The Fortress Positions Challenge – a Forced Draw?

To load a score into Quincala Game Viewer, just *copy* the relevant "QSF-string" (enclosed by < >), then click the *Paste* button in the software (or use the keyboard to type Alt + v). If you cannot see the Paste button click the "Fn:" button until you see it.

In Acrobat Reader, to enable selection and copying, you might have to click "Select" on the top bar before you can highlight and copy the QSF-string. (Note: loading game scores will be much easier with the next version of the software.)

Current View

My current view is that since there are no known attacks against the as yet unbroken fortresses described below, there is a certain possibility that at least one of these, or a new one, will be confirmed robust once the necessary software is developed. It is therefore possible that the Quincala Knocking Game in its current form is a forced draw, and it is my view that all serious tournaments should be postponed until proper analysis has been undertaken, and a remedial tournament rule has been defined and properly tested.

The challenge is to find attacks that break any or all of these proposed fortresses; alternatively to find and prove a robust fortress, and a rule that would prune all such fortresses and other forced drawn positions from the game tree with the least impact on the hitherto collected game scores.

On a positive note, should the forced draw be confirmed but limited to these kinds of fortress positions, I have already found a few remedial rule candidates that would have very little impact on the game, and would leave a great majority of the collected scores intact, both legally and strategically.

Background

Looking at the different attacks and exchange patterns described in the document "End Game Tactics with Many Towers", it appeared as if most successful attacks from an 8 tower position should start with a double knock, ie knocking two pieces at once. I then started to construct defensive *fortress* positions of four towers or close to four towers, neither of which can be attacked with a double knock without losing. Since there is a rule against passing, such positions need to include an *oscillation* – either a *zero impact move* or a standard set of moves that can be performed until an attack is launched. Additionally, being attacked from one side or two sides might require a pair of fortress positions according to needs.

A robust fortress is defined by its position and oscillation, and also by a set of standard moves that will repel any attack. I have yet to fully define such standard moves for the fortress candidates described, but a few of them would be used in the examples below.

If

a. such a fortress or set of fortresses can be shown to be robust
b. a sequence or a tree of sequences of moves that can always achieve this position would be defined

# The Fortress Positions Challenge – a Forced Draw?

then the Quincala knocking game in its current form is a forced draw.

To reach certainty, a large amounts of possible variations have to be investigated, more than I can do manually. Therefore I have started developing software that can in the first instance find attacks, and secondary confirm robustness. In the meantime, if anyone finds an attack to any of the described positions below (Nathan already broke FDC 3B just before Christmas), please tell me.

Regarding the sequence/s to reach such a fortress position, if it exists, I have not spent much time on it; it is likely the one used below is not watertight, but even it it has got a hole, it is not good for the game if every players have to learn the few holes there are, so I believe my current view holds.

Below is listed the various fortress candidates and a few example attacks. The move sequence in the example strings until the fortress is established is not thoroughly analysed, and should at this point in time be regarded just as a technicality enabling the example to start from the given position.

FDC 3B two sides attack
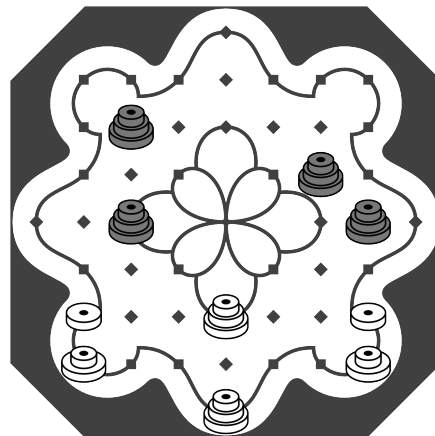
The FDC 3B two sides attack looks strongest when initiated along the edge of the outer ornamental line, as suggested by Nathan:

<=QSF;0.1&Quincala;KM;8696a6a668696a6a758484778888
a696969988889674746a69695544444636262633446262636
36646363574848746464394848635353699696534433338887
87849394939336464644333433333x482626343334333326355
36462537364649695736493947464736453534645445333344
45353r1;0.2&title=2013-01-28_FDC3B_two_sides_fail_
single_knock_attack_along_outer_line>

The white defensive moves in the beginning of the attack are crucial and will need to be well defined. The reason this candidate fortress don't have full towers in the corners is because it wants to always be ready for a twin response to this attack:
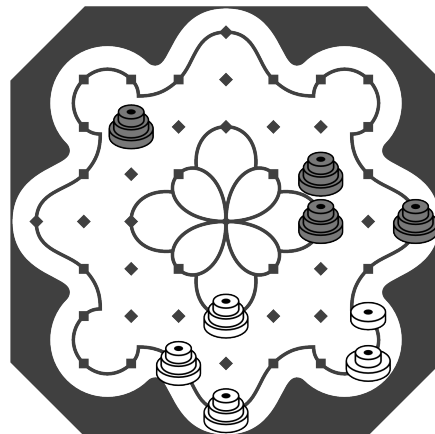
The Fortress Positions Challenge – a Forced Draw?

<=QSF;0.1&Quincala;KM;8696a6a668696a6a758484778888
a6969699888896674746a696955444446362626334462622636
3664636357484874646439484863535369969653443333887
8784939493933646464433343333x482626343334333346454
5335545263544455564545554445r1;0.2&title=2013-01-28
_FDC3B_two_sides_fail_twin_response_move>

Black might choose to hold back the largest pieces to avoid being threatened by White, but this still looks like a failed attack:
<=QSF;0.1&Quincala;KM;8696a6a668696a6a758484778888
a6969699888896674746a696955444446362626334462622636
3664636357484874646439484863535369969653443333887
8784939493933646464433343333x483735353433343333355
3646253736464878695959493949393957364939474 6473645
353967464536374464554639484r1;0.2&title=2013-01-28
_FDC3B_two_sides_fail_-_Black_holds_back_large_pieces>

FDC 3B – one side attack

The FDC 3B one side attack was broken by Nathan on 23 December in roughly this manner (Black's position and general move sequence until turn 33 not correct):
<=QSF;0.1&Quincala;KM;8696a6a668696a6a758484778888
a6969699888896674746a696955444446362626334462622636
3664636357484874646439484863535369969653443333887
8784939493934846464433343333669693334348786863454
5446484854535396a6a6949394939369878794939493x868
384936273849383a6958483936474849383879695848393536
37484938348789695848393948384838 4r0;0.2&title=2012
-12-23_FDC3B_broken_by_Nathan>

With the initial attack Black forces an exhaust exchange, which he will win since he knocked first.

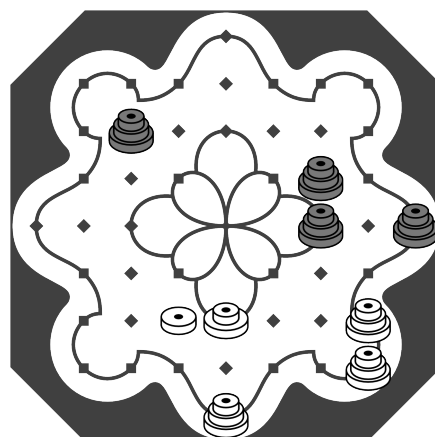# The Fortress Positions Challenge – a Forced Draw?

FDC 3A one side
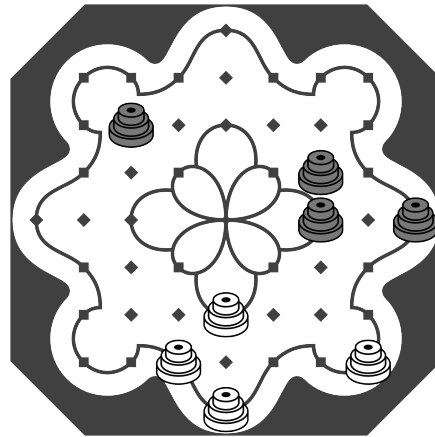
interestingly enough, the earlier candidate FDC 3A (one side) is not broken by Nathan's attack – the exchange here is only *semi-forced*, i.e. White forces Black but not the other way round

<=QSF;0.1&Quincala;KM;8696a6a668696a6a758484778888
a696969988889674746a69695544444636262633446262636
36646363574848746464394848635353699696534433338887
87849393364646443333487878333434464848345454878686
54535396a6a693949394947887879493393x868384936273849
383a695849364849384859r1;0.2&title=2012-12-24_FDC
3A-1_%28one_side%29_failed_Nathan_attack>

FDC 4 – one side

This is FDC 4 (one side), slightly adjusted from Nathan's suggestion in order to allow for an oscillation, with a failed black attack as an example:

The Fortress Positions Challenge – a Forced Draw?

<=QSF;0.1&Quincala;KM;8696a6a668696a6a758484778888
a69696998888967474 6a696955444446362626334462622636
3664636357484874646439484863535369969653443 3338887
8784939493934846464433343333366969333434878686 9493
9396a6a664949446484834645464646987875464546464x868
584936474858796857574628474849584938 47585r1;0.2&ti
tle=2012-12-23_FDC4_with_failed_bent_dart_attack>

The sequence to shift to the one side attack position has to be looked at – the no pass rule makes the plain 4 tower position vulnerable from the back. (Once this is thoroughly analysed, I will also look at the no pass rule again – it looks simple enough, but is only applicable in the very few positions when there is no *zero impact* move available, so is a bit un-Quincala-y)

This example looks at Black trying to attack with one tower "from the back", still a failed attack:
<=QSF;0.1&Quincala;KM;8696a6a668696a6a758484778888
a69696998888967474 6a696955444446362626334462622636
3664636357484874646439484863535369969653443 3338887
8784939493934846464433343333366969333434878686 9493
9396a6a664949446484834645464646987875464546464x484
736366454363686856362365463626287868563629 46463626
2a695856362937585r1;0.2&title=2013-01-23_FDC4_double
_knock_threat_from_back_-_fail>

Various examples of failed attacks against FDC 4 – one side

This *screen* attack (a screen attack is sowing pieces adjacent to towers to threaten knock in the next move, forcing the defender position out of alignment) is a fail:
<=QSF;0.1&Quincala;KM;8696a6a668696a6a758484778888
a69696998888967474 6a696955444446362626334462622636
3664636357484874646439484863535369969653443 3338887
8784939493934846464433343333366969333434878686 9493
9396a6a664949446484834645464646987875464546464x869
67473546474738785747393757485a69585847562738475854
878968574758485748584949384 7585r1;0.2&title=2012-1
2-23_FDC4_with_failed_screen_attack>

A screen attack near the corner seems to cause the most nuisance, this still fails with less than perfect white play:
<=QSF;0.1&Quincala;KM;8696a6a668696a6a758484778888
a69696998888967474 6a696955444446362626334462622636
3664636357484874646439484863535369969653443 3338887
8784939493934846464433343333366969333434878686 9493
9396a6a664949446484834645464646987875464546464x879
6965464546464a69584936273849393484554 6484737386858
4939483849394847364544596868574648473737 4739483838
575839493937574937574r1;0.2&title=2012-12-23_FDC4_
with_failed_screen_near_corner>

The Fortress Positions Challenge – a Forced Draw?

This attack fails although black knocks the last black small piece!

<=QSF;0.1&Quincala;KM;8696a6a668696a6a758484778888
a696969988889674746a69695544444636262634462622636
366463635748487464643948486353536996965344333887
878493949393484646443334333336696933434878686949 3
9396a6a664949446484834645464646987875464546464x879
6965464546464a695849394838493939 6a6958493546484939
386858493627384939483847362484563628483838575949 39
3r1;0.2&title=2012-12-27_FDC4_with_failed_last_small_white
_piece_knock>