Chess960 - new opportunities for proof games

What is Chess960?

Chess960 is described in Wikipedia as follows:

Fischer Random Chess (or Chess960) is a variant of chess invented and advocated by former World Chess Champion Bobby Fischer, introduced in Buenos Aires, Argentina in June 1996. It employs the same board and pieces as standard chess, however the starting position of the pieces on the players' home ranks is randomized. The random setup (if not the same as the classic starting position) renders the prospect of obtaining an advantage through the memorization of opening lines impracticable, compelling players to rely instead on their talent and creativity. Randomizing the main pieces had long been known as *Shuffle Chess*, but Chess960 introduced new rules that preserve full castling options in all starting positions, resulting in 960 unique starting setups. To maintain the character of standard chess, a player's bishops start on opposite-color squares, and the king starts on a square between the rooks.

Castling in Chess960

Copied from the FIDE rules of chess, appendix E: Chess690 Castling Rules

a. Chess960 allows each player to castle once per game, a move by potentially both the king and rook in a single move. However, a few interpretations of standard chess games rules are needed for castling, because the standard rules presume initial locations of the rook and king that are often not applicable in Chess960.

b. *How to castle*

In Chess960, depending on the pre-castling position on the castling king and rook, the castling manoeuvre is performed by one of these four methods:

1. double-move castling: by on one turn making a move with the king and a move with the rook, or
2. transposition castling: by transposing the position of the king and the rook, or
3. king-move-only castling: by making only a move with the king, or
4. rook-move-only castling: by making only a move with the rook.

Recommendation

1. When castling on a physical board with a human player, it is recommended that the king be moved outside the playing surface next to his final position, the rook then be moved from its starting to ending position, and then the king be placed on his final square.
2. After castling, the rook and king's final positions are exactly the same positions as they would be in standard chess.

Clarification

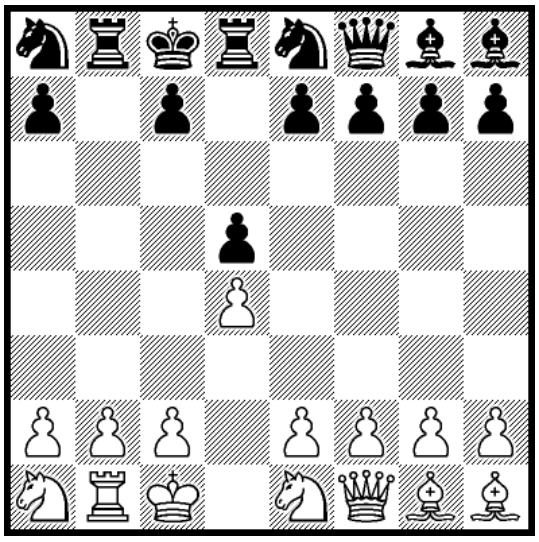
Thus, after c-side castling (notated as O-O-O and known as queen-side castling in orthodox chess), the King is on the c-square (c1 for White and c8 for Black) and the Rook is on the d-square (d1 for White and d8 for Black). After g-side castling (notated as O-O and known as king-side castling in orthodox chess), the King is on the g-square (g1 for White and g8 for Black) and the Rook is on the f-square (f1 for hite and f8 for Black).

It all started... (updated 4.1.2013)

...when Olli Heimo published a Chess960 problem in Retrocorner (problem A below). With the input from two other composers the theme was tripled. This was what the composers thought; later it has been shown to be incorrect. Having realized the theme threefold in a short move sequence, the composers went for the full jackpot. The composers were aware of problem B and the question was: can anything similar and perhaps shorter be accomplished by a Chess960 proof game? It turned out to be an unfruitful attempt, partly due to the limited possibilities for checking a Chess960 proof game by computer (see below Computer testing). Lesson: when there is perfection, as in B, lift your hat and bow, nothing else! - It seems to be a clear case, where nothing can be gained by Chess960.

A

Olli Heimo
Retros Mailing List Sep. 26, 2012

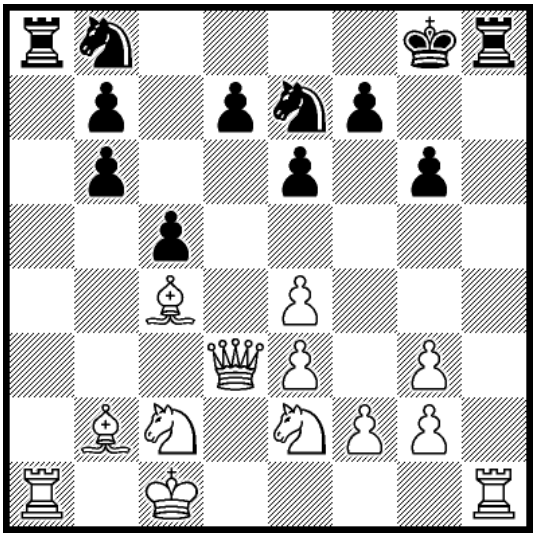


Shortest proof game Chess960

nrkrnqbb/p1p1pppp/8/3p4/3P4/8/PPP1PPPP/NRK1NQBB

B

Unto Heinonen
Springaren 1996
2nd Prize



Proof game in 19.0 moves

rn4kr/1p1pnp2/1p2p1p1/2p5/2B1P3/3QP1P1/1BN1NPP1/R1K4R

Solutions: A) the initial position of the officers in the Chess960 starting position (Chess960IP) has been from a to h NRKRNQBB with the play 1.d4 d5 2.Rd3 Rd6 3.Rb3 0-0-0 4.Rxb7 Rb6 5.Rb8+ Rxb8 and B) 1.b4 c5 2.b5 Qc7 3.b6 Qg3 4.hxg3 h6 5.Rxh6 axb6 6.Rc6 Rxa2 7.Na3 Rxc2 8.Bb2 Rc4 9.Nc2 Rch4 10.e4 g6 11.Bc4 Bh6 12.Ne2 Be3 13.dxe3 e6 14.Qd3 Ne7 15.0-0-0 0-0 16.Rxc8 Nbc6 17.Ra8 Rh8 18.Ra1 Ra8 19.Rh1 Nb8

Continuation...

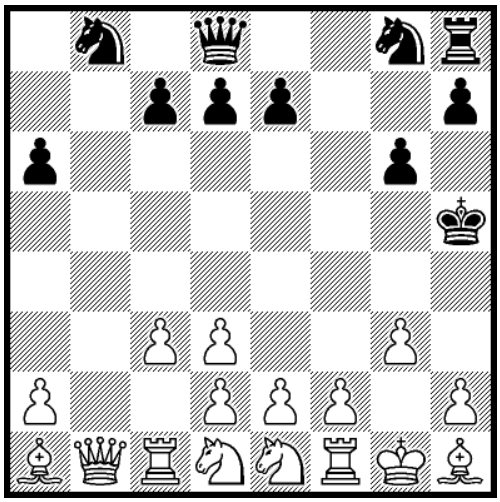
...followed, when I realized that Chess960 is especially well suited to have 'invisible' changes of places as only the end positions of the pieces are known from the diagram. How about composing a proof game, which has all officers on 1st/8th rank, but none is its initial position?

This turned out to be a difficult task, when the aim is not to give away the Chess960IP. In order to see how easily it can be done by standard chess, C was composed. This has a fourfold 'Platzwechsel' (a1&c1, b1&d1, e1&g1, f1&h1). Accomplishing something similar in Chess960 is more difficult due to two reasons: little help from the computer in checking and must be avoided that the diagram position can be reached from several different Chess960IPs. The complexity of this type of proof games leads easily to incorrectness. Before D saw the daylight, the master solver getting the dedication has kindly cooked two earlier versions; a warm thank you!

C

Per Olin

Original for
Retros Mailing List Dec. 3, 2012



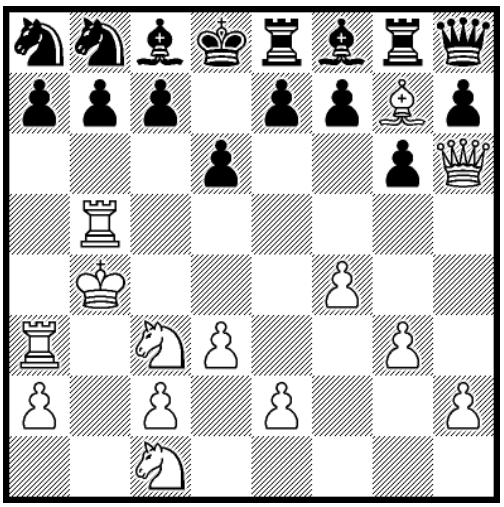
Proof game in 15.5 moves C+Euclide

1n1q2nr/2ppp2p/p5p1/7k/8/2PP2P1/P2PPP1P/BQRNNRKB

D

Per Olin

Dedicated to Olli Heimo
Original for
Retros Mailing List Dec. 3, 2012



Proof game in 16.0 moves Chess960

nnbkrbrq/ppp1ppBp/3p2pQ/1R6/1K3P2/R1NP2P1/P1P1P2P/2N5

Solution C: 1. g3 f5 2.Bg2 f4 3.Bxb7 f3 4.Nxf3 Kf7 5.0-0 Kg6 6. Ne1 Kh5 7.Bh1 Ba6 8.Nc3 Bd3 9.c2xd3 g6 10. Qc2 Bg7 11.Nd1 Bc3 12.b2xc3 a6 13. Bb2 Ra7 14.Rc1 Rb7 15. Ba1 Rb1 16.Qxb1

Going through the solution of D gives an indication of some of the considerations the composer must take. First step is to figure out the Chess960IP, and here a move count helps on the way.

Move count: There are 15 white moves visible in the diagram (K/3, Q/2 if not starting on c1, Rs/2+1, Bg7/2 as can not start on a1 due to black pawn b7, B/1 assuming that the bishop on light squares is moved to be captured and not captured on its original square, Ns/1+0 and pawns/3). If the knight does not start on c1, then white needs two additional moves with the knight, which can not be compensated by one less with wQ starting on c1. This is due to the impossibility to get both wQc1 to h6 in one move and the rook, assuming that it does not start on b1, in two moves to a3 (obstruction by pawn d3 or pawn f4). Conclusion: the white knight starts on c1 and does not move. With wNc1 not moving white has one additional move on top of the 15 moves seen from the diagram. This extra move can not be with Nc3, as the knight can not reach c3 in two moves with white pawns on e2/a2. Thus, the knight on c3 comes from either b1 or d1.

Try: With Nb1 the rook on b5 must come from a1 using the extra move that white has. The rook a3 comes from f1, which means that the white bishop on light squares is on h1. The white king is on d1 as e1 is occupied by the bishop; the black pawn structure results in that there is a bishop on c1/c8 or e1/e8. This leaves g1 for wQ. Summing up the try gives Chess960IP RNNKBRQB with the play 1.g3 Nb6 2.Bc6 Nxc6 3.f4 0-0-0 4.Rf3 Na8 5.Qb6 Nb8 6.Qh6 g6 7.Ra3 Bxb2 8.d3 Bg7 9.Bc3 Qh8 10.Kd2 Rg8 11. ? White runs out of moves.

Solution: Chess960IP RKNNBRQB with the play 1.g3 Nb6 2.Bc6 Nxc6 3.f4 0-0-0 4.Rf3 Na8 5.Qb6 Nb8 6.Qh6 g6 7.Ra3 Bxb2 8.d3 Bg7 9.Bc3 Qh8 10.Kb2 Rg8 11.Tb1 Bf8 12.Bg7 d6 13.Kc3 Bd7 14.Rb5 Re8 15.Kb4 Kd8 16.Nc3 Bc8.

Computer testing (updated 4.1.2013)

As far as I know, no public computer testing program is able to test a Chess960 proof game. The special castlings complicate testing. Popeye a=>b-stipulation can separately test from initial position to castling and from castled position to end (and between castlings, if both sides castle). Problem D has been tested in this way. This means testing when starting from a certain Chess960IP; the test does not cover the question, can the play start from different Chess960IPs and end up in the sought position. As a hint for tricks when testing: D has been tested with Popeye a=>b-function, whereby in the Chess960IP Be8 was deleted and replaced by black king; this retains the casling right for black. Here the move sequence from 1.g3 to 13.Kc3 could be verified. All this incomplete testing means that there is no full certainty of the correctness.

There are, however, privately developed testing procedures. Mario Richter describes his method as follows: ' My own program 'rawbats' understands Chess960; it is not a solving program, which does the automated testing for you, but a testing program which requires human intervention. 'rawbats' is not publicly available in the sense that there's no place where you can simply download it, but I'm willing to give it to anybody who asks me for it. Some problem friends already used it successfully. The main problem is, that there is nearly no documentation, and that it is therefore not easy to use ...' - Thanks to Mario for his offer of assistance!

The big question related to computer testing is: will it some day be possible to confirm that a certain position in a Chess960 proof game can be reached in only one way from only one initial position?

When and why Chess960?

The boom of proof games during last three decades has given us many wonderful problems starting from the standard initial position (SIP). How can we be sure that SIP is the most suitable for every theme and idea? Should we reverse our thinking and ask ourselves: can this proof game idea be better presented from some other initial position than SIP? I will be surprised if it turns out to be that one single initial position is always the best one, when there are 959 other positions to consider.

When we start from SIP, we give away much information that can be concealed. In a Chess960 proof game, where the Chess960IP is not given, we leave it to the solver to find out the initial position. This is much in the spirit of retros, let the solver find out what has taken place. It is, of course, also possible give the Chess960IP that the proof game starts from; this is what takes place when we start from SIP. Instead of starting from SIP we can also state that this proof game starts from Chess960IP BBRKQRNN.

From a composing point of view, it is practical to start a proof game from a known position; everything else is complicated and many times frustrating for the composer. The proof games starting from SIP will continue to flourish, no doubt about that. But in situations, when we are able not to disclose the starting position, then a Chess960 proof game is probably a better alternative. Referring to problems C and D above, I certainly consider D to be a more interesting problem.

Orthodox or fairy chess?

The Codex for Chess Composition by World Federation for Chess Composition (WFCC) refers to FIDE chess rules of 1996. Chess960 was taken into the official chess rules in 2009. Chess960 is therefore not in problem chess considered to be orthodox; it is a chess variant, one among many fairy chess inventions. If Chess960 ever gets any other status in problem chess, then the biggest impact could be on the legality of a position.

Final words

Except for retros / proof games, no other problem genre will greatly be influenced by Chess960. The retro genre has got something new, problemists have not themselves invented one more fairy condition. Chess960 has a recognized status is the chess world; one day it might even be the main variant of chess. We have been given something, let's use it!

Dr. Milan R. Vukcevich in his book My Chess Compositions mentions Fischer Chess in chapter 14.4 The Future Form of Chess. Chapter 14.5 Evolve or Disappear starts with the sentence:' Our game is going to either disappear or evolve into something more complex'. - Having composed several Chess960 proof games, I can assure, that at least from problem composing point of view the complexity is there!

Warning: Chess960 may complicate your life!

Espoo, Finland
Dec. 3, 2012

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