on Stalingrad, and Nato, Nukes, & Nazis, telling you upfront what to expect. Inside the wargaming genre, Ty's titles are on the larger end: for example, his Barbarossa design comes with almost a thousand counters.

Detail of an ongoing Barbarossa game

Despite—or, who knows, because of this background—in 2012 Ty Bomba came out with the abstract title I am going to discuss. Thus Boom & Zoom was a radical departure, with conflict resolution tables, panzer groups, and morale boosts being as absent as chance elements or hidden information.

The original 2012 publication by Victory Point Games is kind of a missing link, in that it contains traces of Ty's native genre, such as terrain markers, modular boards and missions with different setups or goals. In fact, its counters were cardboard chits typical of the wargaming genre.

The impressive 2018 re-issue by Hollandspiele does away with all of that, restricting the game to a playing mat and massive wooden 40 mm × 40 mm blocks for counters. According to the publisher, this version implements the designer's original vision and its rules are given below. In fact, in a forum posting Ty Bomba writes, "I consider this my best-ever design."



Hollandspiele second edition of Boom & Zoom (2018)

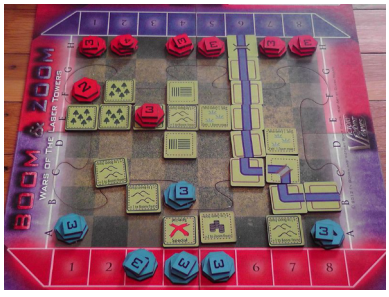
Rules

The game is played on an 8 × 8 board, with 12 stackable black counters and 12 stackable white counters. Initially, each side places four stacks of height 3 on the four central squares of the home row, as shown at the top of the next page.

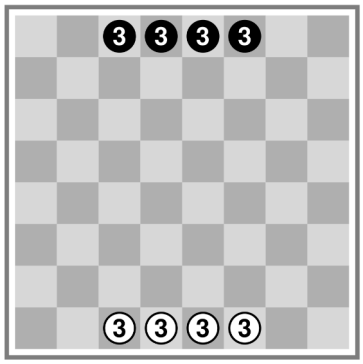
During a turn, a player must carry out one of these actions with their stack:

Zoom (movement): The stack is moved in a straight line, orthogonally or diagonally, over free squares. The movement distance is capped by the stack's height. It is allowed to move beyond the opposing base row.

Boom (capture): If a square the stack could otherwise move to is occupied by an opposing piece, one counter of the opposing stack is removed.



Original Victory Point games edition of Boom & Zoom (2012)

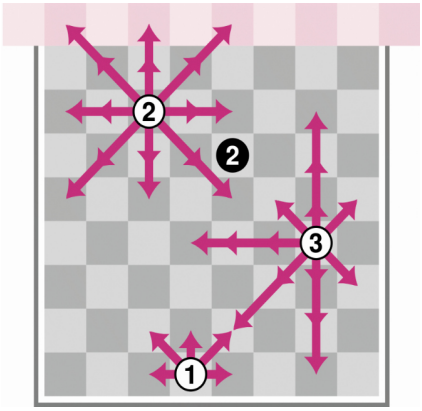


Opening position

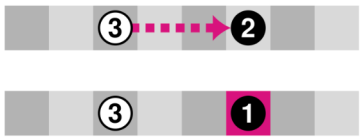
A stack may move beyond the opposing base row—imagine a virtual row extending the board on each side, and each virtual row is only accessible to pieces starting at the opposite end. Stacks moving there leave the board and are scored, where each counter is a point.

The game ends when a turn removes the last piece of a player from the board. The winner is the player with most points; draws by equal score are possible.

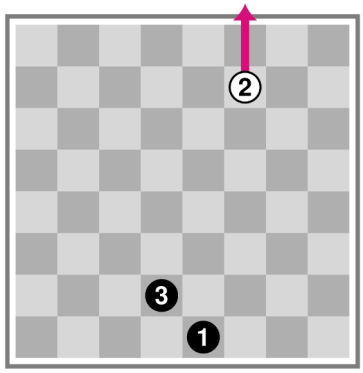
Remarks and diagrams explaining the rules



Zoom—movement: All possible white moves



*Boom—capture: White (top) can remove one counter from the **2** because the **3** can reach the target's square, leaving a **1** (bottom).*



A game ends if all board pieces have the same colour.

A piece moving beyond the opponent's home row is removed and scores one point for each counter. A game can end by one of two actions: a player may move their last piece off the board, or a player may shoot the last remaining opposing piece (then necessarily a single counter). If this happens, the player with the higher score wins.

Comments on the design

Before talking about how to play, I am going to analyze the design of Boom & Zoom a little.

First, the win condition: It is a scoring game, and the score is made from pieces crossing the board. In general, positional win conditions can be turned into score-based ones. For example, Ea Ea, the inventor of the connection game Y later delivered Star (1983) and ⁎Star (1999), both of which are point-scoring games with certain connections giving points.

Likewise, one can award points for patterns. For example, Olix (Reiner Knizia, 1994) has four valid patterns yielding points, and Yinsh (2003, Kris Burm) can be seen as an alignment-scoring game where players aim to achieve a score of 3 first. Tintas (Dieter Stein, 2016) is a majority-scoring game and MeM (Anatol Holt, 1968) scores for shape–colour matches.

The goal of a crossing game is being the first player to reach a certain area of the board, most often the opponent's home row, sometimes a corner. Examples are Camelot (George Parker, 1932), Epaminondas (Robert Abbott, 1975), Breakthrough (Dan Troyka, 2001) and Murus Gallicus (Phil Leduc, 2009). This win condition leads to race-like matches, and is generally by itself sufficient to create positive games.

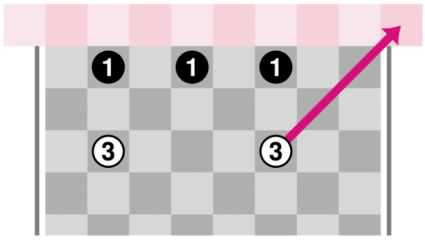
Boom & Zoom takes this crossing goal and turns it into a score. What is exciting about this conversion is the end condition: the rules of any point-scoring need to define an end condition. Typical choices include the following: a full board; a player being unable to move; a certain number of moves played; a fixed number of points reached. In Boom & Zoom, a match ends when all counters of one side are off the board (i.e., captured or scored). This can be seen as a case of one player being unable to move; the fun thing is that this end condition sets up a clock making the game work. By the way, another nice game crossing-scoring game I can recommend is 27 (Laurent Escoffier, 2017), which is played on a line.

Second, Boom & Zoom employs line-of-sight capture. This is a popular mechanism, for movement as well as for capture. A few design choices make capture work particularly well in this game: the height of a stack affects both movement and capture range; capture is partial (a single counter), leading to differentiated pieces and granularity in scores. This also means that scores are more granular than the four starting pieces on the board might suggest.

Third, the game state is easy to read even though making a good move can be tricky, as we expect and demand from our games. In other words, Boom & Zoom has good board evaluation clarity, allowing players to make quick and informed guesses about which side is leading.

Like most abstract board games, Boom & Zoom is highly scalable. As usual, the board dimensions can be altered, as can the starting positions. Moreover, the stack limits may be changed. In fact, the first edition incorporated variants along these lines in its rules. I like the choices made by the designer for the second edition: the core mechanism works very well, and the game can be played with a standard Checkers set to boot!

Below is a clarification about bearing off of pieces: the left **3** piece cannot bear off in the position shown here but the right **3** piece can bear off. This is because the goal zones are ten virtual squares on each player's side, allowing diagonal escape through the corners.



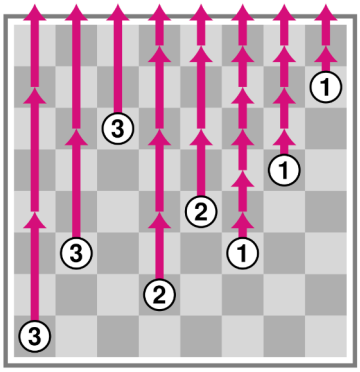
The right white piece can bear off.

Two fundamental heuristics
The executive summary of elementary Boom & Zoom play is encapsulated in the following two tenets, and I will proceed to explain why they hold true:

- Attack the opponent's most backwards pieces and try to get them to height 1;
- Move your most backwards pieces forward.

Clearly, this is the beginning of the story and just a first glimpse of what is going on. These heuristics should, however, allow you to beat Ai Ai's implementation of the game without too much trouble.

The clock
A cool feature of Boom & Zoom is the built-in clock. Because the game ends at once as soon as the last piece of one side disappears (either by getting shot or by moving off the board), for any given position there are two timers: the white timer counts the minimal number of moves to move all white pieces off the board; likewise, the black timer counts the minimal number of moves to move all black pieces off the board. The diagram below shows the number of moves required to bear off the white pieces.



White timer: How many moves it takes White to bear off

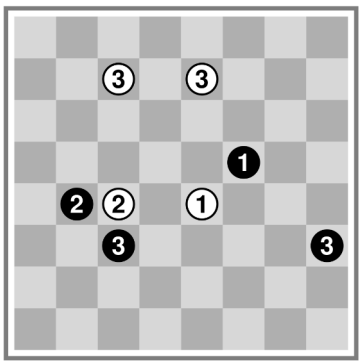
The following table shows the minimal number of turns for a white piece to bear off, assuming an otherwise empty board, where row 1 is the White home row:

Row:	1	2	3	4	5	6	7	8
3-stack	3	3	2	2	2	1	1	1
2-stack	4	4	3	3	2	2	1	1
1-stack	8	7	6	5	4	3	2	1

In particular, each 3-stack on its starting position needs three turns to leave the board if the opponent does not intervene. In an actual position, it is easy to count the real timer value, taking into account delays when the shortest path for a piece is blocked.

Clock awareness is crucial. You want to decrease your timer, which you achieve by moving forward. And you want to increase your opponent's timer, which is most efficiently achieved by shooting at the back stacks and by reducing an opposing stack to a singleton. Thus, it is often a mistake to remove a stack completely, as this reduces the opponent's timer and puts more pressure on yourself. In Boom & Zoom, do not shoot to kill. Rather shoot to reduce the opposing stacks to singletons, and let them limp painfully across the battlefield!

Looking at a game position
In this position shown here, both players have nine counters on the board and timers are 10 for White, 9 for Black. It is White's turn.



White's turn to move

Some options White might contemplate:

1. Move the faster, backwards piece forward, thereby protecting it.
2. Shoot and create a black singleton.
3. Shoot at the most backwards black piece.
4. Remove a black piece entirely.

The diagrams on the next page show the effects of each option on counters and timers.

Option 4 is a major blunder—it goes against the basic heuristic! Option 1 is too peaceful: it does not change the game into White's favour, and likely leads to a draw. The two captures are White's best bets. Of these, going for the singleton in Option 2 produces the better outcome, a gain of one additional tick on the timer.

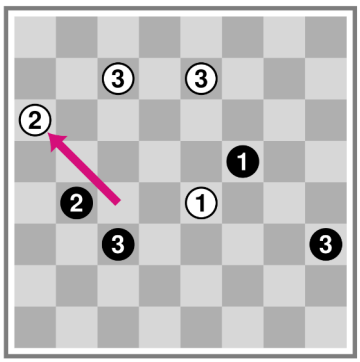
The shootout asymmetry
Because pieces can attack each other at ranges limited by height, it can be crucial who shoots first. Consider the following position and assume neither piece is attacked from elsewhere.

Either stack can attack the other.

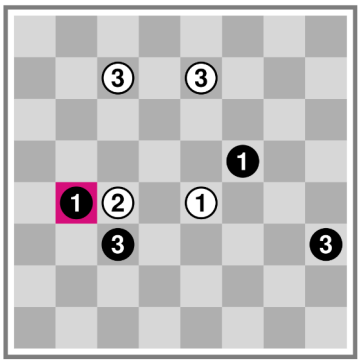
Series of moves if White shoots first

Series of moves if Black shoots first

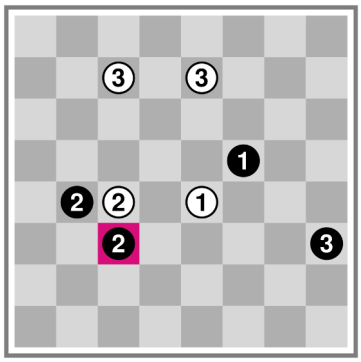
Whoever goes second in the diagrams at the bottom of the previous page is at risk of suffering a singleton! As a rule of thumb, stay clear from moving into range of a shoot-out unless there is a good reason.



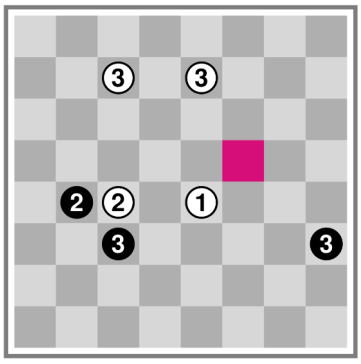
1. Timers 9:9, counters 9:9



2. Timers 10:11, counters 9:8



3. Timers 10:10, counters 9:8

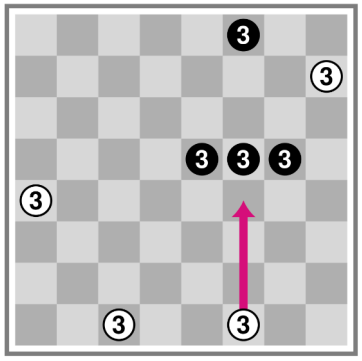


4. Timers 10:5, counters 9:8

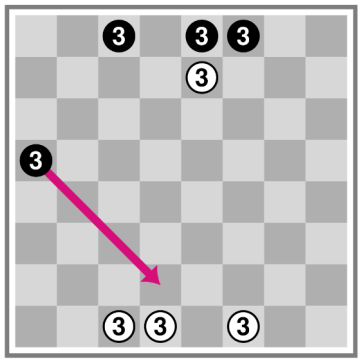
Attacking heuristics

As discussed before, reducing a stack—but not removing it!—has the immediate benefit of slowing down the opponent. Moreover, usually a little less important, each capture reduces the opponent's potential score by one. But even better, captures are often played with the tempo because the opponent will reply by shooting back. This holds especially when reducing a triple stack: the opponent risks a bad singleton, but if moving away, the player got away with the tempo and material gain.

Below, the first diagram shows a triple attack, which enables at least two captures— thus try to avoid clusters of pieces prone to multiple attacks. The second diagram shows a counter-attack: it is often a good idea to answer in the same way rather than replying meekly. This is in fact a meta-heuristic applicable to many board games.



Triple attack!



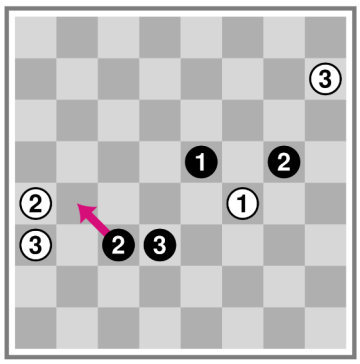
Counter attack

Backwards movement

It can happen that a backwards move is correct! In the position shown below, White has a material advantage of 9:8 counters while timers are equal at 11:11. It is Black's turn, but starting the race loses immediately because Black cannot avoid the piece on g5 becoming a singleton. Black will also lose by starting an exchange with c3:a3; after a3:c3, c3:a3, f4:g5, White has material 1 + 2 + 1 + 3 = 7 against Black's 2 + 2 + 1 + 1 = 6 and still has timer equality of 14:14.

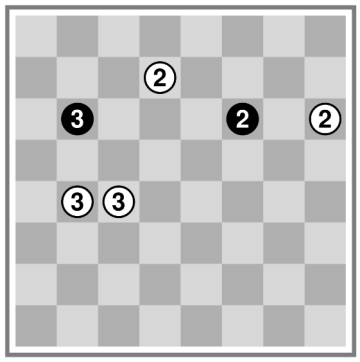
In this position, the indicated backwards move c3-b4 is strong because White cannot avoid losing at least two counters. If White flees with the 2-stack, a4-c6, then b4:a3 follows, leading to a singleton either on a3 or on a5. But if White instead stays put and captures a4:b4, Black follows suit and White loses even more tempo.

Note how the backwards move is both a pin and a fork: it asphyxiates the most backwards white piece and at the same time attacks two pieces. Such moves are not available very often, but the position shows the special properties of the edge. Does this also work with the black 3-stack and 2-stack interchanged?

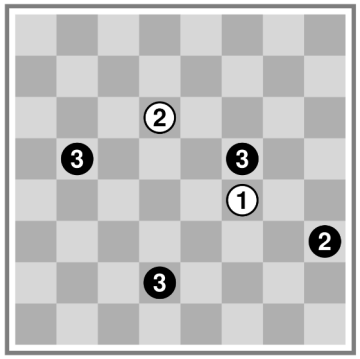


Backwards movement needed

Two problems: White to play!
Here are two problems, I hope you find them interesting. They are supposed to hint at some of the depth you will experience when giving this game a shot. The captions for each diagram show the current scores. The solutions are on page 29.



Problem 1: White 6, Black 0



Problem 2: White 0, Black 5

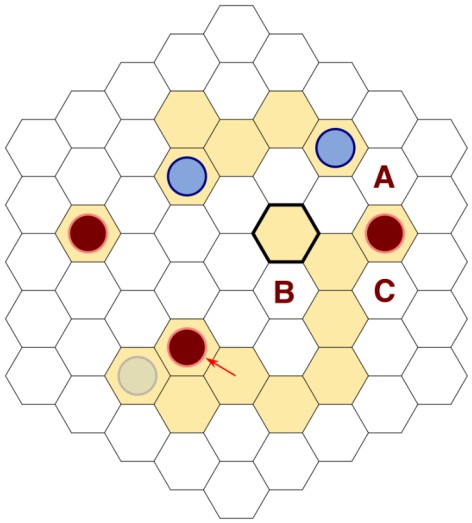
For me, Boom & Zoom was an unexpected gem, dug up while looking into the vast game library Ai Ai offers. When I tried it, I had just the rules and after getting trashed by the program for several rounds, I started wondering what was going on. Only when preparing this text on the game did I stumble upon the exciting backstory of its designer. The game is as abstract as they come, but still you can feel the wargaming flair, if you want to. To me, Boom & Zoom distils tank warfare into the confinements of the chessboard.

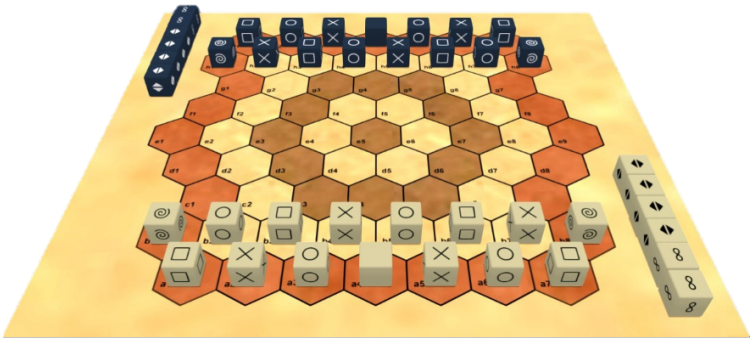
With all this talk about tanks, and Ty Bomba's œuvre dealing largely with WW2 campaigns, I want to finish this piece with a picture of Red Army T34/76 tanks in 1945 in Berlin. I was born and raised in East Berlin, and I am well aware of the human cost to the Soviet peoples in these five dark years. All talk and games about alternative realities notwithstanding, I am extremely grateful this conflict ended the way it did. ■

Unlike almost all other games in this issue, Boom & Zoom can be played with nothing more than a checkers set, something that probably every gamer has. The Boom & Zoom article is another of the pieces written by David Ploog for his forthcoming book and adapted for Abstract Games*. For* AG17*, David provided "Goals in Abstract Games: Proposing a new classification"; for* AG18*, "Stories and Themes for Boardgames" and an interview with Christian Freeling; for* AG19*, "The Movement Protocol of Symple"; and for* AG20*, an interview with Stephen Tavener. The publication of David's book will be groundbreaking, a significant event for all abstract gamers. We're happy and grateful to provide some teasers from this book in* Abstract Games*. The author would like to thank Tom Hayes for a rule clarification. ~ Ed.*

Mattock Puzzle Solution from page 20

Red creates a whirligig Red creates a whirligig in the northeast, and removes Blue's miner in the southwest. Red also could have created an arc, t-rex, or diamond at A, B, or C to prevent Blue's invasion in the northeast—though a diamond would have blocked protected spaces that Red needs in the endgame. Because Blue must replace his removed miner, connecting to Red's isolated miner on the next turn will cause Blue to have two adjacent miners. Blue must move both of these miners to provide a clear path from Red's isolated miner to two of his own miners, and needs two turns to do so. This gives Red another turn to mine in the west, bringing her isolated miner one space away from connection to the main group. Note also that if Blue connects to Red's isolated miner, it will create a t-rex that blocks his own ability to connect through the centre of the board, giving one open space to Red.





jersi

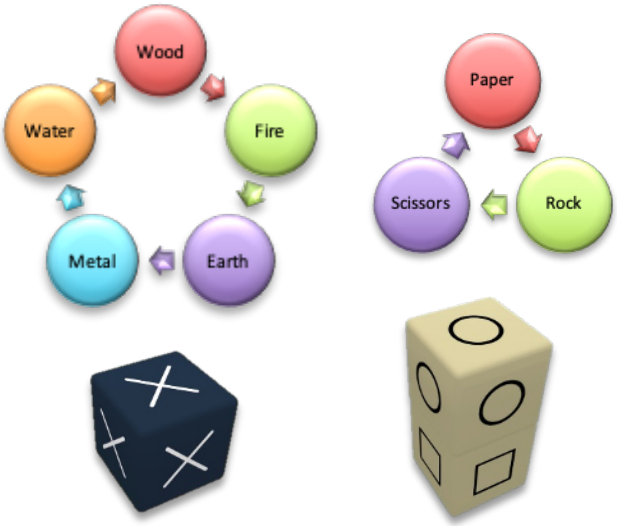
by Lucas Borboleta

The development of Jersi began in May 2019, and after feedback from a small group of testers the rules stabilized in July 2020. The game is playable for free on the web platform Tabletopia. We are considering programming the rules on BoardGameArena. In addition, a publisher, to whom the copyright has been transferred, is working on its physical availability.

Through an overview of the game's development, which may interest games designers, the mechanics of the game are revealed. Then, the rules statement fully specifies these mechanisms. Subsequently, a few tactical notes illustrate the possibilities of the game. Finally, a conclusion is made.

Development overview

The five Chinese elements inspired the rules of capture, although their complexity has been carefully reduced to the simpler cycle of "Rock > Scissors> Paper," giving each player 4 Rocks ○, 4 Papers ▢, and 4 Scissors ×.



The gestures of stacking, unstacking, and long step were imposed almost with a childish need to manipulate wooden pieces. Limiting stacks to a height of two has appeared to be sufficient to define an interesting duality between movement and capture: the height of a unit (cube or stack) determines its ability to move (1: short step; 2: long step); the top determines its power of capture. Thus, in a stack, transport is accelerated, and the top protects or endangers the base, because an attacked stack is always entirely captured.

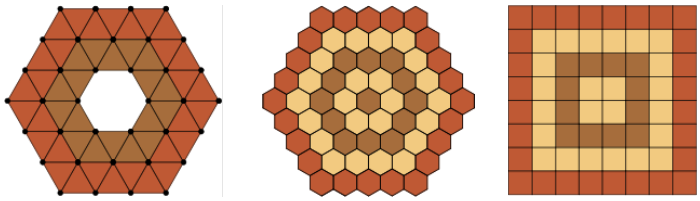
The will for more than one move per turn, at a moderate cost of analysis for players, has been satisfied thanks to the following continuity principle: building a stack then lets you move it; moving a stack then allows you to move its top.

White King *Black King*

The initial objective of completely capturing at least two types of opposing pieces was replaced, at first, by the objective of capturing the opposing King, a new non-combatant type of cube. Subsequently, following the observation of very defensive and static attitudes by some players, the objective became crossing the board with your own King. Mountain, Wise Man, and Fool were added to balance the power of the stacks.

Mountain *Wise Man* *Fool*

Several requests for moderation of the stack power and for increased control of space were met mainly by the introduction of four Mountains cubes, invincible and immovable, droppable from a reserve beside the board: a Mountain slows movement down like a real mountain pass, as it can be crossed only by a single cube; a stack of two Mountains must be bypassed. In addition, two Fools acting as joker fighters were added to the game, as well as two droppable Wise Men acting as non-combatant carriers.



The hexagonal board has been enlarged several times to guarantee a reasonable organization of attacks and defences. A cartesian board, with or without diagonal movements, was tested and abandoned because of too many or too few degrees of freedom.

Initially, each element of the game received a name coined in the constructed language Lojban. But finally, all exoticism has been dropped, except for the name of the game, Jersi, which means "to chase" or "to pursue" in Lojban. My son still calls the king "kunti," which signifies "empty" in Lojban.

Wood prototype based on the stabilized rules with aesthetic variations

Rules

Jersi is a game for two players, White and Black. On a hexagonal board of 69 hexagons (see Figure 1), each player manages 21 cubes of his colour: 1 King, 2 Fools, 2 Wise Men, 4 Rocks, 4 Papers, 4 Scissors, and 4 Mountains. Mountains and Wise Men start beside the board, in the reserve (the grey hexagons of Figure 1). The other cubes start on two opposite edges of the board at fixed positions. White starts the game. The goal of the game is to bring your King to the opposite edge of the board first. A captured King is always put back into play.

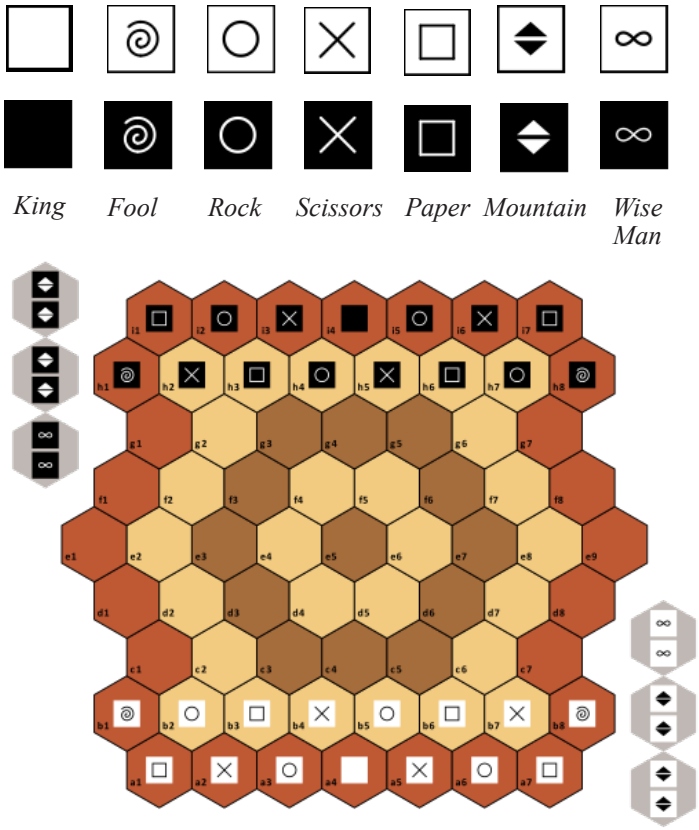


Figure 1: Pieces at starting position

Cubes move individually in short steps by one hexagon, or in stacks of two by a long step over one or two hexagons in a straight line from the starting space. Jumping is illegal. A cube of the reserve is dropped onto the board onto an empty hexagon or onto one of your own cubes. Two cubes dropped in the same turn must land on the same hexagon or on two adjacent hexagons. Once dropped, a Mountain can no longer move (neither alone, nor in a stack), nor be removed from the board.

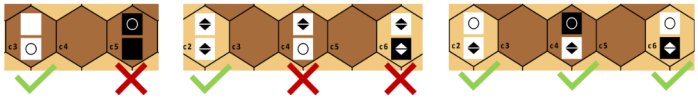


Figure 2: Stacking exceptions for King, and high and low Mountains

Moving a cube on top of one of your cubes builds a stack. Likewise, moving a top cube of one of your stacks unbuilds it. Figure 2 shows exceptions. The King must be at the top of a stack; a Mountain must be at the bottom of a stack or on top of another Mountain; a Mountain can be at the bottom of a stack, with an opponent's cube on top, provided the opponent's cube is not another Mountain.

On your turn, you perform a first mandatory action: a drop or a move. When possible, the second action is optional. After a first drop, the only possible second action is a second drop. Otherwise, a second specific move is possible only if the first move involved a stack (see Figures 3a1, 3b1, 3b2, 3c1, and 3c2). Building a stack, in the first action allows the stack to be moved in the second action; moving a stack, in the first action, allows you to move the top of the stack in the second action.

The diagrams below show the possible moves, where **a**, **b**, and **c** are any cubes that are all the same colour, and **m** is a Mountain of any colour. The final position of the moving piece(s) after the first move is shown in blue; the final position of the moving piece(s) after the optional second move is shown in green.

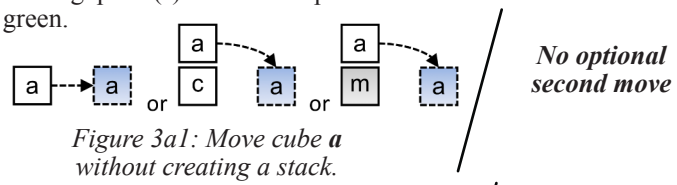


*Figure 3a1: Move cube **a** without creating a stack.*

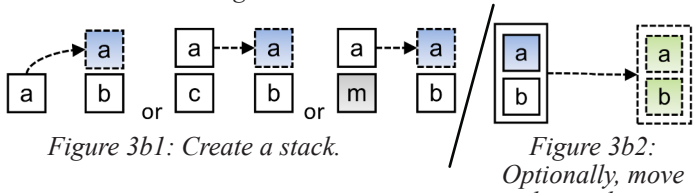


Figure 3b1: Create a stack.

Figure 3b2: Optionally, move the stack just created.

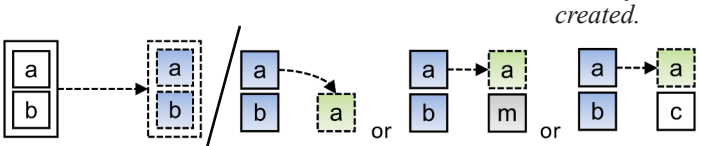


Figure 3c1: Move a stack.

Figure 3c2: Optionally, unbuild the stack just moved.

A good way to think of the movement choices is that there are two symmetrical standard moves: create a stack and move it; move a stack and uncreate it. However, there are three caveats: the second part of the standard move is optional; instead of a standard move the player can instead just move a single cube; Mountains once placed do not move, either singly or as part of a stack.

Moving your unit (cube or stack) to a hexagon occupied by an opposing unit (cube or stack) is possible if your unit is stronger. In this case, the captured opposing unit is removed from the board and replaced by your own unit. The power of a stack is determined by the power of its top. Thus, cubes and stacks do capture each other regardless of their height. However, a cube on top of a Mountain can only be captured by a single cube. When you capture the opposing King, at the end of your turn, you must reposition it anywhere on its starting line.

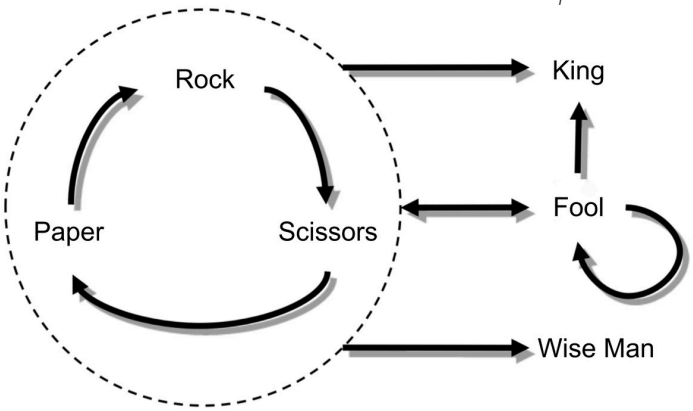


Figure 4: Power/capture relationships

The main power relationships are Rock captures Scissors, Scissors captures Paper, and Paper captures Rock. These relationships are completed with those in Figure 4.

- The King, Wise Man, and Mountain are not fighters—they do not capture. The fighters are Rock, Paper, Scissors, and Fool.
- Any fighter captures the King.
- The Wise Man, like the King, is vulnerable to capture by any fighter, with the exception that he is impervious to the Fool.
- In attack, the Fool captures any fighter; in defence, the Fool is captured by any fighter, including an opposing Fool.
- The Fool is a kind of universal fighter, able to capture and be captured, with the exception that the Fool does not defeat the Wise Man.
- Nothing captures a Mountain, and once placed Mountains do not move and therefore do not capture. The Mountains are hard barriers for the opponent; Mountains cannot be captured and opposing piece can be moved onto a Mountain without capturing the Mountain. Mountains slow down the movement of your own pieces, because even your own pieces can only move over Mountains singly. Two Mountains stacked together is an impenetrable barrier.

A player wins the game when his King reaches the opposite edge of the board, or when the captured opposing King cannot be repositioned, or when no action is possible for the opponent. The game is declared a draw if no capture other than the King has taken place after 40 turns since the start of the game or since the last capture.

Tactical notes

The rules of Jersi generate interesting tactical situations. A few are presented here with the intention of enlightening the reader on the atmosphere of the game. The move notation is as follows:

Notation	Meaning
c3=c5	stack on c3 moves to c5
c5-b6	single cube/cube on top of c5 moves to b6
c3=c5-b6	c3=c5 followed by c5-b6
c3=c5!	move c3=c5 with a capture
c3=c5!!	move c3=c5 with capture of a King
M:c4/W:c5	Mountain drops at c4; Wise Man drops at c5

Stacks are fast

Indeed, a stack can move two hexagons per turn. Virtually a stack, unopposed, could cross the board in 4 turns (see Figure 5). In comparison, a single cube needs 8 turns.

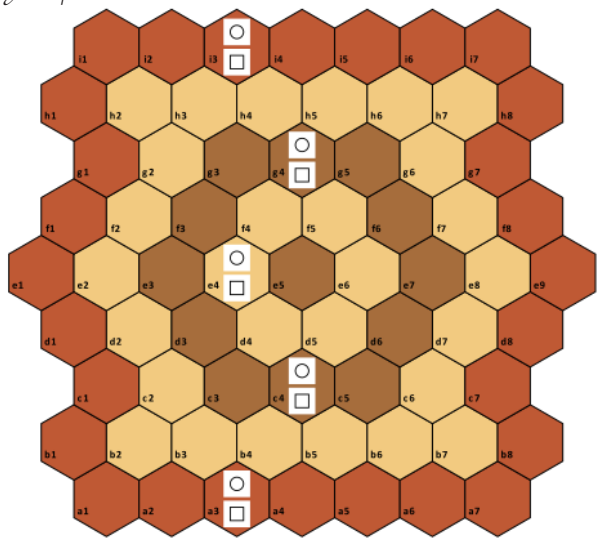


Figure 5: The Rock-Paper stack can cross the board in 4 turns: 1. a3=c4, 2. c4=e4, 3. e4=g4, 4. g4=i3.

Stacks are powerful

A stack can capture twice per turn (see Figures 6a, 6b, and 6c). So, technically, a stack can capture 4 cubes per turn. In this case, admittedly very theoretical, if the stack is captured, alone, during the opponent's next turn, then the net result would be a gain of 2 cubes.

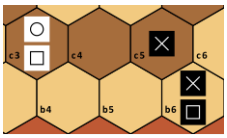


Figure 6a: Start of White turn

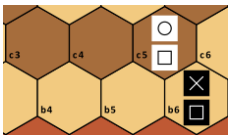


Figure 6b: First capture: c3=c5!

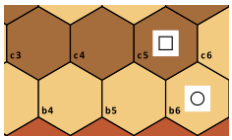


Figure 6c: Second capture: c5-b6!

Stacks can attack and self-protect

As shown in Figure 7a and 7b, a stack can, in the same turn, attack and protect itself. This brings up a general advice about rhythm: you must be careful not to waste any turns to properly lay out the top and the bottom of a stack.

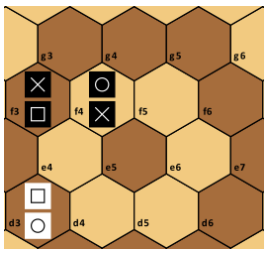


Figure 7a: Start of White turn

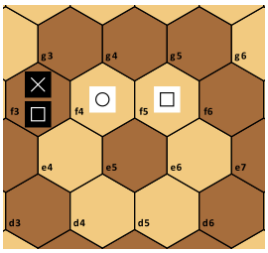


Figure 7b: White captures and self-protects: d3=f4!-f5.

Versatility of the triad

A stack is already powerful, but close cubes ready to build a stack are also powerful. Especially, powerful is a triad of cubes as shown in Figure 8, which is composed of one each of Rock, Paper, and Scissors. This triad can defend many hexagons on the **f** and **g** lines.

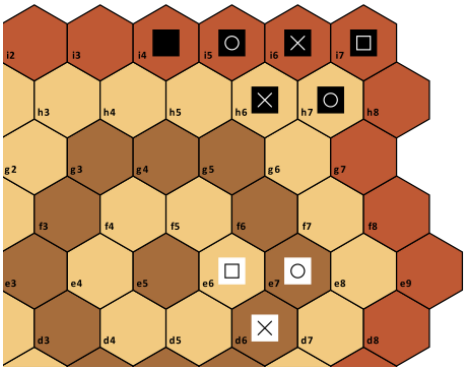


Figure 8: The White triad controls many hexagons.

Numerical balance of triad cubes

It is obvious, but worth mentioning, that it is of strategic importance to maintain a numerical balance in the fighting triad of Rock-Paper-Scissors. For example, in the extreme case, if you no longer have Rocks, but your opponent still has Scissors, then your own Papers are threatened. Breaking your opponent's balance to your advantage is a valuable goal in the opening.

King to provide pressure

The King is not only the cube that delivers victory. The King also allows some pressure to be applied as shown in Figure 9 on the right wing.

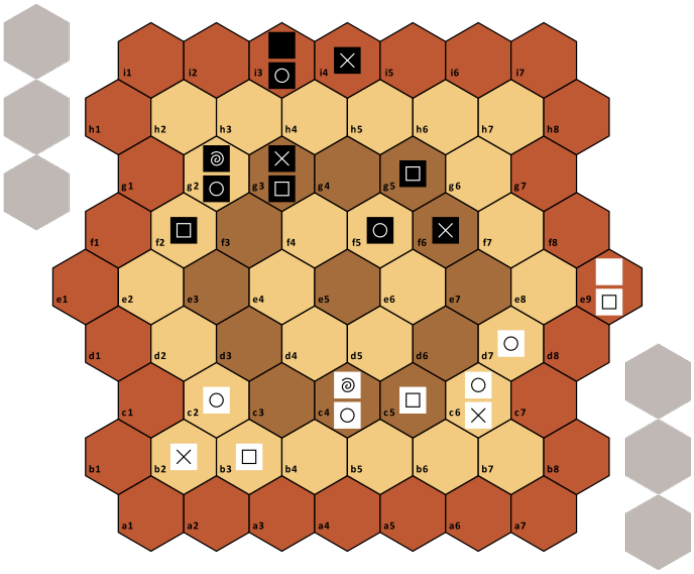


Figure 9: White King pressure on the right wing

King as carrier

In some case, it is be valuable to use the King as a carrier as shown in Figures 10a and 10b, where the Rock is welcomed to defend the white Paper and Scissors.

Boom & Zoom Puzzle Solutions from page 25

Problem 1: White must capture f4:f5. If both sides now start racing, White needs seven turns to bear off the remaining two pieces, whereas Black needs eight. If instead White starts running immediately, with d6-d8 or f4-g5, Black replies f5-c2 and achieves a 9:9 draw.

Problem 2: White must capture b4:b6. White is under pressure due to clusters (bad shape) and Black has already borne off two pieces. Next 1. . . . f6:h6; 2. b4:b6 makes a black singleton (2. . . . b6-c5; 3. c4-f7 is a white win). Instead 1. . . . b6:b4; 2. h6:f6 leaves Black with two singletons and losing on time. The move 1. f6:h6, creating a black singleton immediately, is refuted by the backwards move 1. . . . f6-g7, cornering White's edge piece. White cannot prevent both speedy escape b6-e4 and capture g7:h6.

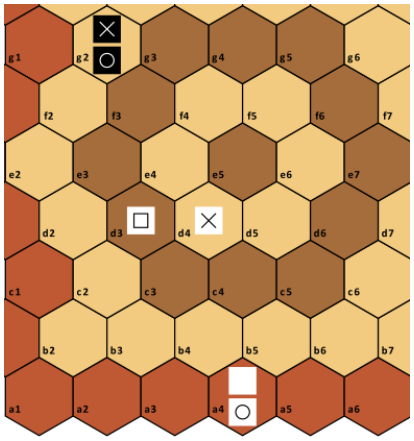


Figure 10a: Start of White turn

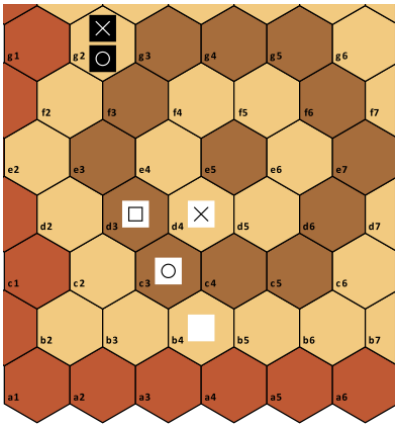


Figure 10b: White King used as a carrier: a4=c3-b4

Fool as universal defender

A typical usage of the Fool is as a universal defender, as shown in Figure 11 at **e3**. Because it is on top of a stack, it can efficiently protect a large area, a no-man's land.

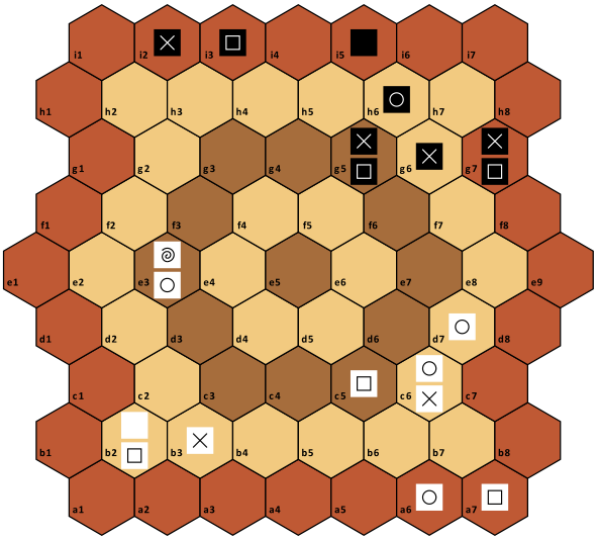


Figure 11: White Fool at e3 defends a large territory.

Tumbleweed Puzzle Solution, from page 13

C1. Then if A1, D1; if D1, D1x; if B3, C3x.

Wise Man as carrier

The Wise Man was designed for bringing back into play isolated cubes, thereby balancing the power of the stacks. In the situation of Figures 12a and 12b, the drop of the two Wise Men provides defence of the Rock at **d4**, and more globally, allows White to recover some control of the central zone.

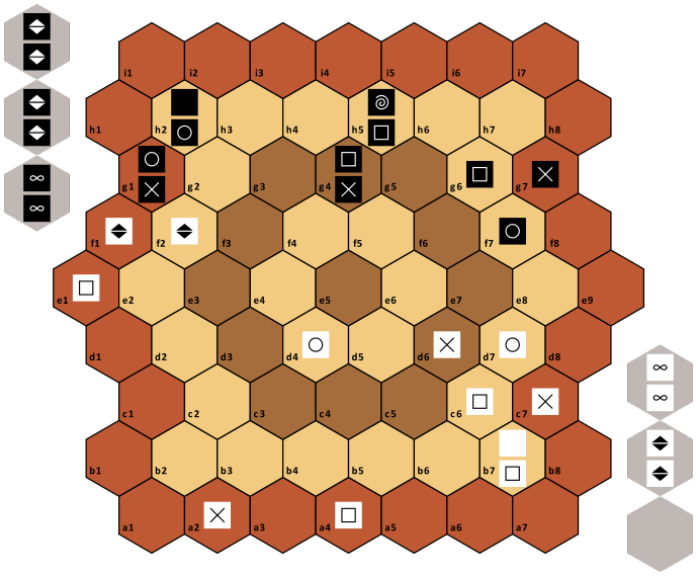


Figure 12a: Start of White turn

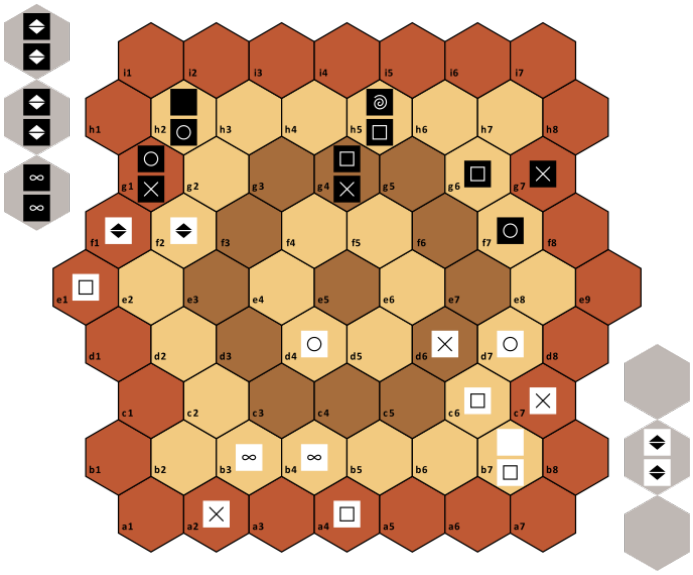


Figure 12b: Drop of two Wise Men to defend Rock at d4 and the centre: W:b3/W:b4

Wise Man as King blocker

Dropping a Wise Man can block the opposing King achieving victory, as shown in Figures 13a and 13b. Tactically, in this case, the Wise Man is more effective than a Mountain.

Mountains can save time

When the opposing King is heading for victory, dropping Mountains can provide the time needed to organize a more valuable defence, as shown in Figures 14a and 14b.

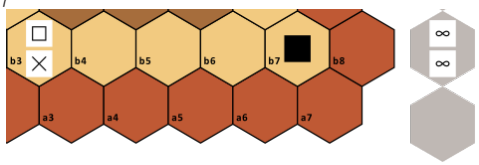


Figure 13a: Start of White turn

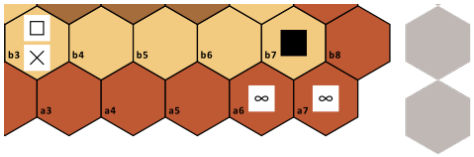


Figure 13b: Drop of two Wise Men to block the Black King: W:a6/W:a7

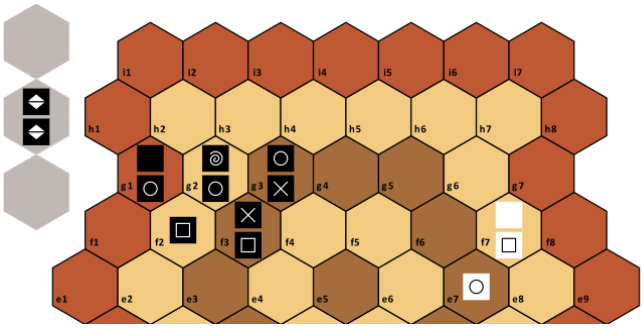


Figure 14a: Start of Black turn

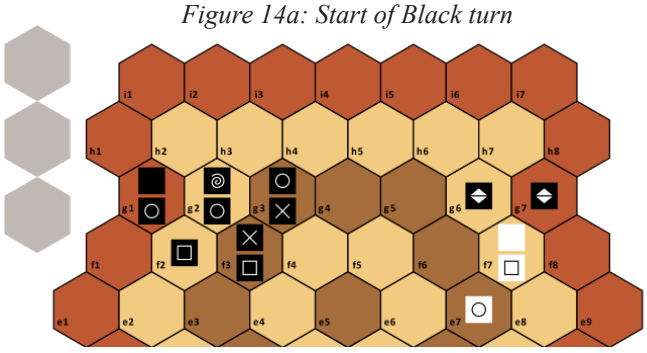


Figure 14b: Drop of two Mountains to block the White King: W:g6/W :g7

Mountains can break up powerful positions

In the middle of the game, dropping Mountains can break powerful opposing positions, helping to recover some control, as shown in Figures 15a and 15b, where White recovers some control of the left wing.

Mountains can cut off the retreat

Dropping Mountains can be used to cut off the retreat of cubes or stacks for later possible capture, as shown in Figures 16a and 16b.

Strategic options with Mountains

In a few games, we tested the strategic use of Mountains, from the start of the game: defensively, as in "Defence of Helm's Deep," shown in Figure 17; and aggressively, as in "Siege of Minas Tirith," shown in Figure 18. Testing was insufficient to conclude whether these kinds of strategies are efficient and effective or not.

Alfred's Wyke Solution from page 35

The winning move is 3-1 (d2+,c3)! from Destroyer. This defends b3 and the twin threats to c1 and c3 must be answered with 2-1-1 (c3,c1,*). For example, 2-1-1 (c3,c1,b3). Finally, Destroyer plays 2-2 (c1,c3), again defending b3 and Builder cannot defend both c1 and c3.

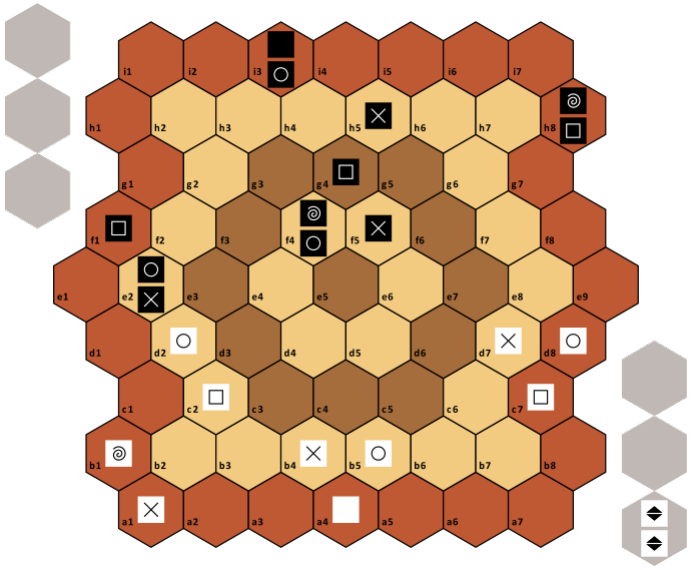


Figure 15a: Start of White turn

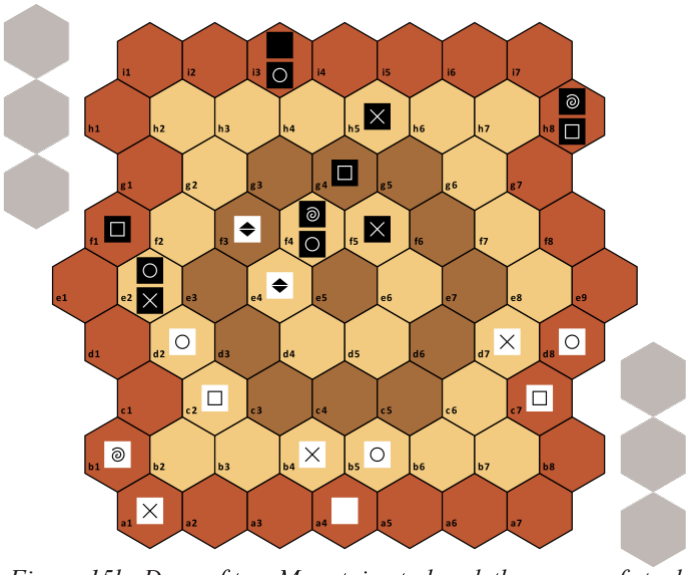


Figure 15b: Drop of two Mountains to break the power of stack at f4: M:f3/M:e4

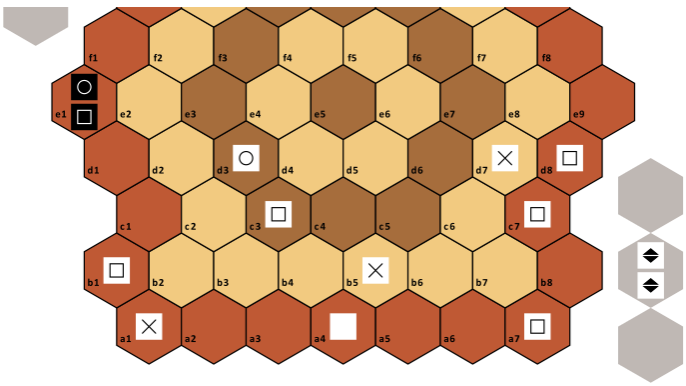


Figure 16a: Start of White turn

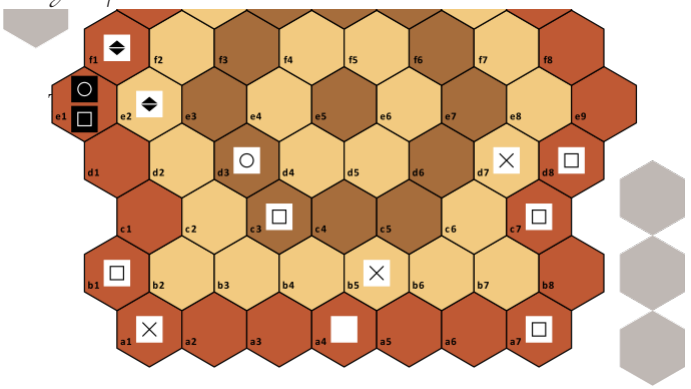


Figure 16b: Drop of two Mountains to block backward move of black cubes: M:f1/M:e2

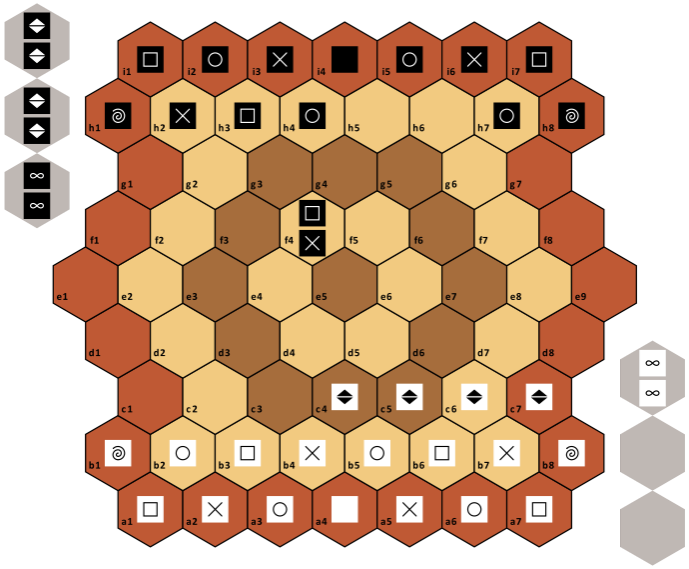


Figure 17: Defence of Helm's Deep as White opening: 1. M:c4/M:c5, 2. h6-h5=f4, 3. M:c6/M:c7

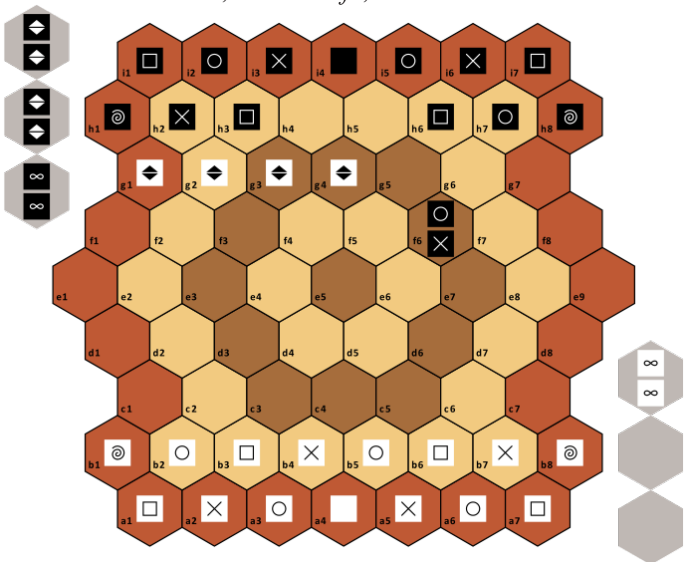


Figure 18: Siege of Minas Tirith as White opening: 1. M:g3/M:g4, 2. h4-h5=f6, 3. M:g1/M:g2

Conclusion

This article aims at providing the reader with some insight into the atmosphere of Jersi, its tactical possibilities, and hopefully the desire to try it. Strategies remain to be developed. For example, can the Helm's Deep Defence be effective?

Acknowledgements

I thank Kerry for his welcome in his magazine, my son, alias "Fox," for his constant interest from the first days, and finally François, my publisher, who encouraged the evolution of the game. ■

A game by Andrew Perkis: Alfred's Wyke

by Alain Dekker

The small town of Wyke Regis on the Dorset coast in South West England is an unlikely setting for a wonderful two-player game from designer, Andrew Perkis. I first met Andrew sometime in 2008 when he introduced me to Alfred's Wyke. Incidentally, Andrew has designed a number of high quality boardgames and puzzles. These include Owlman, Mirador, and Cloud Nine, some of which have been presented in *Games* magazine. For those with access to a back catalogue of *Games*, the September 2008 issue features an article on Alfred's Wyke by Andrew Perkis.The back-story for Alfred's Wyke is a struggle between the Saxons (or Builder) and the Vikings (or Destroyer). This delightful puzzle-game has a unique move-selection mechanism, and I was immediately captivated.

Introduction

The game board is a square grid of *plots* in two sizes, 4x4 or 6x6. One *house* stands on each plot. The Builder and Destroyer take turns adding or removing tiles from one or more houses, depending on the move selected. When a house is completely built (and claimed by the Builder) or destroyed (and claimed by the Destroyer), no further play is allowed on this plot. The Builder and Destroyer strive to meet certain conditions on the claimed plots to win the game. These conditions are discussed later.

Setup

For the 4x4 game, place a 2x2 grid of tiles (representing the lower floor of a 2x2x2 house) on each plot. Remove one tile from the lower right and upper left corners to create the starting position. This is shown in Diagram 1a, along with the grid of available moves. "B" is used for the Builder and "D" is for the Destroyer.

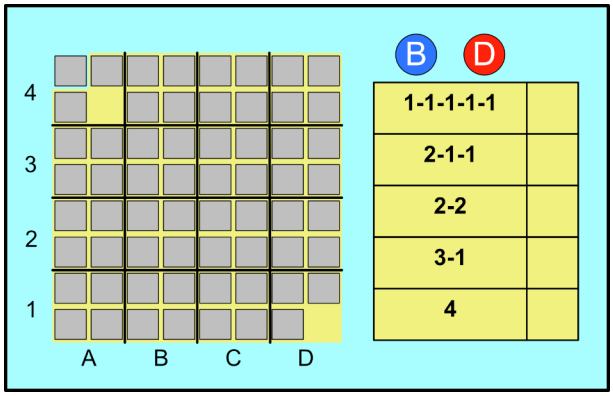


Diagram 1a: 4x4 starting position with available moves chart

The 6x6 game is similar, but with six rows and columns, as shown below.

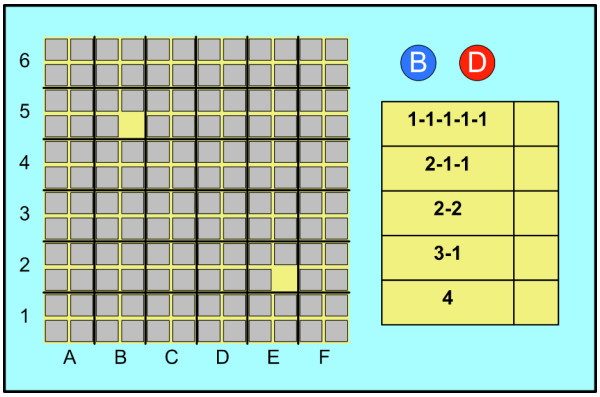


Diagram 1b: 6x6 starting position with available moves chart

Rules of Play

The Builder moves first, and thereafter play alternates. Passes are not allowed. The player selects and places their marker next to one of the available options on the chart. Only options which do not have a marker next to it are available for selection. At the start of the game, the Builder can choose any of the five options. The Destroyer then has four choices available. Thereafter each player can choose between three options—those not played by the Builder or Destroyer on the previous turn.

The 1-1-1-1-1 move means the player adds (for the Builder) or removes (for the Destroyer) one tile from each of five different plots. Other moves are similar. For example, the 3-1 move allows the Builder to add three tiles to one plot and one tile to a different plot.

Moves must be completed in full. For example, if the 4 move is chosen then exactly four tiles must be added or removed from a plot—the player cannot "split" the move between plots or add or remove fewer than four tiles. There is only one exception to this: If only four plots remain which have not been claimed by either player, then the 1-1-1-1-1 move can be played as 1-1-1-1. This can only occur in the 4x4 game when players are tied on six plots each.

Capturing plots

Whenever a 2x2x2 house is completed with a total of eight tiles, the plot is won by the Builder. Similarly, when all tiles are removed from a house, the plot is won by the Destroyer. It is possible for several plots to be won on a player's turn. Once claimed, no further play is allowed on that plot. When a plot is won, the players remove remaining tiles (in the case of Builder) and put a marker of their own colour on the plot.

As noted in the previous section, to complete or demolish a house, the exact number of tiles must be added or removed. For example, if there were two tiles on a plot, and none

of the moves which include a "2" were available, the Destroyer would not be permitted to claim the plot by using the 4 move or using the "3" component of the 3-1 move.

Object
The players strive to achieve one of the following win conditions.

A *positional win* is achieved when either player has won four plots that form either:
1. A four-in-a-row of houses (orthogonal along a row or column or diagonal), or
2. A "farmstead" or two-by-two square of contiguous plots.

A *numerical win* is achieved when either player has won a total of seven plots (in the 4x4 game) or twelve plots (in the 6x6 game).

A *standing win* is achieved if the player is unable to choose a legal move from the option chart. Note that this is highly unlikely and is probably only possible in a constructed game.

In practical tournament play, a draw may be agreed after, for example, a three-fold repetition.

Move selection
This and the next section summarize some interesting statistics about the available moves and the board geometry.

In the starting position of the 4x4 game, the Builder has all five choices available. But these can be played in any legal way. A total of 528,014 different moves are legal, calculated as follows:
1-1-1-1-1: 16 x 15 x 14 x 13 x12 = 524,160
2-1-1: 16 x 15 x 14 = 3,360
2-2: 16 x 15 = 240
3-1: 16 x 15 = 240
4: 14

The number of legal moves at the start of a 6x6 game is an eye-watering 45,284,434! Astute readers will note that board rotations and mirror images mean some moves are equivalent. Moreover, the number of legal moves falls as the game progresses for two reasons: available options reduce to three after the first two moves, and legal options become fewer as the number of claimed plots increases.

All moves, with the exception of 1-1-1-1-1, add (or remove) exactly four tiles to the board. While the 1-1-1-1-1 move has a less dramatic impact, the cumulative advantage of the extra tile is significant and can build up with time. Whenever 1-1-1-1-1 becomes available, and the board position allows it, players will generally be wise to play it.

Board geometry
The 4x4 board has a total of 9 farmsteads (2x2 block), 8 orthogonal lines of four (along a row or column), and two diagonals. Positional wins are therefore more likely by forming a farmstead or orthogonal four-in-a-row, than by a diagonal four-in-a-row. Practical games between experienced players are, however, likely to end in a 7-6 numerical win.

The geometry of the 6x6 board is more complex, though. The board has 25 farmsteads, 36 orthogonal lines of four, and 18 diagonals. With a numerical win requiring 12 plots, positional wins are much more likely. The 6x6 game geometry therefore makes for a more interesting and engaging game.

Header image: King Alfred the Great, by founder of Oriel College, name not found (19th century). First published before 1923 (c. 1850) and author died before 1947. Public domain, via Wikimedia Commons.

Practical and online play
Alfred's Wyke has not yet been published in physical form, but the game can be played using upturned word tiles (such as used in Scrabble) or in pen-and-paper form. The game can also be played online at superdupergames.org. The first game was played in February 2009, and to date approximately 250 games have been completed. The win rate for the Builder is 52.4%, with a similar "first move" advantage to games such as Chess.

The starting position of Alfred's Wyke gives the Destroyer a 2-tile advantage. However, since the Builder can (and should!) immediately take the powerful 1-1-1-1-1 move, a slight bias is to be expected in favour of the Builder.

Alfred's Wyke has not yet been submitted (some would say subjected!) to formal computer analysis, but I have written a program to analyze the game. The program performs Monte Carlo simulations by randomly selecting from among the available legal moves (with the option to choose the beneficial 1-1-1-1-1 move, when available). The idea is to gather statistics on win conditions, shortest and longest possible games, and to give an estimate of the advantage enjoyed by the Builder. The results from millions of simulations are:

	Builder win ratio	Max game length	Average game length
4x4	56.6%	135	44.2
6x6	52.1%	157	65.9

The win percentage tallies closely with the win rate from completed games at SuperDuperGames.

Tournament play
The annual Mind Sports Olympiad (MSO) takes place in the United Kingdom and attracts international participants from all over the world. A huge variety of boardgames and mental disciplines are featured such as Chess, Poker, Settlers of Catan, Mental Calculations, and Creative Thinking. The standard is incredibly high. Alfred's Wyke has made two appearances at the MSO (in 2009 and 2010), where both tournaments were won by Martyn Hamer from England (with myself second). Martyn is a strong games player from Lancashire in the north of England and won the prestigious Pentamind in 2009.

Alfred's Wyke has not been published in physical form, so the MSO events used upturned Scrabble tiles. This is not ideal, though, since players need to have a steady hand - not easy during the tensions of playing in a tournament! Due to a slight bias towards the Builder, tournament play should always be double-sided (one game where Player 1 takes the Builder, and a return match where Player 1 takes the Destroyer). If time and equipment allows, the higher quality 6x6 game should be preferred for tournament play.

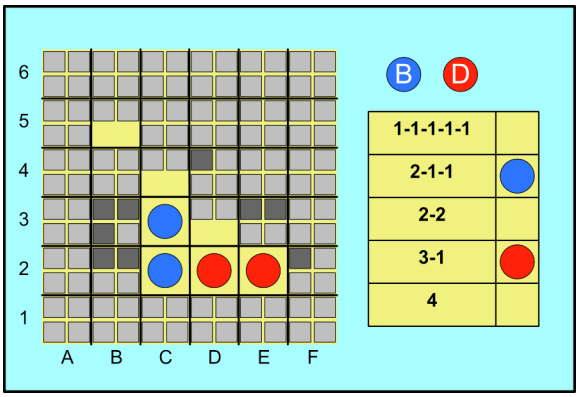


Diagram 2a: A 6x6 game. What should Destroyer play?

Example position

To give readers a flavour of some of the intricacies of the game, have a look at Diagram 2a, above. The Builder in this game was Martyn Hamer and the Destroyer was played by myself. This complex position was reached after move 17. Before reading further, consider what you would play as Destroyer in this position. (Small numbers in the diagrams show the previous move; the smaller square images are tiles on the second level.)

Builder is threatening to complete the b2,b3,c2,c3 farmstead. The 1-1-1-1-1 move is also available and earlier advice rightly recommends to take this move whenever available. But the best move here is actually 2-2 (d3+,c4+) to reach the position shown in Diagram 2b.

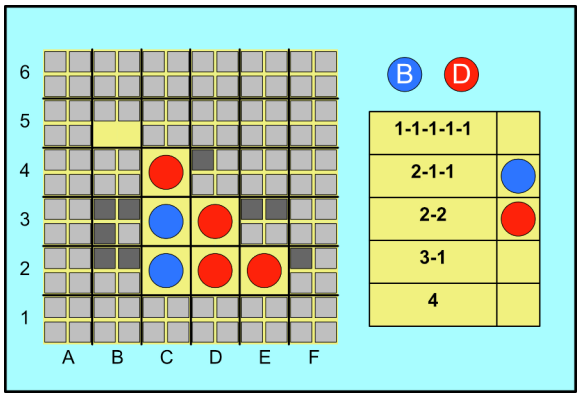


Diagram 2b: A good response, pushing for the initiative

Gaining two central plots is useful, but the strength of this move lies primarily in gaining the initiative. Destroyer now threatens a diagonal four-in-a-row (b5-e2 or c4-f1), the e3 plot must now be defended and several possible lines and diagonals for Builder have been permanently cut off.

Builder cannot immediately win by completing the b2,b3,c2,c3 farmstead. Nor can Builder himself play the available 1-1-1-1-1 move because the b5 plot would be captured next turn. In the event, Builder chose 3-1 (f1,b5) and Destroyer was then able to play 1-1-1-1-1, keeping a lasting initiative to win a tense, exciting game eventually.

Annotated Game

This example 4x4 game was between "Laurie_Menke" (Builder) and myself (Destroyer). Readers may follow the game from the text and figures, or by using pencil-and-paper.

1. 1-1-1-1-1 (b2,b3,c2,c3,a4) 2-1-1 (b3,c3,c2). Builder makes a strong early move, using the 1-1-1-1-1 move to attack the central squares; Destroyer responds in kind. **2. 3-1 (b2+,c2)**. The immediate capture of a central plot works well, permanently removing possibilities from Destroyer. **2. . . . 1-1-1-1-1 (c1,c2,c3,b3,d1), 3. 4 (c2+)**. An excellent move, slicing the board in two and removing several future winning options from the Destroyer. Builder now enjoys a strong initiative with the threat to make a line of four in the second row. (See Diagram 3a.) **3. . . . 3-1 (d2,d1), 4. 1-1-1-1-1 (b3,c3,b1,b4,d2)** .Taking the 1-1-1-1-1 move consistently gives the player a long-term cumulative advantage because it adds or removes an extra tile compared to the other moves. **4. . . . 2-2 (b3,c3), 5. 3-1 (d2,a2)1-1-1-1-1 (a3,b3+,c3,d3,d1+).** Destroyer finally captures a plot, making a stake for the third row. **6. 2-2 (a2,d2)**.Very strong! The threats along the second row must be answered immediately. (See Diagram 3b.) **6. . . . 4 (d2)** .Probably best. Destroyer keeps alive future threats along the D-column. It is worthwhile considering the possibilities here.

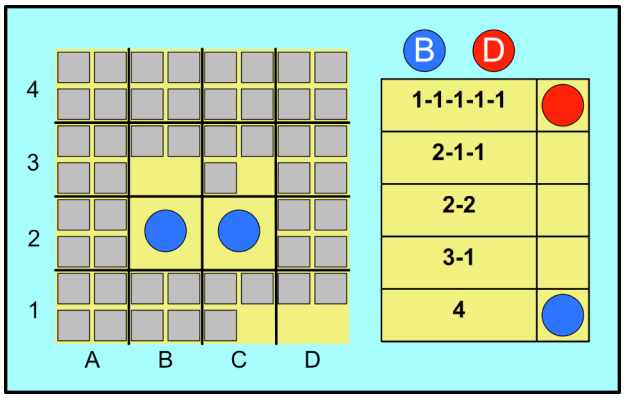


Diagram 3a: Position after 3. 4 (c2+)

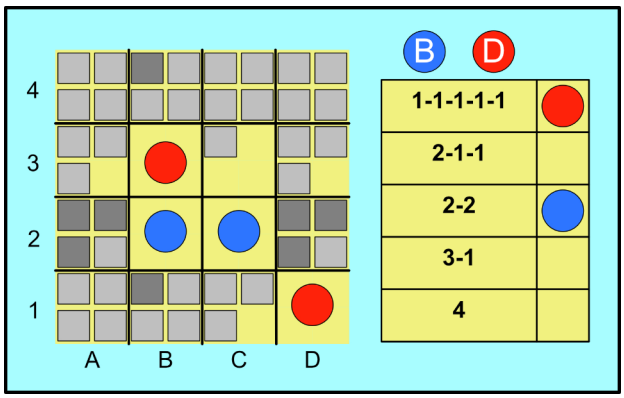


Diagram 3b: Position after 6. 2-2 (a2,d2)

One or both of the moves 1-1-1-1-1 or 2-1-1 will be available to Builder next turn, and consequently Destroyer must therefore remove tiles from one or both the a2 and d2 plots to avoid immediate loss. Three options are available: 2-1-1, 3-1, and 4. It is not easy to decide between them and care is required. For example, 3-1 (d2,c3+) is appealing since it defends against the immediate threat on the second row and captures another plot. But Builder can respond 4 (d2+)! ending the game because a2 cannot be defended. One reasonable alternative is 4 (a2) which has the advantage of attacking Builder's threat on the a1,a2,b1,b2 farmstead. **7. 1-1-1-1-1 (a2+,d2,b1,a1,c3)**.The threat along the second row is renewed and a second threat has emerged on the a1,a2,b1,b2 farmstead, meaning Destroyer must now defend three plots (a1, b1, and d2). **7. . . . 3-1 (d2,b1)**. A good response, which prevents Builder capturing any of the threatened plots. **8. 2-1-1 (d2,a1,b1)1-1-1-1-1 (a1,b1,d2,d3,c3), 9. 3-1 (b1+,a1)** Capturing b1 is best as now both a1 and c1 are threats which must be defended by Destroyer. The alternative capture on a1 leaves only b1 as a threat on the bottom row. **9. . . . 2-1-1 (d2+,c3+,a1)** Cool defence under pressure! d2 is permanently removed as a threat and Destroyer tries to distract Builder by renewing threats along the 3rd row. (See Diagram 3c.)

Alfred's Wyke author, Alain Dekker, grew up in South Africa and came to the UK in 2000. He has represented South Africa in international Chess and Backgammon tournaments, and the United Kingdom at the World Chinese Chess (Xiangqi) championships (in 2003 and 2005). Alain has won many medals at the Mind Sports Olympiad, and in 2004 won the overall Pentamind championships. Since the birth of his daughter in 2008, he spends less time playing over-the-board games to spend time with his family. He works as a software developer in the field of image processing and medical imaging, and is an amateur musician, playing both the recorder and bassoon.

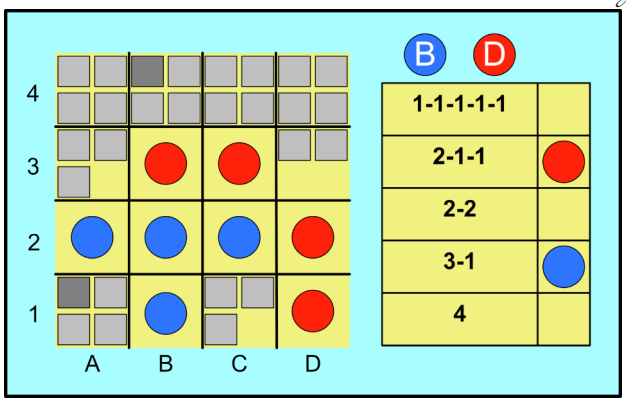


Diagram 3c: Position after 9. . . . 2-1-1 (d2+,c3+,a1)

10. 1-1-1-1-1 (a1,c1,a4,c4,d4). This move is fine, though more accurate might have been to add tiles to one or both of a3 and d3. Note that both a1 and c1 win for Builder and must be defended. **10. . . . 3-1 (c1,a1)**. Care is required! For example, 3-1 (a1,c1) loses immediately to 4 (c1) and Destroyer cannot defend c1. **11. 2-1-1 (c1,a1,d3)**. This is inaccurate. The key threat here is a1 and 2-1-1 (a1,c1,d3) would be strong. Destroyer would then be forced to play 4 (a1), whereafter Builder can follow up with 1-1-1-1-1 (a1,c1,a3,d3,d4). Destroyer would not be able to capture either a3 and d3. **11. . . . 2-2 (a3,d3)**. Due to the mechanism for selecting moves, stubborn defence is possible for the resourceful defender. The move chosen defends a1 and renews the threat along the third row. Builder is objectively still winning, but care is required! **12. 4 (d3)**. Builder responds to the threat directly. Worth considering was the forcing sequence beginning with 1-1-1-1-1 (a1,c1,a3,d3,d4). Destroyer must defend with 4 (a1), when 2-2 (a1,d4+) captures another plot and leaves Destroyer with the problem of defending both a1 and c1 and unable to play the 1-1-1-1-1 move. **12 . . . . 3-1 (d3,a1)?!** The move 2-1-1 (a1,a3+,d3) was more flexible. The extra plot and threats on the second row gives Builder more to think about... always useful in a practical game! **13. 1-1-1-1-1 (d3,a1,a3,b4,c4) 4 (a1)**. Forced in order to defend a1. If Destroyer had played 2-1-1 on the previous move, an additional option of 3-1 (a1,*) would have been available (where * means 'any plot"). **14. 2-2 (b4+,c4+)**. Builder has now reached six plots and needs only one additional plot to achieve a numerical win of seven plots. (See Diagram 3d.)

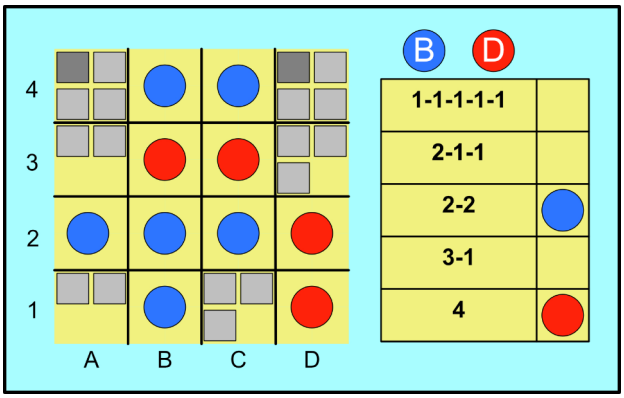


Diagram 3d: 14. 2-2 (b4+,c4+)

14. . . . 3-1 (d4,d3). The 3-1 move is forced as there is no other way to defend both a4 and d4, but 3-1 (d3+,a3) was worth considering as the threat along the third row may distract Builder. **15. 2-1-1 (a4,d3,a3) 4 (a4)**. The only way to defend a4. **16. 3-1 (c1,a1) 1-1-1-1-1 (c1,a1,a3,d3,d4)**. Builder should have prevented Destroyer playing 1-1-1-1-1 by playing this himself! (See Diagram 3e.)

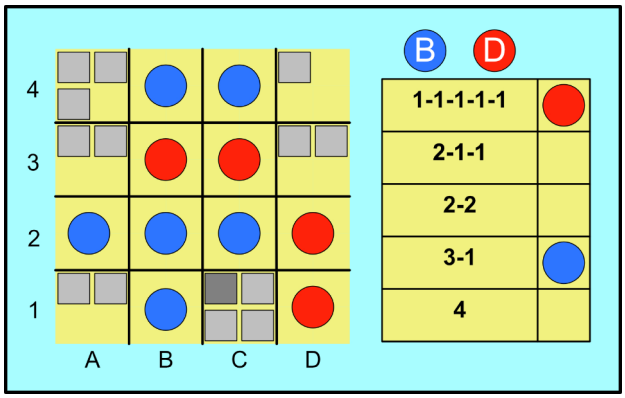


Diagram 3e: Position after 16. . . . 1-1-1-1-1 (c1,a1,a3,d3,d4)

17. 4 (a1). Builder blunders! The move 4 (d3) forces a winning sequence. If Destroyer plays 3-1 (a4+,d3), 1-1-1-1-1 (a1,c1,a3,d3,d4) follows by Builder when c1 and d3 cannot both be defended. Destroyer must therefore play 2-1-1 (d3,c1,d4+), but Builder is then able to play 2-2 (c1,d3), forcing the response 3-1 (d3,c1) from Destroyer. Builder responds 2-1-1 (c1,a3,a4), forcing 4 (c1). Finally Builder plays 1-1-1-1-1 (a1,c1,a3,d3,d4) and Destroyer is unable to defend c1, a3, d3, and a4). **17. . . . 3-1 (a1,d4+)**. Oops, Destroyer overlooks two immediate wins! Can you see them? Both 2-2 (a3+,d3+) and 2-1-1 (d3+,d4+,*) would have won on the spot! **18. 2-1-1 (c1,a3,d3) 4 (c1), 19. 1-1-1-1-1 (a4,a3,a1,c1,d3) 3-1 (d3,a3)**. The 4 move is unavailable and the game finally ends.... **20. 4 (c1+).** A complex game, with both players missing chances!

Puzzle Position

We finish with the ending to a game between the owner of SuperDuperGames, Aaron Dalton (Builder) and the games inventor, Andrew Perkis (Destroyer). In the position from Diagram 4, Builder has just played the move 1-1-1-1-1 (c3,b3,b2+,c4,d2) and is apparently in a commanding position with an additional plot and the threat to complete a farmstead on b3. But Destroyer has a powerful counter-stroke which starts a winning sequence. Can you spot the move?

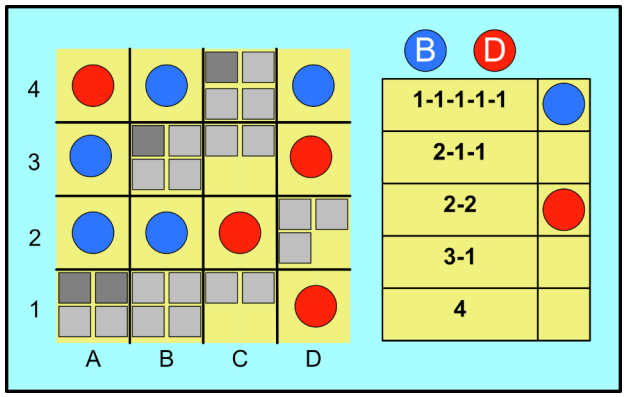
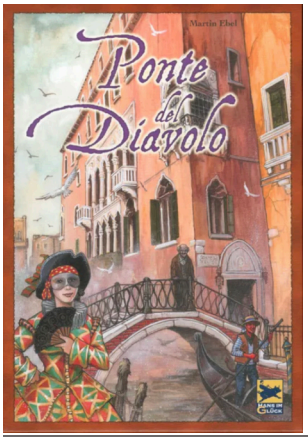


Diagram 4: Can you spot the winning move and forcing sequence for Destroyer? (Solution, page 30)

Acknowledgements

Head over to SuperDuperGames (superdupergames.org) to try Alfred's Wyke for free. Thanks to *Games* magazine for requesting and agreeing to publish this article. Above all, my thanks to Andrew Perkis for creating this and many other wonderful games. ■



Ponte del Diavolo

Basic tactics and pitfalls

by K. C. Smith

Ponte del Diavolo is an under-appreciated gem of a game. It was invented by Martin Ebel and first published by Hans im Glück in 2007. The rules are short and simple. However, the tactics and strategy that follow from those rules have great depth.

The board is a 10x10 square grid. Play proceeds by each player placing two tiles or one bridge on their turn. Tiles cover one square; bridges span 3x1, 3x2 or 3x3 spaces. (See Diagram 5, for example.) No piece is ever moved or removed once placed.

Light moves first. To compensate for the first move advantage that is inherent in many two-player abstracts, Ponte del Diavolo uses the pie-rule. As in, "You cut, I choose." The first player places two tiles on any two spots on the board, then the second may either accept their opponent's move and play on or they may choose to switch colours, accepting the played tiles as their own first move. The natural effect is for the first player to play their first tiles in the centre rarely. The other rules are these:

1. On each turn a player must either:
- Place two tiles onto unoccupied, unblocked squares, or
- Place one bridge from any one of their tiles across unoccupied, unbridged squares to 1 of their other tiles.
- You may not place a tile under any bridge; you may not place a bridge over any tile, or any other bridge.

2. Four orthogonally connected tiles of the same colour form an *island*. Furthermore:
- There must never be an island of five or more tiles.
- An island must also never be diagonally adjacent to a tile of its own colour. (This also means you may not form an island if it would be adjacent to any of your other tiles.)

3. Each lone island scores 1 point towards victory. If two islands are connected by a bridge, then that group would score 3 points, taken together. Likewise, a three-island group scores 6 points, a four-island group scores 10 points, and so on through the sequence of triangular numbers. (Which is, n(n+1)/2. Note that this formula applies to 1-island "groups" as well!)

At the game's end, the player with the greatest number of points wins. If the players' point totals are equal, the tie-breaker is the total number of islands; if still tied, the total number of bridges; in both cases, the higher number wins.

4. The game ends when either player can no longer legally place two tiles and chooses to pass. (Because a player who cannot place tiles may still opt to place a bridge.) If the passing player is dark, the game ends immediately. If the passing player owns the light tiles, then the player of the dark tiles gets a final turn.

Poisoned tiles

The most important lesson that a new player of Ponte del Diavolo must learn is what I call *poisoned tiles*. There are certain arrangements of tiles that can never be promoted to an island. This is a non-obvious result of the relatively simple rules. The plainest example would be two orthogonally connected tiles that are diagonally adjacent to two other orthogonally connected tiles. If a player makes this error, not only will those four tiles be lost for scoring purposes, but—perhaps more critically—every square adjacent to these tiles is now also ruined for the purposes of placing a tile that may become part of a scoring island!

See the pair of light sandbars in Diagram 1. (Where *sandbar* is the term given to any orthogonally connected group of same-coloured tiles that numbers less than four.) To connect the two sandbars with **X** or **Y** would create an illegal island of five tiles. Also, to expand either sandbar to an island of its own would mean an island that is diagonally adjacent to same-coloured tiles, which is also illegal. See the pair of dark sandbars in Diagram 1. The player cannot play tiles at **Z**.

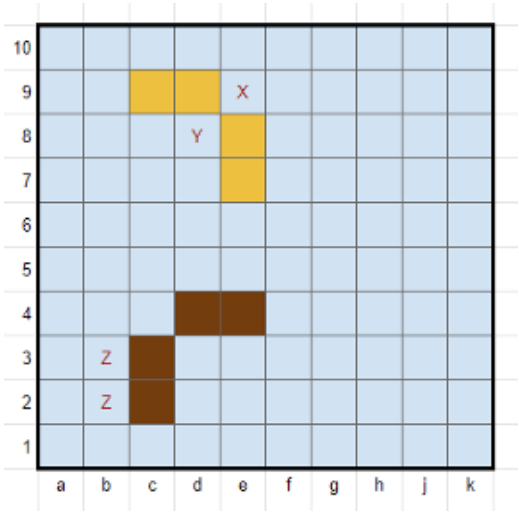


Diagram 1: Poisoned tiles

It is a harsh rule that an island may not be adjacent in any direction to any tile of the same colour. Still, the rule applies to one's opponent as well and yields a richness of counter-play and tactics that is very satisfying. Some other common poison-tile formations are depicted in Diagram 2.

The formations in the top left and bottom left are other simple examples of poisoned tiles that cannot become islands. The top right shows a formation for the light-coloured tiles that might have become an island, but is poisoned now that Dark has taken square **j8**. The bottom right shows a good island and a one-tile sandbar that is trapped by that same-coloured island. The player does not have enough legal squares to build it into an island.

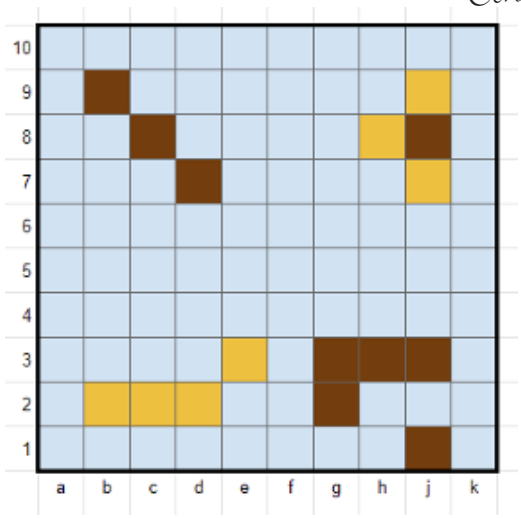


Diagram 2: Further examples of poisoned tiles

Edge play

In the beginning of games, most placements tend to be around the centre. As the game progresses, play necessarily moves towards the edges of the board. Here lie some interesting problems that do not exist in the centre. In the cramped area of the edges—and most often, doubly cramped by the existing islands in the centre, in addition to the edge of the board—it can be easy to trap an opponent's sandbar in such a way that it no longer has the space ever to become an island. See Diagram 3 for an example of this wonderfully treacherous business.

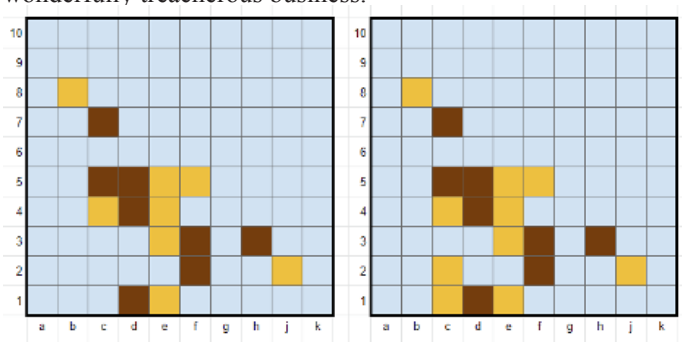


Diagram 3: Example of edge play

On the left of Diagram 3, Dark's last move was **c5 & d1**, perhaps eyeing a future bridge across **e2**. On the right, Light's reply, **c1 & c2**, traps the sandbar on **d1** such that it cannot now form any part of an island.

In assessing the viability of a sandbar, a very useful concept may be borrowed from the game Go. That is, the idea of *liberties*. Because your opponent may place two tiles on their turn, a sandbar generally needs three free squares to build out on in order not to be subject to becoming trapped. This simple concept can save a lot of time in practice.

The Cut

The scoring scheme of Ponte del Diavolo must, of course, be the primary driver of one's strategy. The general rule is that the largest island group will win. Though, this is general, and can sometimes be overcome.

Let us take a simple example of a game that concludes with Light having a three-island group and a two-island group, while Dark has a four-island group and a one-island group. Dark has won, of course: 6+3=9 is less than 10+1=11. But, observe that both players formed five islands and connected them with a minimum of four bridges. (The "minimum" because an island group could include a connection that consists of two bridges across a sandbar.) If we take this lesson to heart, the crucial point to remember is that you will encounter situations where you must sacrifice your own next island or bridge in order to play a purely blocking move to stop your opponent from forming a winning group. This is easily said, but in the quest for more points it is frequently overlooked, even by experienced players.

This is truly the heart of this beautiful game. Best play requires that you are both building the larger group (or groups), while, at the same time, placing your tiles and bridges in such a way as to cut-off your opponent from creating the larger group (or groups). The depth of strategy that comes out of this dynamic tension is what I feel elevates this game to the realm of the classics.

Endgame trap

The race to place the right bridge first across key squares—that ideally will also cut off your opponent—is central. But, there is still another twist. This wrinkle may be unappreciated for many, many games. It usually reveals itself in the form of an unexpected loss in a game one was certain of winning.

The race to place tiles on *key squares* first must be contrasted with another important factor, the *guaranteed squares*. Formations often occur that mean that your opponent cannot place either a bridge or a tile on certain squares. See Diagram 4. When those squares are useful to your scoring, this is, obviously, a helpful thing. It means that you may wait on placing tiles on those guaranteed squares and continue to fight for more points—or to impede your opponent's score—on other contested squares.

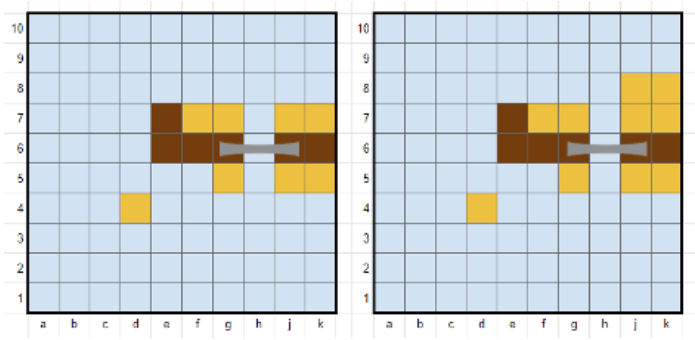


Diagram 4: Guaranteed squares

On the left of Diagram 4, it is Light's move, but there is no urgent need to place a bridge over square **h7**. Dark cannot block it with a tile. Nor could Dark at any point create a way to put a bridge of their own over **h7**. To the right, therefore, Light can tend to the pressing matter of building the sandbar at **j7-k7** into an island with, **j8 & k8**.

When a player is depending upon a large number of guaranteed, but, as yet, unrealized points, they can get an unpleasant surprise. I will remind you of Rule 4, above: "The game ends when either player can no longer legally place two tiles and chooses to pass." If the board is filling up, it is not uncommon for the end to come sooner than expected. Then those "guaranteed" points may not arrive in time to secure the victory! This has happened to me and, I expect, to most players who have played enough games of Ponte del Diavolo.

Interestingly, this rule has been the subject of some controversy. My opinion is that it is an excellent, balancing rule. The goal is to win; the margin is of no consequence. The serious player should know when the game will end and ensure they have their points scored before that time.

(Continued on page 43)

Bhargage

A Decktet Game Like Cribbage

by Kerry Handscomb

There are many trick-taking games and rummy games, but only one Cribbage. We can speculate what Cribbage might look like if played with a deck that is entirely different from the standard 52-card Cribbage deck. The Decktet is just such a deck, and Bhargage is a version of Cribbage played with the Decktet.

The Decktet is a six-suited deck devised and illustrated by P. D. Magnus. One of the joys of the Decktet, setting aside its unusual structure, is the whimsical artwork on each of the cards. The full Decktet consists of 45 individually illustrated cards. The alternative Capital Decktet has exactly the same structure, but with a completely different set of delightful illustrations. The images on both decks evoke a bizarre, quasi-medieval world populated by talking animals. As P. D. puts it in the *The Decktet Book*, "TheDecktet is the kind of tarot deck they use in the alternative universe where Charlemagne was a badger."

The Decktet has been around since 2008, and already, a great many new games have been designed for the Decktet. One of these, Quincunx, has some similarities to Cribbage, but it is a Decktet version of Cribbage Squares, rather than a Decktet version of Cribbage, per se. Although Bhargage is new to the Decktet, it borrows a uniquely Decktet scoring combination, the *bharg*, from the older Decktet games Bharg and Bharg Deluxe.

Cribbage is a traditional game in our world, played by most people at one time or another in Britain, where Cribbage began, and in many other countries. We may imagine that Bhargage is just such a game in the strange Decktet universe, the kind of game played in a world where Charlemagne was a badger.

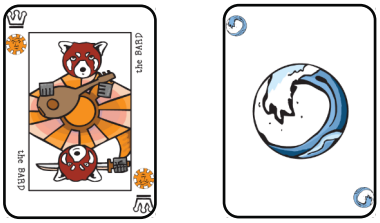
The Decktet

Before getting to the game itself, I will explain the Decktet structure, so that you can follow the rules even before acquiring the Decktet. To repeat, the Decktet has six suits, Moons, Suns, Waves, Leaves, Wyrms, and Knots:

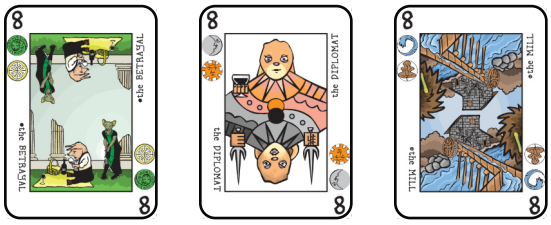
The Decktet suits

Each card can have one, two, three, or even zero suits. There are six Crowns, each with one suit symbol, one Crown for each suit. Similarly, there are six Aces, one for each suit.

The Crown of Suns and the Ace of Waves



There are three cards each for the numbers 2 to 9. Each number card has two suits. The three suit cards for any particular number contain between them all six suits:



Example of a Decktet number rank

The following image, one side of an additional card that comes with the Decktet, shows the distribution of suits between the number cards:

Distribution of Decktet suits

You can see that some suit combinations occur three times, whereas other suits do not go together on the number cards. Experienced Bhargage players are familiar with which suits go together more frequently or less frequently, and use this knowledge to maximize their chances of getting a bharg.

The Crowns, Aces, and number cards, totalling 36 cards, constitute the basic Decktet. The Extended Decktet adds four Pawns, four Courts, and an Excuse, for the total of 45 cards. Each Pawn and each Court has three suits; the Excuse has zero suits:

Examples of a Pawn and a Court, and the Excuse

The following image is the reverse side of the additional card shown above, with the distribution of suits between the Pawns and Courts:

Distribution of suits between Pawns and Courts

All Bhargage players should be familiar with the unique pair of cards, one Pawn and one Court, which together constitute the only two-card bharg (see below).

Lastly, each of the cards is a Character, Event, or Location, with an unobtrusive symbol on the card face that indicates the category to which the card belongs. These symbols are missing on the card images we are using here. However, for Bhargage only the Character category is significant, and the Character cards are easy to spot, with a single large image of a person (i.e., animal), somewhat like the court cards in a regular deck:

Examples of the Character cards

So there is the Decktet itself, and now for the game Bhargage, a Decktet version of Cribbage.

Introduction

Bhargage is similar to our own game of Cribbage, curiously closest to the oldest form of our game, Five-card Cribbage, rather than the now standard Six-card Cribbage. Of course, Bhargage has some different scoring combinations, because of the unusual cards of the Decktet. The linear deck of Cribbage is substituted by the fluid, interwoven deck of Bhargage. The Decktet cards and scoring combinations give Bhargage an entirely different flavour. Frequently, Bhargage presents interesting decisions that are quite alien to Cribbage thinking. Nevertheless, the Bhargage rules will be easier to follow if you have some background familiarity with Cribbage.

Players and cards

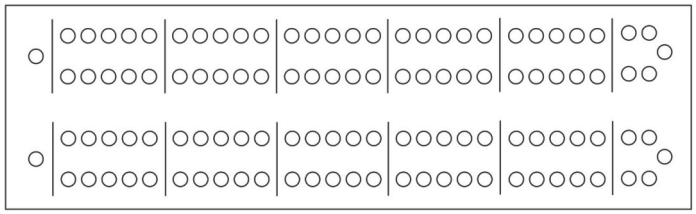
Bhargage is a game for two players. Use one Decktet set of cards with all extension cards, including Pawns, Courts, and the Excuse, making a deck of 45 cards. The cards are ranked in the following order: Excuse, Ace, 2, 3, 4, 5, 6, 7, 8, 9, Pawn, Court, Crown. Including the numbered cards, the Aces, Crowns, Pawns, and Courts, there are twelve ranks of cards—plus, of course, the Excuse. There are three of each numbered rank, six Aces, six Crowns, four Pawns, and four Courts. The Excuse is the single card in the the lowest rank; the Crowns are the highest rank.

Object of the game

Bhargage is usually played up to 111 points, "eleventy-one," in the game's vernacular. The first to accumulate 111 points wins immediately. [Tolkien aficionados may recognize "eleventy-one" as Bilbo's birthday from the beginning of *The Lord of the Rings*.]

Board and pegs

Bhargage players usually use something like a Cribbage board to record scores. The image below shows a traditional Bhargage board design, which is similar to the old-style 61-point Cribbage board—a single circuit of the Bhargage board is 56 points. The 61-point Cribbage board originated with the oldest form of our game, Five-card Cribbage, which is lower scoring than the standard Six-card game. Five-card Cribbage is played up to 61 points, a single circuit of the board, whereas Six-card Cribbage uses two circuits, up to 121 points. Bhargage is higher scoring than Five-card Cribbage, and is generally played over two circuits of the Bhargage board, up to 111 points.



Bhargage board design

The single hole at the end of both sets of tracks is *Home*. Just as in Cribbage, the first point scored is on the outside track closest to Home. The players score with pegs, "up the outside and down the inside," finishing the second circuit in Home, to score 111 points. Again, just as with Cribbage, the players use two pegs each, where the peg behind counts the number of points from the peg in front each time a player scores.

Without a Bhargage board, a Cribbage board will do. Play up to 121 points, as for a game of Cribbage, but start the scoring with 10 points for each player.

Solitaire Bhargage uses both tracks, but plays only a single circuit.

Deal

The two players cut for deal, and the player cutting the lowest rank of card becomes the dealer. If the two cuts have equal rank, the players cut again. The deal rotates between the players. The mechanism for choosing dealer is identical with that of Cribbage. The dealer shuffles the deck and offers it to the other player to cut. The dealer deals 5 cards face down and one at a time to each player, and places the remainder of the deck face down between the two players.

Discard

The players look at their cards. Each player discards two cards face down to the bhargage. The bhargage belongs to the dealer and is scored by the dealer at the end of the deal, as with the crib in Cribbage. Ownership of the bhargage rotates with the deal, and only the dealer ever counts the bhargage, again, the same as in Cribbage.

Up-card

After players have discarded their two cards to the bhargage, non-dealer lifts a portion of the remainder of the deck. Dealer takes the top card and places it face up on top of the deck once the non-dealer has restored together the two portions of the deck—just as the players do in Cribbage.

If the up-card is a Character, the dealer immediately scores 2 points, "2 for the Chief."

The upcard plays no further part in the game until the players score their hands. In this respect, it is the fourth card in each player's hand and the fifth card in the bhargage.

Play of the cards

The cards have the following values: 2, 3, 4, 5, 6, 7, 8, and 9 have their number value; Ace has value 1; Crown 10; Court 0; Pawn 0; Excuse 0. The zero-valued cards are an unusual feature of Bhargage, with huge implications for the play of the cards and scoring the hand and bhargage. Note that the Excuse has no suits in addition to no value, which also is significant for scoring.

After each player has discarded two cards face down to the dealer's bhargage, non-dealer leads a card by playing it face up. Play alternates, with each player placing her played cards face up in a pile in front of her, splayed slightly so that the values and any suit(s) of previously played cards can be seen, as in Cribbage.

When a player plays a card, that player must state the running total of values of all cards played so far. The running total of values can never exceed 23. Players must play cards if they are able, including zero-value cards, while keeping the total no greater than 23. If one player has no cards left which will keep the total count no greater than 23, that player must pass, and then the opponent must continue, if possible, with more cards played, one by one, while maintaining the total no greater than 23.

The play of the cards in Bhargage finishes after the first count to 23, even if the players have cards left in their hands, just as the play of the cards in Five-card Cribbage finishes after the first count up to 31. Six-card Cribbage, of course, can continue with a second and even third count up to 31. The lower count of 23 in Bhargage seems reasonable, given that the average value of a card in Bhargage is 4.4, whereas the average value of a card in Cribbage is 6.5.

Players should keep the cards from their two hands separate. Neither the bhargage nor the up-card has any role in the play of the cards.

Scoring during the play of the cards

Combinations of cards played can be scored. The collection of the last few cards actually played in the count up to 23 is considered for scoring, whoever played them, exactly as in Cribbage. A player who plays a card to make the following combinations scores them immediately.

Last card: When no more cards can be played, the player who played the last card scores 1 point (“1 for last"), unless the total is 11, which scores 2 points (“11 for 2”), or 23, which scores 3 points (“23 for 3”).

11: If a player plays a card to make the total value of cards played so far equal to 11, that player scores 2 points (“11 for 2”). If the other player now plays a zero-value card (i.e., Court, Pawn, or Excuse), the score is again “11 for 2.” The original player can now play a second zero-value card for another score of 2. The players may continue with third and fourth zero-value cards, each time scoring “11 for 2.”

23: If a player plays a card to make the total value of cards played so far equal to 23, that player scores 3 points (“23 for 3”). If the other player now plays a zero-value card (i.e., Court, Pawn, or Excuse), the score is again “23 for 3,” and so on, just as with the score for 11.

Pair: If the last two cards played by both players have the same rank, the player who played the second scores 2 (“2 for a pair”).

Three of a kind: If the last three cards played by both players have the same rank, the player who played the third scores 6 (“6 for three”).

Four of a kind: If the last four cards played by both players have the same rank, the player who played the fourth scores 12 (“12 for four”). There are only three of each numbered card rank, so numbered cards cannot be used to score four of a kind—nor can four Crowns, for example, because the count would be taken over 23.

Five of a kind: Five of a kind, likewise, scores 20 (“20 for five”).

Six of a kind: The only possible six of a kind is six Aces. The player who plays the sixth Ace immediately wins (“Game!”).

Bharg: If the last several cards played contain between them exactly one copy of each suit, then the player who played the last card scores 6 points (“6 for bharg”). The Excuse can be one of the last few cards played included in the bharg. In particular, if one player scores for bharg, the opponent can put down the Excuse and score “6 for bharg” himself.

The combinations of cards of the same rank are called sets. Note that several different scoring combinations can be made with the play of a single card. For example, a single card can simultaneously count to 11, form a pair, and form a bharg. If play of a single card simultaneously creates several different scoring combinations, then all are scored immediately. Here is an example of the scoring in the play of the cards:

Example of scoring in the play of the cards

The non-dealer (top) plays an Ace, and the dealer responds with a Crown, saying, “11 for 2.” Non-dealer responds with a zero-valued Pawn, also to say, “11 for 2.” Again, dealer plays the Excuse for another “11 for 2.” Lastly, non-dealer plays the 8, to say “19 for 6” (scoring for bharg). The last four cards played, the 8, the Excuse, the Pawn, and the Crown contain between them exactly one copy of each suit. It does not matter that the Excuse is in the middle, because the Excuse has no suits. The dealer has another 8 remaining, and would like to score for the pair, but cannot play it because it would take the count over 23. The dealer says, “Go!” and the non-dealer says, "1 for last" to finish the play of the cards.

The Bhargage patter during play is very similar to that of Cribbage, and Cribbage players will soon get used to the differences.

Scoring the hand and bhargage

When the play of the cards has finished, by making the total of cards played as close to 23 as possible, but not greater then 23, both players pick up the cards they have played and score their hands. The non-dealer scores first, followed by the dealer, and then lastly the dealer scores the bhargage. The order of scoring is the same as in Cribbage. Both players effectively have hands of four cards, their original three cards plus the up-card. The dealer's bhargage effectively consists of five cards, including the up card. The following combinations are scored.

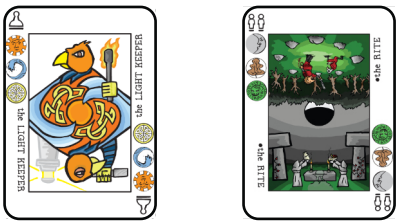
Two combinations may differ only by one card. Every distinct combination scores. This understanding of distinct scoring combinations is just the same as in Cribbage.

11: A collection of cards whose total value is 11 scores 2 ("11 for 2"). The most common 11 combination is Crown-Ace. The hand Crown-Crown-Ace scores 4 points for 11's, two Crown-Ace combinations, which differ by one card and share the Ace. If the up-card is a Pawn, say, there are now four 11 combinations, scoring two each. Each of the Crown-Ace combinations can be with or without the zero-value Pawn. The total score is 4 x 2 = 8. With zero-value cards, the scoring of 11's may appear complex, although it is not really difficult.

The best way to make the calculation is to evaluate how many points you score for 11, first without any zero-valued cards. Then, with one zero-valued card, multiply the score by 2, because the zero-value card can be included or not with each combination. With two zero-valued cards, neither can be included in each count combination, or either one, or both. Therefore, with two zero-valued cards, multiply the score by 4. Likewise, with three zero-valued cards, there are eight possibilities for making new distinct combinations with zero-valued cards, so multiply the score by 8. At least two non-zero-valued cards are needed to make a count of 11. Therefore, even in the five-card bhargage, we do not need to consider the multiplier with four zero-valued cards.

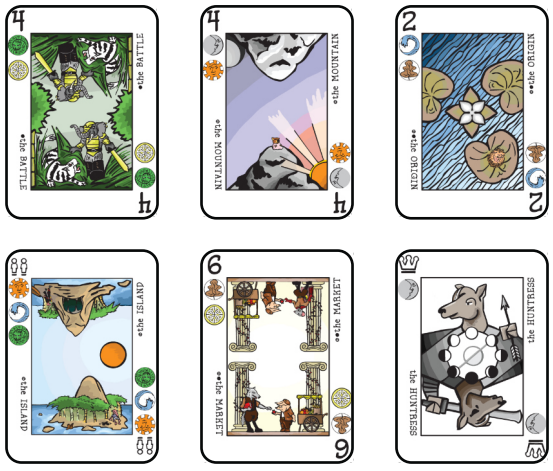
Sets: Sets score the same as in the play of the cards. A pair scores 2, three of a kind scores 6, four of a kind scores 12, and five of a kind scores 20. Even the bhargage has only five cards, so six of a kind is impossible in scoring of hand or bhargage.

Bharg: A bharg is a combination of cards that together have each of the six suits once and only once. Bhargs are relatively uncommon, even in the bhargage. A bharg scores 6 points. A bharg can consist of as few as two cards. In fact there is only one possible two-card bharg:



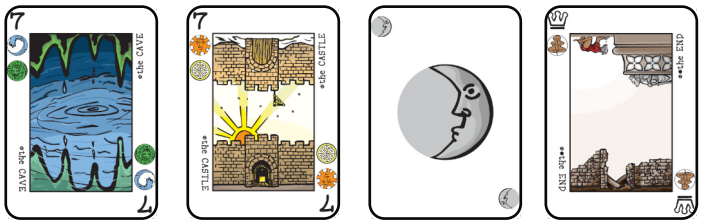
The only two-card bharg

Theoretically, a bharg can consist of as many as six cards. The six Aces in suits or the six Crowns in suits, for example, are two theoretical bhargs with six cards. However, in the hand, the largest bharg would have four cards, and in the bhargage five cards. Most bhargs consist of three or four cards. Here are two three-card bhargs:



Two examples of three-card bhargs

An lastly, one example of a four-card bharg:



A four-card bharg

Note that the set of all three of a particular number-value is always a bharg. See, for example, the three 8's above.

As with 11's, a card can be in more than one scoring bharg combination. Every distinct bharg combination is scored, where distinct scoring combinations may differ by only one card.

Any of the 45 cards can contribute to a bharg, even the Excuse, which has no suit. If a player has one or more bhargs in the hand, together with the Excuse, these bhargs can either be with our without the Excuse, each possibility constituting a distinct scoring combination. An Excuse in the hand or bhargage effectively doubles the scores for bhargs in the hand or bhargage, respectively.

Friends of the Chief: If the up-card is a Character, the dealer has already scored "2 for the Chief." If the up-card is a Character, then any Character card in the players' hands also scores 1 point, "1 for the Chief's Friend." Friends of the Chief are not scored in the bhargage. A Friend need not share a suit with the Chief.

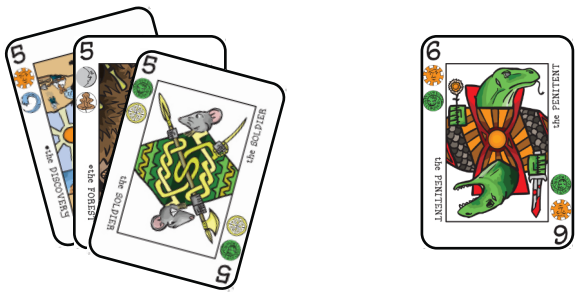
A "Chief's hand," with a Chief up-card, occurs about a third of the time. There are usually a few more points scored, for the Friends as well as for the Chief itself, during a Chief's hand.

Sequences are scored in Cribbage, but not in Bhargage, neither in the play of the cards, nor in the scoring of hand or bhargage.

In the hand or bhargage, players usually evaluate their hands in the following order: any 11's s (with multiplier for zero-valued cards), any sets, any bhargs (with multiplier for Excuse), and lastly any Friends of the Chief.

The players usually add up total scores in hand or bhargage before recording the score on the board.

Here is an examples of scoring in hand and bhargage, with the up-card on the right:



The player will say, "11 for 6 [i.e., three 11's], a bharg is 12, and one for the Chief's Friend is 13." The total score is 13, usually kept as a running total, as in Cribbage, and then the 13 points are marked on the board.

Alfred's Wyke puzzle solution from page 35

The winning move is 3-1 (d2+,c3)! from Destroyer. This defends b3 and the twin threats to c1 and c3 must be answered with 2-1-1 (c3,c1,*). For example, 2-1-1 (c3,c1,b3). Finally, Destroyer plays 2-2 (c1,c3), again defending b3 and Builder cannot defend both c1 and c3.

The player will say, "11 for 2, times 8 is 16 [i.e., for three zero-valued multipliers], 12 for bhargs is 28 [i.e., the unique Pawn and Court two-card bharg, times 2 for the Excuse]." The Chief's Friend does not score in the bhargage.

Shortage

After either player has scored their hand, or after the dealer has scored the bhargage, the opponent may claim shortage points. Points are scored for every suit that is lacking in the hand or the bhargage, respectively:

- 1 suit lacking scores 1 point
- 2 suits lacking scores 3 points
- 3 suits lacking scores 6 points
- 4 suits lacking scores 10 points

No hand or bhargage can be composed entirely of one suit, even with the Excuse, so 4 suits lacking is the maximum.

The up-card belongs to the hand or bhargage, and the suit(s) of the up-card are included when determining shortage.

Winning

The order of scoring is non-dealer's hand followed by shortage, dealer's hand followed by shortage, and lastly bhargage followed by shortage.

Whenever a player reaches 111 ("eleventy-one") or more, either in the play of the cards or scoring of the hand or bhargage, including scoring for shortage or scoring 2 for the Chief, that player wins immediately. Just as in Cribbage, Bhargage players do not bother to complete a hand if one of the two players has reached the winning score.

A loss by shortage is often accompanied by shouts of "Muggins!" A loss by shortage counts double.

Below is a table that summarizes all the scoring opportunities in Bhargage.

Variant

The rules above are complete. Cribbage players, when first learning Bhargage, may feel the impulse to score sequences. Sequences may be used in Bhargage and scored exactly as they are scored in Cribbage. On the other hand, players may find sequences too much to keep track of along with bhargs and shortage, neither of which exist in Cribbage. Not scoring for sequences probably is the better game.

A more promising variant option is to score "23 for 3" in the hand and bhargage, as well as during the play of the cards. This was the original rule, although I felt eventually that it was too much to keep track of, along with the 11's, sets, bhargs, and Friends—and, anyway, Cribbage does not count 31 in the hand or crib. On the other hand, Cribbage would need a minimum of four cards to make 31, whereas Bhargage can reach 23 with only three cards, so the extra scoring opportunity might make more sense in Bhargage than in Cribbage. Feel free to use "23 for 3" more widely.

Combination	Turn-up	Play of the cards	Hand	Bhargage
Chief	2 (dealer)	-	-	-
11	-	2	2	2
23	-	3	-	-
Pair	-	2	2	2
Three of a kind	-	6	6	6
Four of a kind	-	12	12	12
Five of a kind	-	20	-	20
Six Aces	-	Game!	-	-
Bharg	-	6	6	6
Friend of the Chief	-	-	1	-
Shortage of 1	-	-	**-1**	**-1**
Shortage of 2	-	-	**-3**	**-3**
Shortage of 3	-	-	**-6**	**-6**
Shortage of 4	-	-	**-10**	**-10**

Notes

For players new to Bhargage, the bhargs may be difficult to keep track of, both during the play of the cards and in scoring the hand and bhargage. Experienced players may develop an intuition for bhargs—not "card sense," but "bharg sense." Nevertheless, a few suggestions may be useful for those just starting to play Bhargage.

To check for bhargs in the hand or bhargage, a tip is to look for shortage first. If you are missing a suit in hand or bhargage, obviously a bharg is impossible. A second tip for spotting bhargs is that the cards of a bharg must contain exactly six suit symbols. Setting aside the Aces and Crowns, which have one suit each, the only possibilities are 3-3 (i.e., the unique two-card bharg), 2-2-2, or 3-2-1. Two or three Aces or Crowns can replace the two-suit or three-suit cards, respectively.

Beginners will find it difficult to know how to discard to increase the chance of scoring a bharg in their hand or bhargage, or conversely to decrease the chance of the opponent scoring a bharg in the opponent's bhargage. However, new players should focus on improving the shortage position with an appropriate discard: you should aim to put more suits in your own bhargage and fewer suits in your opponent's bhargage, while keeping as many suits in your hand as possible. You will find that this focus on shortage will naturally provide more bhargs, approximating the "bharg sense" of an experienced player.

A simple defence against a bharg in the play of the cards is to play a card that shares a suit with the previously played card. Then, no card the opponent can play will make a bharg, because the last three cards played obviously must have at least two copies of one of the suits. The exception is if the opponent can make a two-card bharg. However, the two-card bharg is rare. As long as you do not play one of the two cards that make up the unique two-card bharg, your opponent cannot score bharg if your played card shares a suit with the opponent's last played card.

A bharg in the play of the cards is quite a rare occurrence. However, the type of defensive thinking discussed in the previous paragraph is quite common: Match a suit of the previously played card to eliminate the possibility that your opponent can complete a bharg. The possibility of a bharg significantly affects the play of the cards, even though bhargs are rarely scored

Because there are six Aces and six Crowns, it is far easier to collect sets of Aces or Crowns than it is to collect sets of the numbered cards. Three Aces, for example, scores 6, as does three 5's, which seems to be unfair, because three 5's is far harder to achieve. However, a set of three of any numbered card is also a

bharg, and so the three 5's score another 6 for being a bharg—which helps balance the apparent disparity.

Again, because there are so many Aces and Crowns, it is easy to collect sets of them, but also it is easy to put them together to make 11's. It is usually good to keep Aces and Crowns in the hand, instead of putting them in the opponent's bhargage. A second balancing factor, however, is the score for bharg, and more commonly the losing of shortage points. Aces and Crowns have only one suit, and getting rid of them may reduce the risk of shortage. Moreover, putting them in the opponent's bhargage may put the bhargage at greater risk of shortage.

The Excuse is often a difficult choice to discard to an opponent's bhargage, even though it has zero suits and may give you shortage points from the bhargage. However, it may be useful in your own hand as a multiplier for 11's. While it rare to see the Excuse as a multiplier for bhargs in the hand, it is more commonly used for this purpose in the bhargage.

The zero-valued cards are very useful to go with 11's, and in this respect they play a similar role in Bhargage as the 5's do in Cribbage. However, there are nine of them in total, one fifth of the deck, so they are more prevalent than the 5's in Cribbage. You will want to keep zero-valued cards in your hand if you have 11's, or a good chance of 11's, or discard them to your own bhargage if you think your hand has a low probability of 11's. Of course, you will want to keep zero-valued cards out of your opponent's bhargage, especially with the fairly high probability that your opponent will put one or even two zero-valued cards in his own bhargage—with any 11's in the bhargage it could result in a disastrously high score for your opponent.

The zero-valued cards are also good for the play of the cards. The lead of any card other than a zero-valued card offers your opponent the chance to score 11 for 2 immediately. The lead of a zero-valued card precludes this possibility. You may think it better to hold on to the zero-valued card, to bounce back with your own 11 for 2 if your opponent reaches 11. However, your opponent may also hold a zero-valued card to play in turn. The use of zero-valued cards in this respect is close to the role of the Ace to 4 cards in Cribbage, as leading an Ace to 4 in Cribbage prevents your opponent from scoring 15 for 2 right away.

Playing a matching numbered card to score 2 for a pair may seem risky. Your opponent may be able play the third to score 6 for three of a kind and also 6 for the bharg—12 points in total. However, there will be only one card of that rank left in the deck, and you can expect to gain rather than lose in the long run by taking these pairs. A similar argument is made in Cribbage for taking a pair during the play of the cards.

Bhargage thinking, as we have seen, is sometimes similar to Cribbage thinking. Nevertheless, the zero-valued cards and the unusual bharg combination both offer something quite new.

Solitaire

Solitaire Bhargage uses both tracks of the board. The player uses one track, and the "opponent" uses the other track for shortage. Shuffle the cards, and deal three to yourself, two face down to the bhargage, and then two more to yourself. Look at your cards and then discard two to the bhargage. Turn up the top card of the deck. Score your hand and then the bhargage. Each time, if there is shortage, the "opponent" scores it on the other track. Deal the second hand, using the up card as the first of the three cards you receive initially. Continue in this way for six hands. Finally, including the last turn-up card, there will be three cards left in the deck. Score these three cards, but do not score shortage for them. You win if you have completed one circuit of the track and scored enough additional points to overtake the "opponent's" shortage score. Play without scoring for the Chief and Friends of the Chief, or for an easier game score for the Chief and his Friends. ■

(See Acknowledgements on page 56)

(Ponte del Diavolo, continued from page 37)

Final thoughts

There are a couple of general attributes that attract me to an abstract. The first is a range of strategies. In Chess, for example, people often talk about a certain game as having a slow, positional character. In contrast, other Chess games are considered to be quite different and of a dynamic and tactical bent. In the same way, I believe Ponte del Diavolo gives the player a choice of strategic approaches. Is your style more to race towards a high score? Or, should you harass your opponent's efforts and pursue a defensive, lower-scoring game where you nevertheless obtain the decisive few points to win? In a quick look at recent games on BoardGameArena, I have found a completed game (not a resignation) with a combined score of 61 (37 to 24) and another with a combined score of a mere 17 (11 to 6). Clearly, these were very different games!

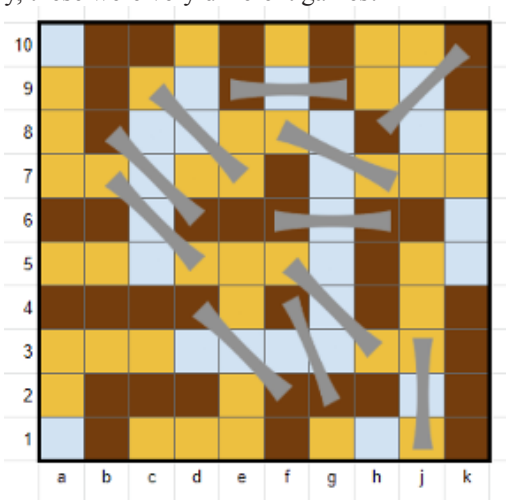


Diagram 5: A completed game

Diagram 5 shows a completed and razor-close game. Points are tied at 11. Tie-breaker one is tied at seven islands each; tie-breaker two gives Dark the win, with six bridges to Light's five.

Another attribute I like a lot in an abstract is a great, potential depth of player skill. I will compare Ponte Del Diavolo to Chess again. In Chess, it is well known that a player with even moderate experience will have a large advantage over a novice. Likewise, the intermediate player has little chance against an expert or master; and those players will rightly tremble if they are facing a grandmaster. The great classics, like Chess and Go, have this property that you can play and study for many years, always getting better—and, hopefully, always finding an opponent who can still challenge. Now, I am certainly not in a position to claim that Ponte del Diavolo can equal the classics as regards the heights of player skill. In my view, this is a question that can only be answered after many more years of play, by many more players. Still, all the signs I have seen so far, leave me very optimistic about the future of this fascinating game.

Acknowledgement

The header image show the box cover of the original 2007 edition of Ponte del Diavolo from the BoardGameGeek page, taken by Carsten Wesel, April 2007 (https://boardgamegeek.com/image/202016/ponte-del-diavolo). This image shows Alex Randolph, designer of Twixt, standing on the bridge. Martin Ebel dedicated his game to Alex Randolph. ■

K. C. is an IT architect and long-time Chess player. He enjoys modern abstracts Tzaar, Circle of Life, and Santorini, in addition to Ponte del Diavolo. His blog covers games, and other subjects (http://burbatory.blogspot.com/). ~ Ed.

Spider Variations

...with different decks

by Kerry Handscomb

Spider is distinguished from many other card solitaires in that complete suit sequences need to be built in the layout before they can be discarded, with the object finally of getting the whole deck off in suit sequences. Almost every game involves puzzling situations that need careful thought. In 150 Ways to Play Solitaire (1950, p. 146), Alphonse Moyes writes, "The devotees of Spider, who are legion, claim it as the king of all solitaires." One famous devotee of Spider was American President Franklin D. Roosevelt, and George F. Hervey in The Illustrated Book of Card Games for One (1977, p. 129) even suggests renaming Spider, "Rooseveldt's Favourite."

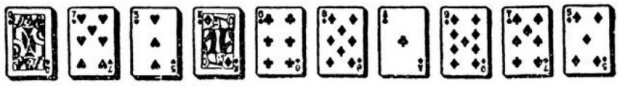
This article will describe several versions of Spider played with alternative decks: the Decktet, the Tarot deck, the Mah Jong deck, and a six-suited deck. It will give me the opportunity to highlight several interesting design features of these Spider games.

Here is an early version of the rules of Spider, from Culbertson's Card Games Complete. which may be regarded as the standard and original form of the game:

SPIDER

Cards. Two packs.

Layout. Deal a tableau of ten piles: six cards in each of the first four piles, and five cards each in the others. Turn the top card of each pile face up, all other cards face down.



Object of play. To discard all eight suits from the tableau.

Play. On the exposed tableau cards, build in downward sequence, regardless of suit. (But it is advantageous to build in suit when able.) Ace is low; nothing may be built on it. Kings are movable only to spaces or discard. On baring a face-down card in the tableau, turn it face up. A space (made by removal of an entire pile) may be filled by any available card from the tableau.

The top of each tableau pile is always available. In addition, cards of the same suit and in correct sequence with that at the top of the pile may be moved with it as a unit. (Such a build-in-suit may also be broken at any point.)

Whenever play comes to a standstill, deal from the stock a batch of ten cards, one on each tableau pile. All spaces in the tableau must be filled before such a deal.

Whenever thirteen cards of a suit lie on top of a pile, in correct sequence from ace at top to king at bottom, the suit may be lifted off and discarded. It is not compulsory to discard when able (there may be an advantage in breaking the suit to aid in tableau manipulation).

Standard early rules for Spider

According to the frontispiece of this edition of *Culbertson's Card Games Complete*, the book was originally published in 1917. I contacted noted card-game expert David Parlett for confirmation of the origins of Spider, who responded that 1917 is likely to be too early for a Culbertson book. Nevertheless, in 1917 it is possible that Ely Culbertson was in Paris, making a living from his skill with cards. Indeed, Hubert Phillips, in the foreward of the version of the book I am referencing, writes that he is involved in preparing the *English* edition. It seems plausible that the book was originally published in French in Paris in 1917, when Culbertson would have been 26 years old.

Another relatively early description of the rules of Spider is found in *The Complete Book of Solitaires and Patience Games* by Albert H. Morehead and Geoffrey Mott-Smith (1949). The authors cite the following passage from Somerset Maugham's *The Gentleman in the Parlour* (1930):

"I reproached myself as I set out the cards. Considering the shortness of life and the infinite number of important things there are to do during its course, it can only be the proof of a flippant disposition that one should waste one's time in such a pursuit . . . But I knew seventeen varieties of patience. I tried the spider and never by any chance got it out . . . ."

Maugham's story is autobiographical, about a trip through parts of Southeast Asia in 1922. David Parlett wrote in response to my query, "Spider itself, I think, derived from German Patience, which was recorded in one of Mary Whitmore Jones's many volumes of patiences. She died around 1917." It seems clear that Spider originated sometime around the end of the Nineteenth Century and the beginning of the Twentieth. Perhaps the rules shown in the image above do indeed date from 1917 and are one of the very earliest descriptions of Spider.

With the growth in use of personal computers from the end of the Twentieth Century, and the inclusion of Spider as a solitaire in various operating systems, Spider is probably now more popular than ever. In this article I wish not to investigate Spider itself, but rather Spider as it might be played with alternative, non-standard decks.

Spider positions often require considerable thought. For example, you may need a particular card that is buried deep in the layout. Often, to make progress, you must create empty columns, for empty columns facilitate the movement of sequences of cards that are in number sequence but not suit. Empty columns, too, are the only way to get Kings out of the way. As cards are dealt, row on row, the layout typically becomes more and more entangled. The first complete suit sequence is usually the most difficult, but once one or two complete sequences are removed the game opens up and becomes much easier. Still, I have lost many of these "won" games!

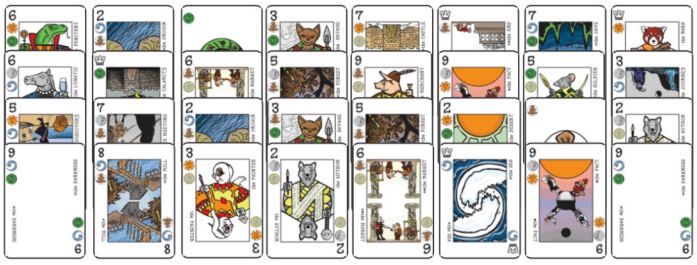
All of these features of standard Spider, and more, are present in the variants below. Myrmex is a relatively quick game, as is Wizard's Tower. Sparrow, however, is a large game, more reminiscent of a campaign than a single battle. Starfish is even bigger and requires a whole-game strategy. If you love Spider, you may enjoy these other games, too. Perhaps even non-Spider players may be drawn to the King of Solitaires and its variants.

Myrmex

An inspiration for this article was the Decktet, as described in the article on Bhargage in this issue. An excellent version of Spider played with the Decktet is called Myrmex (2011), designed by Greg James. Actually, Myrmex needs two Decktets, without the Pawn, Court, and Excuse expansions, and with one copy of each of the Aces and Crowns removed. The base version of Myrmex, therefore, uses 60 cards, which is somewhat smaller than standard Spider. There are expanded versions of Myrmex using the Pawns and Courts, but I will describe here only the base version of the game. It almost seems as if the Decktet suit system were designed for a version of Spider. I should note, however, that the version presented here is the easiest, or entry-level, game, and there are many levels of difficulty in Myrmex.

The author told me how he came up with the name Myrmex. In standard Spider, the game is solved when *eight* full suit-sequences of cards are removed with solved sequences, two of each suit. The solution to Myrmex results in six suit-sequences, one for each suit. Spiders are of course eight-legged creatures, but Greg has an interest in ants, which are six-legged animals in the Order Myrmedae. Hence, he called his game Myrmex.

Instead of the ten columns of the 104-card standard Spider, Myrmex uses eight columns, with four cards initially in each column, as shown below.



Myrmex initial layout

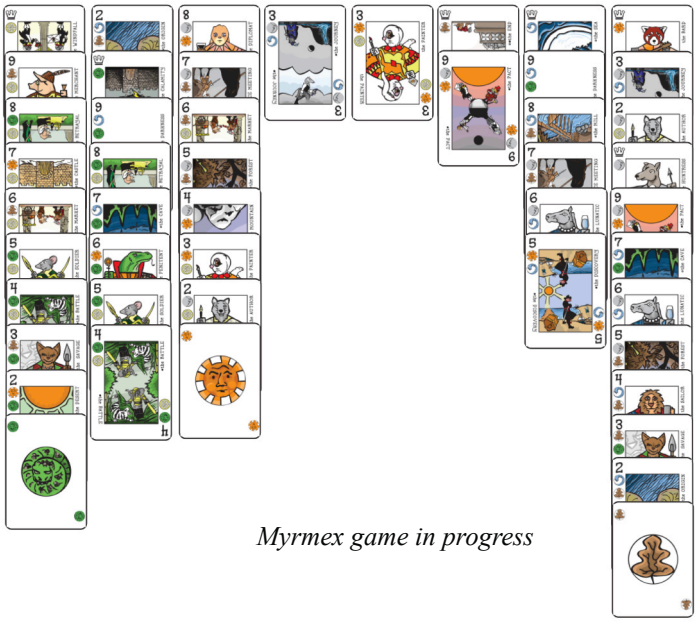
The version of Myrmex I am describing has all cards face up initially, whereas standard Spider would have all but the last row face down. All variations of Spider that I will describe here start with all cards face up. This provides for more opportunity to plan and a more skilful game, in my view.

In Myrmex, two or more cards stacked together in a column are in "suit sequence" if they all share at least one suit. Just as with standard Spider, cards stacked together in descending number sequence and suit sequence at the bottom of a column can be moved as a unit to stack on a card at the bottom of another column that is one higher than the top card of the moving sequence. Cards that are not in suit sequence can only be moved one by one, just as with standard Spider. These rules regarding the moving of whole sequences of cards provided they are in suit sequence are common to all versions of Spider.

When you get stuck in Myrmex, deal another row of cards to the bottom of each column. There will be three re-deals of eight cards, and then a final deal just to the first four columns. Standard Spider requires that all columns be filled before a re-deal, but in Myrmex one or more columns can be left empty for a re-deal. Again, I think this provides for a more skilful game, and this is the rule used for all versions of Spider described herein.

Complete sequences of cards at the bottom of a column, from Crown to Ace, which are also in suit sequence, can be removed and discarded from the game. The objective is to remove all six suit sequences of ten cards each.

The image below shows a game in progress from the starting position above after two re-deals. If the 3-2-1 sequence is moved from the bottom of the first column to stack on the bottom of the second column, the whole sequence in Wyrms from Crown to Ace can be discarded.



Myrmex game in progress

This sample game above can then quickly be won. As with all versions of Spider, the most difficult sequence to remove is usually the first. As cards come out of the layout, space opens up, and the game usually gets easier.

The Decktet is brilliantly appropriate for playing Spider, because of the way that the card suits interweave in number sequences. The choice for any card with two suits is which of those suits is primary in constructing a ten card suit sequence. Suit sequences are fluid in Myrmex in a way that is simply not present in standard Spider.

The version of Myrmex I have described is much easier to win than standard Spider. Several factors make this so. To start, only ten cards need to be stacked up to form a suit sequence rather than 13. Likewise, in standard Spider only two possible cards can be stacked on another in suit and number sequence, whereas there are four possibilities for each card in Myrmex—setting aside the Crowns and Aces.

In every version of Spider, the key to winning is the ability to get empty columns. Sequences in number but not suit can be moved as a whole, but usually only if there are empty columns that can take cards temporarily while shifting the sequences over, where the cards, remember, can only be moved one by one. Empty columns are easier to form, and the game therefore easier to win, with more columns and fewer cards initially in each column. Depending on which type of deck is used for playing Spider, these choices concerning the number of columns and the number of cards initially in each column are key ways for balancing the ease or difficulty of the game.

The version of Myrmex described here, as well as several other more challenging variants, can be played in the brilliant app by M. C. DeMarco.

Wizard's Tower

Standard Spider and Myrmex might be called "pure" versions of Spider, because there is only one type of card and sequence. The next kind of Spider, Wizard's Tower (1998) by Karen Deal Robinson, is played with a 78-card Tarot deck, and is the first of the two Spider games presented here that is not pure, as it were. The Tarot deck contains four sequences of 14 cards each, but also a separate sequence of 22 "Trump" cards. The rules for stacking the regular suit sequences and the Trumps are different.

Wizard's Tower is unusual also because it contains fewer cards than most other versions of Spider, and all are dealt face up

initially, in six row of 13 cards each. The image below shows a typical starting position. I have used the Rider-Waite Tarot images, although any Tarot deck will work. However, the layout is quite large, and the miniature version of the Rider-Waite Tarot deck works well in a limited space.

Starting position of Wizard's Tower

Stacking in the suit cards by number is in the order King (high), Queen, Knight, Page, and then from 10 to 2, and lastly Ace (low). The four suits are Wands, Cups, Discs, and Swords. As usual in Spider games, sequences stacked in suit order can be moved as a whole, and otherwise cards are moved singly. The four suit sequences are discarded from the board as they are completed.

The Trumps have different stacking and removal rules from the suit cards. One Trump can be moved and stacked onto any other Trump of higher number. Remember, the 22 Trumps are numbered from 21 (The World) down to 0 (The Fool). Trumps that are stacked in number order without gaps in the counting can be moved as a whole—this is the equivalent for the Trumps of stacking in suit sequence. For example, the sequence 9-8-7-6 of Trumps can be moved as a whole, and stacked on the 10 or put at the top of an empty column; but the sequence 9-8-7-5 cannot be moved as a whole. Only the Trump 5 can be moved from the bottom of the column, to stack on a higher Trump or to be put into an empty column.

When The Fool, Trump 0, is uncovered at the bottom of a column, it can be taken out of the layout and set aside. When thereafter the Trump 1 is uncovered, it can likewise be removed from the layout, and stacked on top of the 0 to one side of the main layout. And so on for the Trump 2, and on up to Trump 21, stacking them one-by-one as they become exposed, until there is a complete sequence from 0 to 21 to one side of the main layout. This complete trump sequence is the "Wizard's Tower."

The image opposite shows a development from the opening layout shown above, on the way to a won game. Very quickly now in the above game, all the Trumps can be taken off to complete the Wizard's Tower. The suit sequences will then fall one by one. Other won games I have played of Wizard's Tower have one or two suit sequences removed before making substantial progress with the Trumps.

Wizard's Tower can be challenging, although I think that standard Spider may be even more difficult. A benefit of Wizard's Tower is the distribution of all cards is known at the outset. This means that careful planning is possible from the start. And, of course, if you see a number of key cards deeply buried at the outset—primarily The Fool!—you can just shuffle the cards and start again

Wizard's Tower game in progress

The author recommends "weaving" for an easier game. In other words, you can take off any card from the bottom of a column and set it aside. The card can be re-entered to the layout later, if it can be properly stacked at the bottom of a column or put at the top of an empty column. Thereafter, another card can be taken out of the layout—and so on, with the player allowed to weave one card at a time.

Spider parameters

The reason that Wizard's Tower is relatively difficult is that there is only one copy of each card, and therefore a unique set of cards is needed to complete each of the suit sequences. In standard Spider, there are two copies of each card. Likewise in Myrmex there are two copies of each card, although the suit system in Myrmex makes direct comparisons difficult—there are usually four cards that can stack on any numbered card in Myrmex. Moreover, the suit sequences in Wizard's Tower are long, at 14 cards, compared with 13 in standard Spider and 10 in Myrmex. The difficulty of Wizard's Tower is mitigated because of the fewer number of cards, the large number of columns, and the openness of the game.

A good way to think of Wizard's Tower is that the main

objective is to remove the suit sequences. The Trumps are there as blockers, and the taking off of Trumps in sequence is the way to combat the blocks. The special nature of the Trumps and the way they are handled means that Wizard's Tower is not a pure Spider.

These various parameters of standard Spider, Myrmex, and Wizard's Tower apply also to the two other forms of Spider that I will present below, Sparrow and Starfish. Please refer to the table below. Generally, with more suits and longer sequences Spider variations are harder; with fewer copies of each card and fewer columns, Spider variations are easier. The degree to which the game is open affects the amount of planning that can be done initially, potentially making the game easier. With Spider variations that are not pure, with different rules for different cards, some of the cards may be viewed as blockers. Sparrow is similar to Wizard's Tower in this respect.

The number of rows dealt initially is an interesting parameter. With fewer rows dealt initially, there is less untangling to be done, and it is easier to get empty columns—crucial in moving around non-suit number sequences. However, fewer rows initially means that the game is less open, and less planning can be done, making the game potentially harder.

Game	Pure	Total cards	Suits	Copies of each card	Sequence length	Columns	Initial rows	Open -ness
Spider	Yes	104	4	2	13	10	5-6	10%
Myrmex	Yes	60	6**	2	10	8	4	53%
Wizard's Tower	No	78	4	1	14(22)	13	6	100%
Sparrow	No	144	3	4	11(4)	12	6	50%
Starfish	Yes*	162	6	2	13	12	6	47%

** Starfish is pure with only one kind of sequence, but there are wild cards.*
*** Myrmex has 6 suits, but most cards have 2 suits each, so it does not fit into the regular pattern.*

Sparrow

The initial inspiration for this article was some email communication I had with Peter Geiger over the summer of 2020, about ShenZhen solitaire. Shenzhen is a fairly standard type of solitaire with a layout and foundations that have to be built up, except that it is played with Mah Jong cards. ShenZhen is not a Spider, but it started me wondering what Spider would be like when played with a Mah Jong deck. A Mah Jong Spider already existed, but it only used the suit cards, without Dragons, Winds, or Flowers and Seasons. Chinese Spider has only three suits, there are four copies of each card, and there are 12 columns, which makes it very much easier than standard Spider. The question was how to use the Winds, Flowers, and Seasons as blockers to make a more challenging game, inspired by the manner in which Wizard's Tower works.

Sparrow, or Mah Jong Spider, is the game that I came up with. The name "Sparrow" was suggested by Don Kirkby, because the meaning of "Mah Jong" is "sparrow," inspired by the manner that the click of tiles when shuffling resembles the chatter of sparrows. My thanks to Don, too, for testing Sparrow and the next game, Starfish.

Because Sparrow has never been described before, I present the rules below more fully than I have done for Spider, Myrmex, and Wizard's Tower. For the diagrams I use a Mah Jong font. I know this is not ideal, as it does not include any numbering or naming on the tiles in English. However, you should be able to follow the diagrams as examples even without fully understanding the meaning of all the characters. The diagrams are not essential for understanding how the game works anyway.

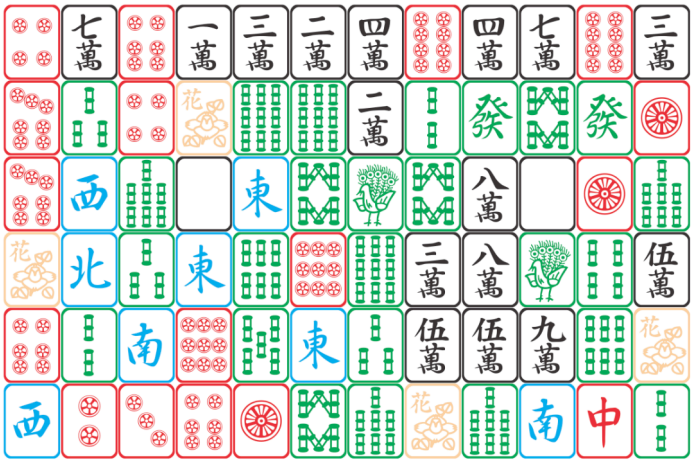
To play Sparrow, a Mah Jong set will work perfectly well. However, since this is a Spider game where you will need to move long sequences of cards back and forth now and then, you may find it easier to use Mah Jong cards. For my own play, I use a Mhing deck. Mhing is essentially a Mah Jong variant that uses the same set of tiles (or cards) as Mah Jong. A Mhing deck is perfect for Sparrow.

A Mah Jong set consist of four copies of three suits each, which run from 1 to 9. The three Suits are Bamboo, Coins, and Characters. The suits total 108 cards. Then there are four copies each of the three Dragons, Green, Red, and White; and four copies of each of the Winds, East, South, West, and North. The deck is completed with one copy each of four Flowers and one copy each of four Seasons. In total there are 144 cards/tiles.

To start with, the Dragons are counted as the tenth and highest card in each Suit: Green with Bamboo, Red with Coins, and White with Characters. The use of the Winds, Flowers, and Seasons will be described below. In the diagrams, Bamboo is green, Coins are red, Characters are black and white (with the White Dragon blank), Winds are blue, and the Flowers and Seasons are yellow.

(I chose to associate the Dragons with the suits in this order because it fits with our diagrams, and works with the colours of the Mhing deck. The standard association for special hands in Mah Jong is Green-Bamboo, Red-Characters, and White-Coins.)

Shuffle the cards and deal 6 rows of 12 cards face up. In typical solitaire fashion, each row of cards can be placed overlapping the row above to save space. The remaining cards, the stock, are set aside face down. See the example deal below. Our diagrams mimic the use of Mah Jong tiles, and are shown without overlapping.

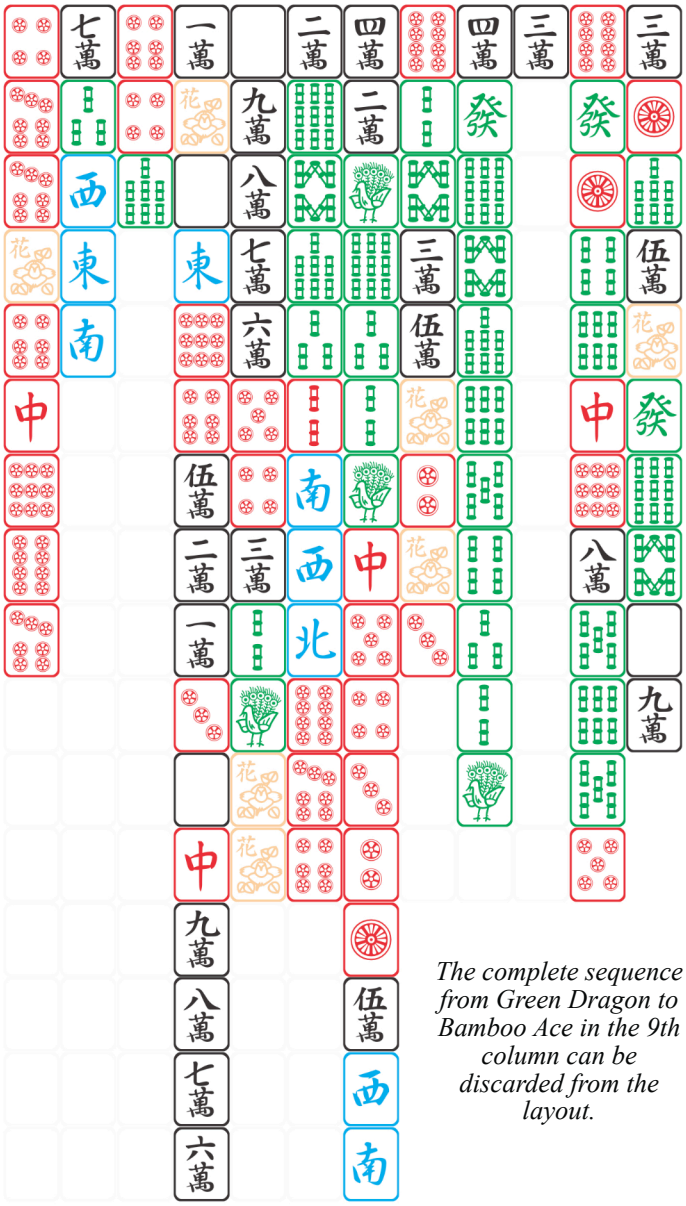


Opening layout for Sparrow

A card at the bottom of a column can be moved to the bottom of another column provided the card at the bottom of the target column is one higher than the moving card, regardless of suit. Thus, a 5 can be built on a 6 of any suit. 9's can be built on Dragons. A Dragon cannot be built on anything, and can only be moved to an empty column. There are special rules for the Winds, Flowers, and Seasons, which I will describe later.

A sequence of cards in the same suit (from high to low at the bottom of a column) can be moved as a unit. Thus 6-Bamboo, 5-Bamboo, 4-Bamboo can be moved together onto 7-Bamboo (or 7-Coins or 7-Characters).

Any single card or sequence of cards in the same suit (from high to low at the bottom of a column) can be moved to an empty column. As mentioned above, empty columns are the only way to move Dragons (or a sequence in the same suit with its respective Dragon at the top).

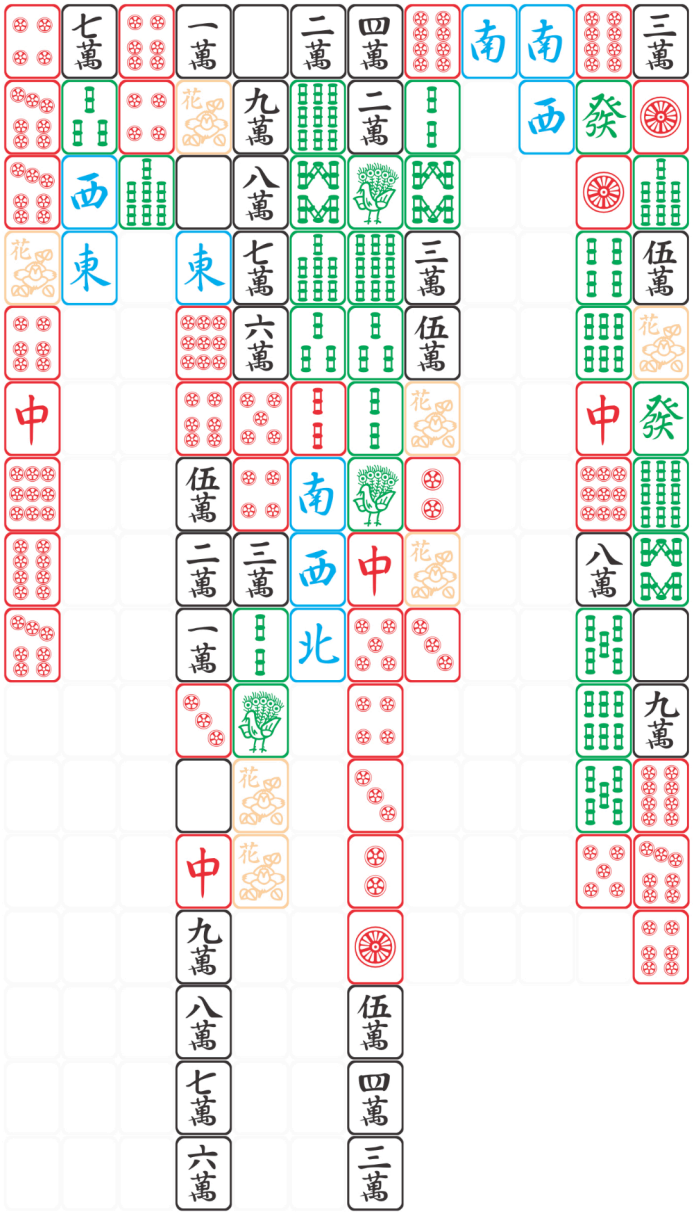


The complete sequence from Green Dragon to Bamboo Ace in the 9th column can be discarded from the layout.

Whenever you form a sequence of ten cards in the same suit, with its respective Dragon at the top, these ten cards can be gathered up and discarded from the layout. The objective is to discard all cards from the layout, including 12 of these suit sequences. *When each Dragon is complete with its tail, it takes flight!* The Winds, Flowers, and Seasons are dealt with differently.

The diagram opposite shows a development of the initial layout above, after three deals and a set of four Winds has been removed (see below), and you are ready now to discard a complete Bamboo sequence in the ninth column, headed of course by the Green Dragon.

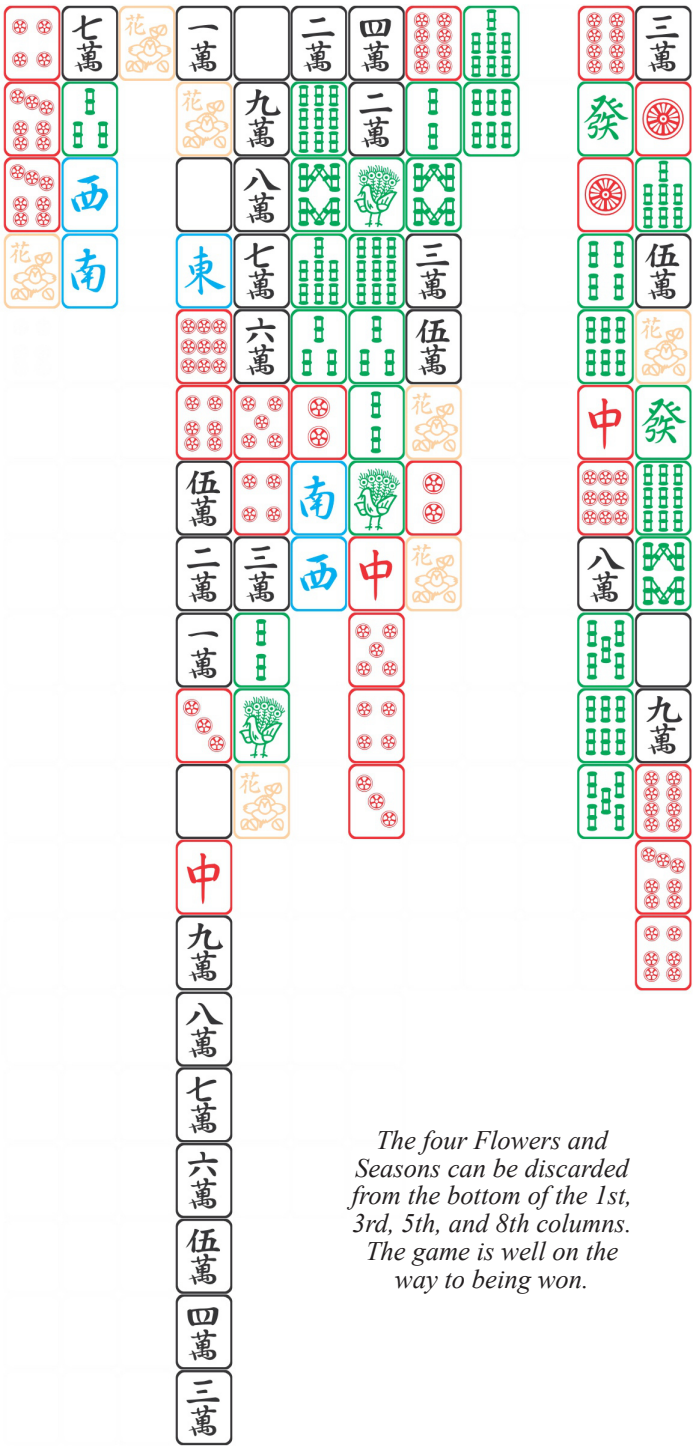
Now to the rules for the Winds, Flowers, and Seasons. The Winds are effectively a fourth suit and the Flowers and Seasons are a fifth suit. A Wind can only be moved and built singly on another Wind or into an empty column. There is no order among the Winds, and one Wind can be built on any other. However, a maximum of *three* Winds can be stacked together in a single column. If the bottoms of four different columns have the Winds North, South, East, and West in any order, then these four Winds can be taken from the board and discarded, similarly to the sequences. The diagram below shows a further development of our example game, where a set of Winds can be discarded from the layout, at the bottom of the 2nd, 6th, 9th, and 10th columns.



The set of Winds can be discarded from the bottom of the 2nd, 6th, 9th, and 10th columns.

Likewise, Flowers and Seasons can only be moved and built singly, on another Flower or Season or into an empty column. There is no order among the Flowers and Seasons, and one Flower or Season can be built on any other. However, a maximum of *three* Flowers and Seasons can be stacked together in a single column. If the bottoms of four different columns have four Flowers and Seasons, then these four Flowers and Seasons can be taken from the board and discarded, similarly to the suit sequences and the Winds. Note that for the Flowers and Seasons, unlike the Winds, any set of Flowers and Seasons can be removed. Indeed, the diagrams show only one Flower or Season image, which reflects how the game is played, all eight of them are effectively the same.

Thus, there are four sets of Winds to be removed altogether, and two sets of Flowers and Seasons. The game is won when all 18 sets (12 suits, 4 Winds, and 2 Flowers and Seasons) are discarded from the game.



The four Flowers and Seasons can be discarded from the bottom of the 1st, 3rd, 5th, and 8th columns. The game is well on the way to being won.

Whenever you get stuck, or sooner if you like, deal another set of 12 cards, one to the bottom of each column. Half the cards are dealt out initially, and the remainder will be dealt out throughout the game as six new rows. It is not necessary to fill an empty column before dealing another row.

Thus, there are four sets of Winds to be removed altogether, and two sets of Flowers and Seasons. The game is won when all 18 sets (12 suits, 4 Winds, and 2 Flowers and Seasons) are discarded from the game.

Whenever you get stuck, or sooner if you like, deal another set of 12 cards, one to the bottom of each column. Half the cards are dealt out initially, and the remainder will be dealt out throughout the game as six new rows. It is not necessary to fill an empty column before dealing another row.

Now and then you may get more than three Winds or Flowers and Seasons stacked up in a column after you deal another row of cards. This is all right and unavoidable. You are simply prohibited from stacking up four or more Winds (or four or more Flowers and Seasons) by moving cards during the play.

There are four copies of each card in Sparrow, compared with two copies in standard Spider; Sparrow has three main suits, compared with four in standard Spider; suit sequences in Sparrow are only ten cards long, compared with 13 in standard Spider. These factors indicate that Sparrow should be easier to solve than Spider—and it should be, except that the Winds, Flowers, and Seasons act as structural impediments in the array. The three-card stacking limit for Winds, Flowers, and Seasons is carefully chosen so that these cards provide the right degree of structural impediment. As it is, the game is very winnable, without being too easy.

There are opportunities for skilful play in Sparrow that are not present in standard Spider. For example, if you start stacking up Winds (or Flowers and Seasons) to move them out of the way to get at cards above them, you are impeded from creating four columns with the necessary set of Winds (or Flowers and Seasons) at the bottom. A balance needs to be struck between moving the Winds and Flowers and Seasons in the short term, because they are structural impediments, against your chances to get them off the layout entirely.

Starfish

The last of the Spider variants presented here is the six-suited Spider called Starfish. The number of suits is a key factor in the difficulty level of Spider. Six suits, rather than four, makes a huge difference. Six-suited Spider would be very, very hard to solve without some other adjustments in the rules. I devised Starfish as a proof of concept, to show that a form of Spider is indeed playable with more suits. As with Sparrow, above, the Starfish rules do not appear anywhere else, so I have presented them more thoroughly than the other games here.

Starfish requires two decks with six suits each. Each suit contains the regular 13 cards, King, Queen, Jack, and then Ten down to Ace. Each deck just has two additional 13-card suits, with different colour and different symbol.

I have been using the Blue Sea Deck of P.D. Magnus, designer of the Decktet. The additional suits, both blue, are Stars and Squids. The regular Spades, Clubs, Hearts, and Diamonds constitute the remaining four suits. There are thus 78 cards in each deck. In addition, three Jokers accompany each deck, and we need to use these, too. P.D. Magnus has redesigned all the cards, and his court cards especially exhibit the whimsical characterization that makes the Decktet itself much beloved. The two decks together plus six Jokers make up the 162-card Starfish deck,

Starfish has twelve suit sequences to remove, unlike the eight of regular Spider. The Squid suit gives the deck somewhat of a nautical flavour, and I suspect the Stars are sea stars (i.e., starfish) rather than stars in the sky. Starfish can have twelve legs, and hence Starfish is the name of the game.

The increase from four suits to six provides special challenges for a Spider-type game. If Starfish were played as regular Spider, even with the number of columns in the layout increased to twelve, it would be extremely difficult to win. The Jokers play a special role in Starfish which helps to mitigate what would otherwise be a very tough game.

Set aside the six Jokers, leaving a deck of 156 cards. The six Jokers constitute the Troupe, and are kept aside ready to be used as required in the layout. Deal six rows of twelve cards face up, overlapping the rows to save space, as is usual with card solitaires. Set aside the remaining cards face down to one side as the stock.

The order of the cards is the usual King (high), Queen, Jack, Ten, 9, ..., Ace (low). A single card can be moved from the bottom of one column to be built on another card at the bottom of another column provided the card it is built on is one higher. For example, a 5 can be built on a 6. Any card can be placed in an empty column. In fact, the only way to move a King is to an empty column. Two or more cards at the bottom of a column that are in suit-sequence order (from high to low at the bottom of a column) can be moved as a unit. The moving suit sequence can be built on a card at the bottom of another column that is one higher than the top card in the moving suit sequence, or the moving suit sequence can be moved to an empty column. Indeed, an empty column is all that will take a moving suit sequence with a King at the top.

Whenever a 13-card suit sequence is completed at the bottom of a column in the layout, from King to Ace, it can be gathered up and discarded from the layout. The goal is to complete all twelve suit sequences to win the game.

As soon as you get stuck, or earlier if you like, deal another row of twelve cards to the bottoms of the twelve columns. Empty columns do not have to be filled before dealing another row. There will be seven additional rows of twelve cards to deal after the initial six.

The Jokers have a special role. At any time in the game a Joker can be played from the Troupe to replace any card in the layout. The replaced card must be immediately built to the bottom of a column or placed in an empty column, according to the usual rules. If the replaced card cannot be built in this way, the Joker is not permitted to replace it.

Whenever, in the usual course of play, a Joker is subsequently uncovered at the bottom of a column, the Joker is immediately taken up and returned to the Troupe.

Note that if the Joker replaces a card that is part of a suit sequence, the suit sequence is broken by the Joker, and the suit sequence can no longer be moved as a unit.

The game is very winnable with six Jokers, as described. You may try with fewer Jokers, and I think just four Jokers in the Troupe is the minimum for a tough but winnable game.

Starfish strategy

Use of the Jokers is key to Starfish strategy. Should you save them to fill in the last few cards of a sequence you are trying to construct, or should you use them as much as possible earlier to untangle cards? One Joker strategy is to hold them back as much as possible until there are enough cards of a suit in the layout to complete a full suit-sequence, and then go all out with all the Jokers to complete this suit sequence.

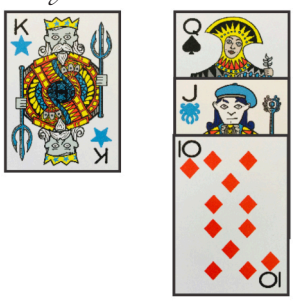
The most basic way of using Jokers throughout the game is to move sequences that are not in suit, as shown in the series of images below.

In this first way of using Jokers, they are *recycled* Jokers, taken immediately back into the hand.

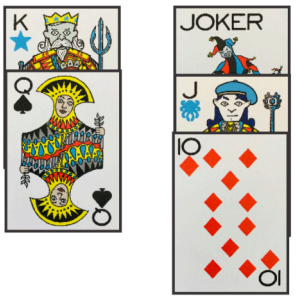
A second use of the Jokers is to release cards that are buried deep in the layout, without immediately releasing the Jokers back into the Troupe. These *buried* Jokers may be difficult to uncover again and may even stay buried for much of the game.

As the game begins, there will typically be many opportunities to recycle Jokers to move even quite long non-suit sequences. The Jokers may enable many of the cards in the first six rows to be put in suit sequence order, and throughout the game recycled Jokers will play the same role in helping to untangle the cards.

The rubber was conducted with all that gravity of deportment and sedateness of demeanour which befit the pursuit entitled 'whist'—a solemn observance, to which, as it appears to us, the title of 'game' has been very irreverently and ignominiously applied. ~ Charles Dickens in Pickwick Papers*, Ch. 6*



With two jokers in the Troupe, the 3-card non-suit sequence headed by the Queen can be built on the King.



Step 1: Replace the Queen with a Joker and build the Queen on the King.

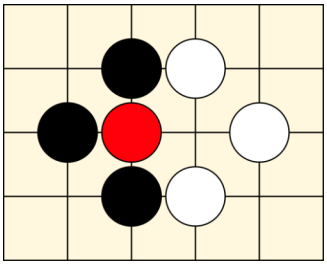
Step 2: Replace the Jack with a Joker and build the Jack on the Queen.

Step 3: Build the Ten on the Jack and take the two Jokers back into the Troupe.

One point to bear in mind, when collecting cards for a particular suit sequence, is that only 1/6 of the cards in the deck can contribute to any particular suit sequence. In comparison, 1/4 of the cards can contribute to a suit sequence in standard Spider. What this means in Starfish is that it may take several rows dealt over the original six before even one complete suit sequence is present in the layout, however tangled.

The recycled Jokers are used to help untangle cards in the layout as much as possible. Keeping more Jokers in the Troupe means it is easier to move cards around. However, as more rows are dealt, the layout necessarily becomes more convoluted and unmanageable, no matter how efficiently the Jokers are recycled—unless complete suit sequences are removed from the layout. Buried Jokers, nevertheless, can keep things moving, but at the cost of depleting the Troupe, at least temporarily.

(Continued on page 52)



A game by Mark Steere

Redstone

by Kerry Handscomb

Mark Steere is a game designer responsible for dozens of games since his first, Quadrature, in 1992. His games are often very clear conceptually, what he calls having good "architecture." How to play them well is often much more opaque. Mark adheres to certain principles in his game design—foremost, games should always necessarily have a decisive outcome, no draws, in other words, and no repeating positions.

Go itself does not adhere to Mark's principles. For example, repeating positions can occur, in *ko*. Of course, Go has supplementary rules for handling *ko*; and otherwise, Go can eliminate draws artificially by giving an extra half point of *komi*. Redstone is a game by Mark Steere that takes another approach to "perfecting" Go by removing the possibility of repeating positions and draws.

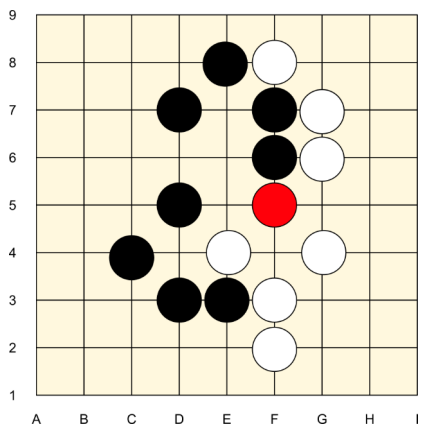
The board starts empty. The players move and capture, as in Go, except that whenever a capture is made, a red stone is used for the capturing move, instead of a white or black stone. If there is a move that reduces a group of stones to zero liberties, then that move must be made with a red stone. The red stones belong to neither player, and are completely invulnerable to capture. The red stones are effectively "board edges." Placing a red stone on a point is equivalent to removing that point from the game entirely.

Unlike in Go, suicide moves are possible, killing one of your own groups by reducing the group to zero liberties. Of course the suicide move must be made with a red stone. The player may simultaneously reduce two or more groups to zero liberties with a single move. In this case, again unlike Go, all groups of whatever colour are captured and removed from the board simultaneously. In this respect, the Redstone rules are perhaps a little cleaner and more logical than those of Go.

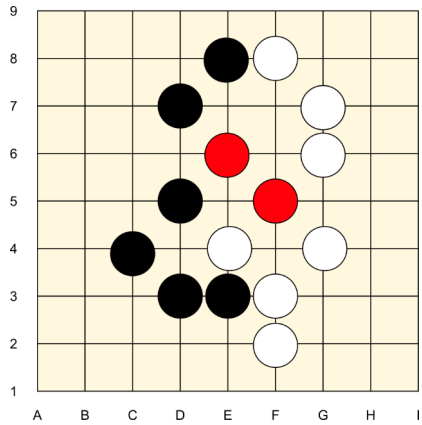
There is no passing in Redstone. A player must always move. The objective in Redstone is to capture all enemy stones. Captured stones do not count for points.

Black moves first, and the pie rule is used to even out Black's advantage. After Black has placed the first stone, White can decide to switch sides and play Black, or stick with White and play the second stone.

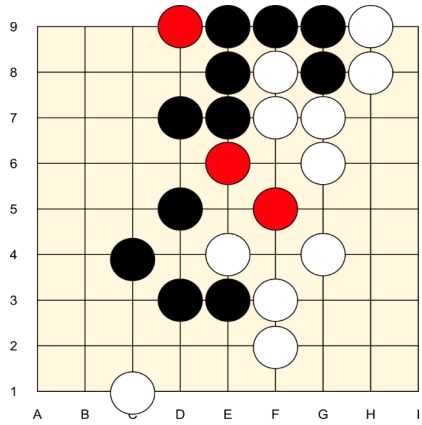
Some tactics come over from Go, but some are different in Redstone. There is no passing, so no *seki*. Of course, *ko* no longer exists, which was Mark's main objective with the game. Ladders work in Redstone. At first thought, the standard kind of snapback position from Go does not carry over to Redstone.



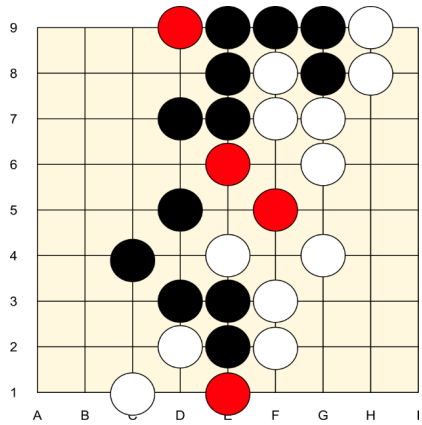
However, above is a snapback-like position from an actual game. The White move is the throw-in at E7. Then Black may place a red stone at E6, capturing the white stone at E7 and the two black stones at F7 and F6 simultaneously, resulting in the diagram below. In the actual game, Black responded differently to the White throw-in at E7, and White subsequently captured with E6.



For those used to Go, odd things can happen in Redstone close to the edges of the board. See the position below, later in the same game. White has just played C1. In regular Go, Black would not be able to prevent the stone on C1 connecting to the white stones on the right.



This tactic does not work in Redstone. Black can play D1 to disconnect the white stone. White can try D2, Black responds E2, and then White captures at E1, resulting in the diagram below.



The white stone on C1 is no longer connected to the white stones on the right, because the red stone is a barrier as impassable as the edge of the board itself!

(Continued on page 54)

(Continued from page 50)

The appearance of one or more complete suit sequences after a deal inspires the use of recycled and buried Jokers to get these sequences in the proper order to remove them from the board. With fewer cards in the layout, it becomes easier to recycle the Jokers to further untangle the cards.

There is a balance to achieve in using the Jokers. Early in the game you should avoid burying Jokers, but recycle the Jokers as far as possible to untangle the cards. As the layout becomes larger and more unmanageable, the pressure to bury Jokers rises. You must give in to this pressure for the game to be winnable, but the balance is to keep recyclable Jokers in the Troupe, despite the pressure to bury Jokers.

With so many cards, Starfish is a long game, but there is a rhythm to the swinging back and forth of the sequences. Unless you are burying a Joker, you will soon find it enough to keep an eye on the number of Jokers in the Troupe and the number of empty columns to see whether a sequence can be moved—without having actually to play the recycled Jokers to the layout. The size of the Troupe needed to accomplish the movement of sequences is balanced by the necessity of burying Jokers to release important cards.

Conclusion

Standard Spider is a much beloved game, probably played by millions around the world, either electronically or still with physical decks of cards. The basic version of Spider is very skilful, even though it is highly closed, and the distribution of few cards is known at the outset. Another rule of standard Spider that reduces the skill level a little is that empty columns need to be filled before dealing another row, removing the choice that it might be better to leave the column empty and increase the chance of being able to empty it again .

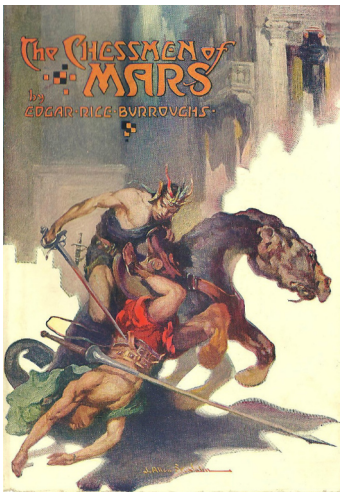
I recommend amending these two rules, even for standard Spider, where the rows are dealt face up initially and columns can be left empty before another row is dealt. There is a version of Myrmex that is more closed, with the first three rows dealt face down initially. However, I do not recommend this version in order to maximize the skill level in the game. Of course, Wizard's Tower is one hundred percent open anyway, and is perhaps more of a puzzle than a game in this respect. Otherwise, all games presented here, including also the brand new games Sparrow and Starfish, use an open deal to start and permit columns to be left empty before re-dealing.

Wizard's Tower and Sparrow demonstrate the possibility of non-pure Spiders, with mixed ways of handling the cards. The Trumps in Wizard's Tower and the the Winds and Flowers and Seasons in Sparrow are structural impediments in the layout that increase the difficulty level of games that would otherwise be too easy—even for Wizard's Tower, I suspect.

Starfish answers the question of what Spider would be like with more suits. Six suits seems a reasonable limit in this direction. I have experimented with eight suits, but I have not succeeded yet in making a playable and interesting game with eight suits. As far as I know, the Jokers in Starfish provide a completely new mechanism among Spider games. Both Sparrow and Starfish have a fairly high level of skill, the first because of the decisions around how to handle the Winds, Flowers, and Seasons; the second because of the decisions around how to use the Jokers.

So there it is, an answer to my question of the forms that Spider would take when played with different types of deck. I hope there are many more Spider games out there, lying dormant in still other decks. I hope that readers may be inspired to investigate this topic further. ■

(See Acknowledgements on page 57)



The Scoring in Jetan

by Fredrik Ekman

Everyone knows that a Chess Rook is worth five points and a Knight is worth three, and everyone knows that a Queen is worth more than the Rook and Knight combined (although some would disagree with that last statement). But what about Jetan? Can I sacrifice my Dwar for a Flier? Is my Padwar equal to a Warrior? And is the Panthan really the weakest piece on the board? These questions have been debated at least since the 1960's, and we still have to find an answer. This article aims to take another step towards understanding.

In the appendix to *The Chessmen of Mars*[1], Edgar Rice Burroughs wrote: "The Martians ... put a price upon the head of each [Jetan] piece, according to its value, and for each piece that a player loses he pays its value to his opponent." Burroughs, however, never specified what these "values" are.

One possibility is that perhaps the number of feathers or jewels on a piece indicates its score. (The Flier has no feathers, but the exactly equal piece Odwar does have five feathers.) This is certainly possible, even though these "points" seem a bit too imprecise to be of any real use (see table at the end of this article). In the past, there have been at least eleven other attempts to attach point scores to the eight unique Jetan pieces. Most of these are summarized in an appendix to an article about Jetan that I wrote in *ERBzine*.[2] Unfortunately, the scores are difficult to compare, because different rule interpretations were used for different systems, so if you compare a so-called "Free Panthan" with the standard Panthan, you are essentially comparing two different pieces. For this article, I have picked two different interpretations, based on the standard rules, and made by players that I know were experienced and whose judgement I value. The two are George Fergus[3] and Larry Lynn Smith.[4]

Another method is to let the computer do the work for you. The software *Zillions of Games*[5] has the feature to calculate a score for each piece. This is in fact the method used by Jean-Louis Cazaux and Rick Knowlton in their scoring system.[6] The score is dependent on the piece's position, relative the other pieces on the board, so that will have to be taken into consideration. For this article, I have made my own examination by positioning each piece close to the board's centre.

The table below shows the three different scoring systems. The figures in parentheses are for the jumping Thoat. I have halved Fergus' scores in order to make them easily comparable with Smith. For Zillions, I used Smith's implementation, set to the variant "Chained Wild Jetan with Chained Warriors" (which corresponds to the standard rules as presented in *AG19*[7]). When right-clicking a piece and selecting "Properties," *Zillions* gives a 4- to 6-digit number, which I have normalized to 1.0 for Panthan and rounded to one decimal for the others.

As you can see, Fergus and Smith are fairly close, but compared with the computer only Panthan and Flier match. The

humans undervalued the Chief and overvalued Warrior, Padwar, Thoat, and Dwar, compared with Zillions. In order to see whether human or computer is more correct, I next intend to conduct a formal evaluation of all the Jetan pieces.

	Fergus	Smith	Zillions
Panthan	1	1	1.0
Warrior	1.5	2	0.9
Padwar	2	2	0.8
Thoat	3.5	3(3)	1.2(2.7)
Dwar	5	4	2.3
Flier	5	4	4.7
Chief	10	10	19.1
Princess	-	0	2.6

No matter how you twist it, this evaluation is going to be a simplification. Many aspects will not be reflected; I just give a handful of examples here. To begin with, the Chief, with its greater reach, is on average going to be more limited by the board edges than a Padwar or a Panthan. Nor do the complexities of the different phases of the game, for example, how many pieces are still on the board, come into play. Another complication is how the Panthan, for each forward step it takes, burns its bridges to one tenth of the entire board. This last problem I have chosen to address by a simplification, assuming that a Panthan is, on average, positioned on the fourth rank of the board.

For the evaluation, I have identified the following factors that would seem to be important to define the score of a Jetan piece: Reach (orthogonal and diagonal), size of footprint (number of reachable target squares), paths per target (average), jumping ability, reachable squares on the board, ability to go back, and ability to capture.

For each factor, I have determined a value between 0 and 1, where 0 is "no value" and 1 is the highest score in the game. For example, jumping is either off (0) or on (1), whereas size of footprint varies between 0.10 (5 target squares) for Panthan and 1.00 (48 target squares) for Chief and Princess.

	Orthogonal reach	Diagonal reach	Footprint	Paths average	Squares	Backwards	Royalty	Captures	Jumping	Raw score
Panthan	1 (0.33)	1 (0.33)	5 (0.10)	1 (0.14)	70 (0.70)	0 (0.00)	0 (0.00)	1 (1.00)	0 (0.00)	7.6
Warrior	2 (0.67)	1 (0.33)	8 (0.17)	1.5 (0.21)	50 (0.50)	1 (1.00)	0 (0.00)	1 (1.00)	0 (0.00)	18.8
Padwar	2 (0.67)	2 (0.67)	8 (0.17)	1.5 (0.21)	25 (0.25)	1 (1.00)	0 (0.00)	1 (1.00)	0 (0.00)	19.6
Thoat	2 (0.67)	1.5 (0.50)	12 (0.25)	1.33 (0.19)	100 (1.00)	1 (1.00)	0 (0.00)	1 (1.00)	0 (0.00)	27.3
Dwar	3 (1.00)	1.5 (0.50)	16 (0.33)	2.25 (0.31)	100 (1.00)	1 (1.00)	0 (0.00)	1 (1.00)	0 (0.00)	42.0
Flier	3 (1.00)	3 (1.00)	16 (0.33)	2.25 (0.31)	50 (0.50)	1 (1.00)	0 (0.00)	1 (1.00)	1 (1.00)	84.1
Chief	3 (1.00)	3 (1.00)	48 (1.00)	7.17 (1.00)	100 (1.00)	1 (1.00)	1 (1.00)	1 (1.00)	0 (0.00)	256.0
Princess	3 (1.00)	3 (1.00)	48 (1.00)	7.17 (1.00)	100 (1.00)	1 (1.00)	1 (1.00)	0 (0.00)	1 (1.00)	256.0

Next we need to combine the values into one score for each piece. This cannot be done by simply adding up, because some values would then be skewed. For example, the ability to capture is much more valuable for a Chief with a footprint of 48 than for a Warrior with a footprint of 8. In order to reflect this, I added 1 to each value (to avoid zero values which would compromise the calculation) and multiplied all the values for each piece. This gives each piece a raw score, according to the table above.

The raw scores are obviously nonsense. They give no relevant information, except roughly the order of the pieces in terms of strength. Therefore we need to add weight to all the values. This is going to be partly arbitrary, since there is no formal way to ascertain how much, for example, jumping is worth relative to a large footprint. I have used my own feel for the game and then by a trial-and-error method fiddled with the weights until I arrived at scores that seemed reasonable. Then I divided each score by the Panthan's score in order to arrive at a baseline where than Panthan is always scored at 1. The results are presented in the following table:

	Orthogonal reach	Diagonal reach	Footprint	Paths average	Squares	Backwards	Royalty	Captures	Jumping	Raw score	Normalized score
Weight	*1*	*1*	*1*	*0.5*	*1*	*0.5*	*1*	*2*	*0.5*	-	-
Panthan	0.33	0.33	0.10	0.07	0.70	0.00	0.00	2.00	0.00	10.7	1.0
Warrior	0.67	0.33	0.17	0.10	0.5	0.50	0.00	2.00	0.00	19.3	1.8
Padwar	0.67	0.67	0.17	0.10	0.25	0.50	0.00	2.00	0.00	20.1	1.9
Thoat	0.67	0.50	0.25	0.09	1.00	0.50	0.00	2.00	0.00	30.7	2.9
Dwar	1.00	0.50	0.33	0.16	1.00	0.50	0.00	2.00	0.00	41.7	3.9
Flier	1.00	1.00	0.33	0.16	0.5	0.50	0.00	2.00	0.50	62.5	5.8
Chief	1.00	1.00	1.00	0.5	1.00	0.50	1.00	2.00	0.00	216.0	20.2
Princess	1.00	1.00	1.00	0.5	1.00	0.50	1.00	0.00	0.50	108.0	10.1

Comparing with the older scoring systems, we find that my method lands us pretty close to Fergus and Smith for the Warrior, Padwar, Thoat and Dwar, whereas the Chief is closer to the results from Zillions. The Flier is higher than previous estimates.

Boiling down all of the above is still not going to help us to a perfect scoring system for Jetan. To achieve that, we need many more recorded and analyzed games than currently exist. But I will try to present a tentative result that can be used for now, until someone comes up with a better suggestion.

The Panthan, being the closest equivalent to the Chess pawn, should always score 1, in order to simplify comparisons.

The Warrior and Padwar are both weak pieces. The former is particularly weak because of its slow diagonal move (augmented by its starting positions in the corners, which I did not consider in my analysis). The latter has the problem that it can only access one fourth of the board's squares (in fact, no Padwar can ever capture another Padwar). When compared one on one, each is nevertheless stronger than the Panthan, due to the latter's slow move and inability to move backwards. This may change when several Panthans are strung together. A chain of four connected Panthans may well be more than double the strength of a pair of Warriors, which do not operate terribly well together. But a basic scoring system must do away with complex situations and assume the simplest pretext. Thus, the Warrior and Padwar are stronger than the Panthan, but not much stronger. Unlike Fergus,

I assume that they are of equal strength, and put them at 1.5 each.

The Thoat is stronger than either Warrior or Padwar since its footprint is twelve squares, 50% more than the other two-steppers. Also, it can reach any square of the board. I value it at 3 points, or 4 for the jumping variety.

The Dwar has a footstep that is very similar to the Thoat's, except the Dwar has four extra squares at its orthogonal extremes. It also has greater manoeuvrability, with more ways on average to reach its target squares. It scores 4 points.

The Flier has the same number of squares as the Dwar in its footstep, but it has two great advantages. One is that it is very fast on the diagonals, double the speed of the Dwar. The other advantage is its jumping ability. The setback is that it is bound to squares of one colour. Even so, it has to be worth more than the Dwar, and I place it at 5 points.

The Chief is almost ridiculously strong, and I therefore feel that Fergus and Smith undervalued it at 10 points. My own calculated estimate, as well as the Zillions score, seems more reasonable. Some others who set scores for Jetan gave no value to the Chief, but I feel that this is not a good approach. For one thing, a score helps to evaluate whether it is worth the effort to try to block a piece, either to block the Chief itself, or to use the Chief as part of a blockade. The high score is also necessary to discourage deliberately forcing a draw if the game is played with wagers. The Chief should be worth 20 points.

The Princess, finally, is essentially impossible to put a score on. While the Princess can also be used to block other pieces (but cannot be blocked itself), the piece's inability to be used in any kind of attack means that nothing is lost by binding it in a blockade. Even so, I feel that Smith's score of 0 is not right. If that was its true value, then it could be freely captured by the other side. Therefore, Fergus' idea of no score wins my favour.

Summing up, the following table gives all the scores that have been dealt with in this article:

	Burroughs	Fergus	Smith	*Zillions*	Ekman calc.	Ekman
Panthan	1	1	1	1.0	1.0	1
Warrior	2	1.5	2	0.9	1.8	1.5
Padwar	2	2	2	0.8	1.9	1.5
Thoat	2	3.5	3	1.2	2.9	3
Thoat (jumping)	3	NA	3	2.7	4.3	4
Dwar	3	5	4	2.3	3.9	4
Flier	5	5	4	4.7	5.8	5
Chief	10	10	10	19.1	20.2	20
Princess	(1)	-	0	2.6	10.1	-

I sincerely hope that this text is not the final word on the subject of Jetan scoring. But I also hope that while we are waiting for something better to come along, the above figures give the Jetan player a tool to use when playing the game. Then with increased experience, the player can form his or her own opinion.

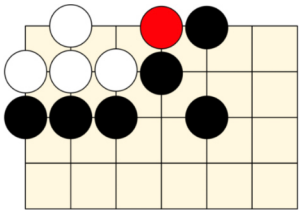
A possible next step to refine this system would be to play a lot of endgames with selected combinations of pieces set against one another. That would give one possible perspective on the usefulness of the figures. ■

References

1. Edgar Rice Burroughs, *The Chessmen of Mars*, Gutenberg edition, Appendix (in the Gutenberg e-text, the Appendix is appended to the end of Chapter 22, rather than as a separate segment)
2. Fredrik Ekman, "Exploring Jetan", *ERBzine*, 2019 (cited on 2021-01-01): https://www.erbzine.com/mag70/7030.html
3. George Fergus, "Jetan (Martian Chess)", *The Gamesman* #1, The Games Bureau, circa 1965
4. L. Lynn Smith, "The Game of Jetan or Martian Chess," (referenced on 2021-01-01): https://www.chessvariants.com/other.dir/jetanrules.html
5. Jeff Mallett & Mark Lefler, *Zillions of Games* [computer software], ver. 2.0.1p, 1998 – 2003 (registration is required to play the Jetan add-ons): https://www.zillions-of-games.com/
6. Jean-Louis Cazaux and Rick Knowlton, *A World of Chess: Its Development and Variations Through Centuries and Civilizations*; McFarland & Company; 2017, p. 379
7. Fredrik Ekman, "Jetan re-evaluated," *AG19*, pp. 28 – 31.
Header image: Edgar Rice Burroughs (1922). *The Chessmen of Mars*. A. C. McClug. [front cover], painted by J. Allen St. John.
L. Lynn Smith's implementation of Jetan: https://www.zillions-of-games.com/

(Redstone, continued from page 51)

On the other hand, red stones can form a wall against which a player can build a live group. Note that the concept of "live" groups having two eyes carries over from Go—you cannot capture a group by playing two red stones simultaneously! See the example below. The White eye on the right would be a false eye in regular Go, if the red stone were white, but the red stone makes that point like a corner, and the White group is alive.



Sacrificing stones to help create a wall is a very real possibility in Redstone. The red stones prove to be crucial bulwarks against which to build eyes. Remember, also, the object in Redstone is to eliminate opposing stones, not to score points. Your stones that the opponent captures do not count as points scored against you.

Of course, a stone cannot be placed in enemy territory if it will have zero liberties, even though suicide moves are allowed in Redstone—the capturing stone that reduces a group to zero liberties must be red!

The endgame in Redstone is quite different from that of regular Go. It comes down not to the largest territory, but rather which player has more eyes. When there are no other moves left, a player must fill in his own one-point eyes. Then, down to one one-point eye, he will be captured—by a red stone, of course.

At first, it may seem that following the creation of a sizeable vacant space by means of a large capture, that one or both players could start playing in it, triggering other captures, and so on. However, this process would be as meaningless as playing in secure enemy territory in Go—you need to be able to make two eyes for it to be worthwhile.

A 7x7 board may large enough at least for an experimental game, but 9x9 may be a good regular size. It strikes me that Redstone is a good small-board game. The smaller board, emphasizes the tactical implications of the red stones. With experience and a developed strategy larger boards may prove to be better.

Redstone needs much more investigation, but we can already see that Redstone has tactics and strategy not present in Go. And at least the tricky *ko* rules in Go are needed no longer! ■

Thank you to Paul van Wamelen for helping to investigate Redstone.

PAGODE
.... AND ITS PRECURSORS

by Stefano A. Vizzola

The cover of AG20 *featured the game Pagode from 1973. In my translation, the blurb on the original game box states, "A board game derived from 'Shuti,' an ancient game of astrology from East Asia. It is richer in problems than Chess, but simpler in its rules." I claimed there was no traditional game anywhere that is anything like Pagode. To my surprise, Stefano Vizzola sent me some further information together with a theory about the history of Pagode. The game Pagode may well originate from an East Asian game after all! As well as a description of Wufu, hypothetical ancestor of Pagode, the booklet* Ancient Games *contains rare tidbits of information about other obscure old games. ~ Ed.*

The research I conducted on the game Pagode brought to light the forgotten Waschi-Wurti, a board game with dice published by Noris-Spiele, probably between the end of the 1950's and the start of the 1960's, a period that can be deduced from the logo on the package and from a comparison with other games from this period. The game was subtitled, "Das lustige orientalische Würfelspiel" [The fun oriental dice game].

Waschi-Wurti box cover

Unfortunately, as can be seen from the illustration on the packaging, the publisher seems to have wanted to limit the sale to a young audience. The name Waschi-Wurti, as well as the sub-title and the graphics, clearly implies a Chinese relationship. The manufacturer states that, in the Asian tradition, "Waschi" were the "good spirits" (the player's own patterns), whereas the "Wurti" were the "evil spirits" (the opponent's patterns).

Waschi-Wurti contains all the essential elements that Eugen Oker (born Friedrich Gebhardt, 1919-2006), alias Valentin Siena, then used for Pagode: a board composed of 9x9 squares, the use of three colours, the placement of colours in parallel diagonal lines, and the presence of the central cross. The number of pieces is different (12 for Waschi-Wurti, 14 for Pagode), but both sets of pieces have the same colours (green and red) and the same shapes (round and square). And last, but not least, the general idea of both games is also the same, to occupy positions on the board to form patterns named after symbolic buildings: House, Tower, Pagoda, Double Pagoda in Waschi-Wurti; Hut, House, Castle, Tower, Pagoda in Pagode. Other elements differ, such as victory conditions, but the biggest difference is the roll of the dice to determine the placement and movement of the pieces in Waschi-Wurti, a fact that does not affect the value of this innovative and carefully constructed game.

Pagode board

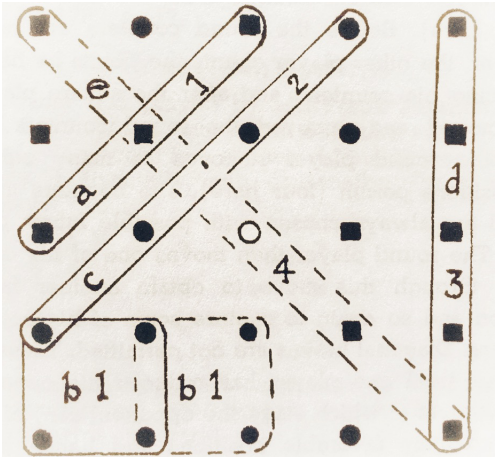
There is no doubt that Oker used both the materials and the general idea of Waschi-Wurti to develop Pagode—unless, of course, he himself was also the creator of Waschi-Wurti.

However, it remains to be asked how Noris-Spiele could develop such a complex game for such a limited range of players. We cannot fail to mention that some concepts and elements, common to Waschi-Wurti and Pagode, were already present in other games then known, such as Gala (the highlighted cross), Kegelschach (arranging a winning formation) and, perhaps, also Hip (Scientific American vol. 203, issue 4, 1960), by Martin Gardner (square formations with different sizes and orientations).

The booklet *Ancient Games from Africa, Europe, and Asia* perhaps contains some clues. Ancient Games was assembled by Lynn Rohrbough (who edited a dozen other titles on various games and folklore traditions) and published for the first time in 1938 by the Cooperative Recreation Service, Delaware, Ohio (and later re-released in a print-on-demand format in 2013, by Coachwhip Publications, Greenville, Ohio).

On pages 25-26 of *Ancient Games*, the game Wufu is described in some detail. According to the description, provided by Chang Ling-chia [not otherwise identified], the name means "wu" = "five" and "fu" = "favourable," referring to positions on the board.

Ancient Games from
Africa, Europe, and Asia
by Lynn Rohrbough



Scoring positions in Wufu, from Ancient Games, p. 25

In addition to the description, a diagram illustrates the game board, which is a 5x5 array of grid points, and all possible patterns that score points. The scoring formations are as follows: a diagonal of length three connecting two sides (1 point, **a** in the diagram); a 2x2 square (called a "well," 1 point, **b** in the diagram); a 2x3 rectangle (called a "double well," 2 points, the two **b**'s together in the diagram); a diagonal of length four connecting two sides (2 points, **c** in the diagram); a horizontal or vertical line of five (3 points, **d** in the diagram); and a diagonal line of five (called "crossing the heavens," 4 points, **e** in the diagram).

The pieces, the text says, are of two contrasting colours but, in the black and white graphics, round and square pieces are depicted, 12 each.

The board starts empty. The game takes place in two phases. Firstly, the players take turns to place a piece on an empty intersection until all 24 are placed, the central point remaining vacant. Secondly, the players take turns to move one of their own pieces one space orthogonally to a free intersection. If one player begins the placement phase, the other player begins the movement phase.

Whenever a player makes a scoring shape, he removes the number of enemies pieces according to the score of the shape. No scores are counted during the first phase, except at the end, when all pieces are placed. Then, after the first move on the board, both players add up the total scores of shapes they have made during the placement phase, removing that total number of opposing pieces each, before proceeding with the rest of the second phase. In the rest of the second phase, as a player moves and creates a scoring combination, the scoring number of enemy pieces are removed immediately.

The objective is to reduce the opposing player to two pieces, at which point he can no longer score.

What we can say here—almost with certainty—is that that Waschi-Wurti, whose very name recalls that of Wufu, was adapted directly from Wufu, perhaps, using the very description in Ancient Games. In fact, both the number and the shape of the pieces, which in Wufu only denotes belonging, would otherwise be too coincidental.

The addition of the dice allowed Waschi-Wurti to be marketed as a game for children. Pagode does not use dice, which may imply that Oker developed Pagode directly from Wufu rather than Waschi-Wurti. However, the similarities between Waschi-Wurti and Pagode, including the two types of pieces for each player and the colouring of the board, seems to indicate that Pagode is a direct descendent of Waschi-Wurti, minus the dice, and that the latter game originates in Wufu, the original Chinese game.

The reliability of *Ancient Games*, which describes 29 traditional games, including some very obscure ones, is proven by the fact that, for all lesser-known games, there are references to the sources from which they were taken, and that these references, where verifiable, are genuine—a rare case for a book of this modest scope.

We should know more about this Wufu and find at least one other independent source. In any case, it is possible that the simple materials for Wufu, which have been used by many other games, have compromised its identification—Wufu may have been mixed up with some other game, and thereby lost. Perhaps Wufu is a game without a story, short-lived, or restricted to a limited area geographically. Until now, I have not found any reference to the game "Schuti," mentioned on the packaging of Pagode. ■

Acknowledgments

- Rohrbough, Lynn (Ed.) (1938). *Ancient Games from Africa, Europe, and Asia*. Cooperative Recreation Service, Delaware, Ohio. (The edition referred to here published in 2013 by Coachwhip Publications, Greenville, Ohio.)
- Gala (or Bauernschach) and Kegelschach [in English literature often described as Conquest]: Arbeiter, Bruno & Ruhnke, Willi (1937). Brettspiele. Voggenreiter, Potsdam. (1937 ed. written in fraktur characters, 2nd ed. 1943 in latin characters.)
- Image of Waschi-Wurti from the BoardGameGeek entry by Stephan Krug, March 2016.

(Bhargage, continued from page 43)

Acknowledgements

The Decktet images were created by P. D. Magnus and are used by permission; images were downloaded from the GitHub site kept by M. C. De Marco; borders were added for this article.

A Double Decktet consists of the standard Decktet and the newer Capital Decktet. The decks have different artwork, while both belong to the Decktet universe. You may choose whichever deck you prefer to play Bhargage, or use both with one player shuffling while the other deals. However, the Spider solitaire variant Myrmex, also covered in this issue, needs two decks. Bharg Deluxe also needs two decks, a game that in my opinion is comparable to, and perhaps better than, two-player Canasta. Both decks together, and other Decktet designs, can be purchased from Drive Thru Cards.

The "traditional" Bhargage board shown was custom made by The Cribbage Guy for a reasonable price. Of course, you can play with a Cribbage board, as discussed, but some players may want to use the "real thing."

Decktet images: https://www.decktet.com/download/decktet.pdf and https://github.com/mcdemarco/myrmex/tree/master/cards
The Decktet on BoardGameGeek: https://boardgamegeek.com/boardgame/37301/decktet
Drivethru Cards: https://www.drivethrucards.com/product/214208/double-Decktet
The Deckete Book: https://www.decktet.com/book.phpBharg rules: http://wiki.decktet.com/game:bharg
Bharg Deluxe rules: http://wiki.decktet.com/game:bharg-deluxe
The Cribbage Guy: https://www.cribbageguy.com

Therefore he seems to me a very foolish man, and very wretched, who will not increase his understanding while he is in the world, and ever wish and long to reach that endless life where all shall be made clear. ~ King Alfred the Great

(Spider, continued from page 52)

Acknowledgments

- The header image is Black spider Free Vector, an Abstract Vector created by macrovector_official and downloaded from freepik(https://www.freepik.com/free-vector/black-spider_4524956.htm#page=1&query=spider%20abstract&position=0)
- Wikipedia article about Ely Culbertson: https://en.wikipedia.org/wiki/Ely_Culbertson
- Early version of Spider: https://archive.org/details/in.ernet.dli.2015.126234/page/n361/mode/2up
- Myrmex: http://wiki.decktet.com/game:myrmex
- Myrmex app: http://mcdemarco.github.io/myrmex/myrmex.html
- The Decktet images were created by P. D. Magnus (https://www.decktet.com/download/decktet.pdf) and are used with permission; images were downloaded from the GitHub site kept by M. C. De Marco (https://github.com/mcdemarco/myrmex/tree/master/cards); borders were added for this article.
- The Mah Jong font was downloaded from dafont.com (https://www.dafont.com/mahjong.font).
- ShenZhen Solitaire: https://shenzhen-solitaire.tgratzer.com/
- Mah Jong Spider: https://www.goodsol.com/games/chinesepider.html
- Blue Sea deck cards are photographs of original cards designed by P. D. Magnus; the images were cleaned up, with borders added (https://www.drivethrucards.com/product/113180/Blue-Sea-Deck).
- Tarot card images are scans of original untouched cards from the Rider-Waite Tarot deck by Pamela Coleman Smith (1909). The cards were scanned by Holly Voley for the public domain, and retrieved from the Wikipedia site for the Rider-Waite Tarot (https://en.wikipedia.org/wiki/Rider-Waite_tarot_deck).

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* = **complete rules**
† = **partial rules**

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Tip-Top-Toe

10	19	11	11	32	12	12	34	13
34	1	33	39	2	29	21	3	39
14	35	23	15	33	24	25	38	36
14	32	25	15	30	16	16	35	36
30	4	38	29	5	31	37	9	29
20	34	18	18	32	17	22	31	28
20	35	22	23	21	17	24	19	28
33	7	21	19	8	30	37	6	38
13	37	26	26	31	27	27	39	10

A game by Larry Back