

Universal Multiple-Octet Coded Character Set
International Organization for Standardization
Organisation internationale de normalisation
Международная организация по стандартизации

Doc Type: Working Group Document**Title: Revised proposal to encode heterodox chess symbols in the UCS****Source: Garth Wallace and Michael Everson****Status: Individual Contribution****Action: For consideration by JTC1/SC2/WG2 and UTC****Date: 2017-03-28****Replaces: L2/16-293**

0. Introduction The UCS contains symbols for the game of chess in the Miscellaneous Symbols block. These are used in figurine notation, a common variation on algebraic notation in which pieces are represented in running text using the same symbols as are found in diagrams. While the symbols already encoded in Unicode are sufficient for use in the orthodox game, they are insufficient for many chess problems and variant games, which make use of extended sets.

1. Fairy chess problems The presentation of chess positions as puzzles to be solved predates the existence of the modern game, dating back to the *mansūbāt* composed for *shatranj*, the Muslim predecessor of chess. In modern chess problems, a position is provided along with a stipulation such as “white to move and mate in two”, and the solver is tasked with finding a move (called a “key”) that satisfies the stipulation regardless of a hypothetical opposing player’s moves in response. These solutions are given in the same notation as lines of play in over-the-board games: typically algebraic notation, using abbreviations for the names of pieces, or figurine algebraic notation.

Problem composers have not limited themselves to the materials of the conventional game, but have experimented with different board sizes and geometries, altered rules, goals other than checkmate, and different pieces. Problems that diverge from the standard game comprise a genre called “fairy chess”. Thomas Rayner Dawson, known as the “father of fairy chess”, popularized the genre in the early 20th century. He invented many pieces and conditions, and was the editor of the *Fairy Chess Review*, an offshoot of the British chess problem magazine *The Problemist*.

Fairy chess problems that differ from orthodox chess only in rule set, stipulation, or board do not require any symbols not also used for orthodox chess. For example, a cylindrical board is shown as a standard square but the leftmost and rightmost files are treated as adjacent; “Circe chess” differs only in what happens when pieces are captured. Unconventional pieces are another story, as there must be some way of representing additional types of pieces alongside the standard ones.

Most fairy pieces are conventionally represented by rotating the standard chess piece symbols. In the days of hot metal typography, this enabled composers and publishers to use easily available chess typefaces for fairy problems, without the added hassle and expense of designing and cutting new type for each and every new kind of piece. Unlike the standard upright symbols, which always correspond to the orthodox pieces, there is no strict one-to-one correspondence between rotated symbols and particular piece types: the number of fairy pieces in use is uncountable, and the number of possible pieces is infinite. Instead, rotated symbols are assigned to pieces as needed, and the composer has wide latitude in

choosing which ones they feel are appropriate, with only a few very common ones fixed by convention: the grasshopper is almost always 🦗, and the nightrider 🐎. Beyond that, the particular assignments are usually motivated by perceived similarity, e.g. a piece that leaps obliquely would probably use one of the rotated knights, while one that moves mostly diagonally might use a rotated bishop.

All six piece symbols can be found in 180°, clockwise 90°, and counter-clockwise 90° rotations. Less commonly—since there are a great many possible pieces moving in oblique directions and composers sometimes wish to use more than four of them—the knight symbol can also be found in the four intermediate, 45° increment rotations. While intermediate rotations of the other piece symbols are theoretically possible, and can occasionally be found in fonts and image sets, only the intermediate rotated knights are in regular use.

2. Neutral pieces are among Dawson’s popular innovations. These are pieces that do not belong exclusively to either white or black but may be moved or captured by both. In older publications, these were represented by rotated white symbols, but current practice is to use symbols that are white on one side and black on the other, which has the advantages of greater clarity and flexibility.

All four cardinal rotations of the six piece symbol shapes, including the king, may be found in this half-filled form. Upright and 180° turned symbols are usually split across the vertical center line into left and right sides; 90° rotated pieces are usually split across the horizontal center line. Which half is white and which black depends on the font and is not used to distinguish pieces. Knights in intermediate rotations may also be neutral; these may simply be 45 or 135 rotations from the upright neutral forms, or they may be split across the vertical or horizontal center line.

3. Geometric shapes are sometimes used to represent pieces that do not behave similarly to conventional pieces, for example white or black circles used for the orphan, which moves like any piece attacking it. In general, the range of shapes used for this purpose is already well covered by the UCS. The font here is the STIX Maths font, taken for its standard size of many symbols.

U+25CB ○ WHITE CIRCLE
 U+25CF ● BLACK CIRCLE
 U+25D0 ◐ CIRCLE WITH LEFT HALF BLACK or U+25D1 ◑ CIRCLE WITH RIGHT HALF BLACK
 U+25C7 ◇ WHITE DIAMOND
 U+25C6 ◆ BLACK DIAMOND
 U+2B16 ◈ DIAMOND WITH LEFT HALF BLACK or U+2B17 ◉ DIAMOND WITH RIGHT HALF BLACK
 U+2606 ☆ WHITE STAR
 U+2605 ★ BLACK STAR and occasionally
 U+25EF ○ LARGE CIRCLE or U+2B24 ● BLACK LARGE CIRCLE

Occasionally the neutral form of the five-pointed star is found, though in general the star is already vanishingly rare as a chess symbol. The character 2BEA ★ STAR WITH LEFT HALF BLACK under ballot would suit this purpose.

4. The equihopper, invented in the early 20th century by G. Leathem, is a piece that slides in a straight line until it reaches another piece, hops over that piece, and continues to slide in the same direction until the distance from the hurdle to its destination is equal to the distance from its starting square to the hurdle; if either slide is impeded, the move is not allowed. It is an exception to the rule that fairy pieces are represented by rotated standard piece symbols, as it receives a distinct symbol of its own: ♞. This symbol may have originally been a simple arrangement of geometric shapes probably meant to evoke its move: a slender vertical rectangle flanked by two triangles pointing inward. Later fonts have added

details to make it harmonize with the standard Staunton-style piece symbols (such as adding rectangular “bases” to either end, or “collar” lines), to the point where its basic shape is sometimes obscured.

The equihopper has its own variations, such as the non-stop equihopper (also known as the French equihopper or equileaper), which leaps over all pieces on the line and not just the hurdle in the center. These may also use the same symbol. When multiple types of equihoppers are present, a 90° rotated equihopper symbol is used to distinguish between them. Since the equihopper symbol has 180° rotational symmetry, there is no 180° turned equihopper symbol and no distinction between clockwise and counter-clockwise rotations. Equihoppers in intermediate rotations are not attested. The rotated equihopper in some fonts bears a slight resemblance to an hourglass, but does not depict one, and neither U+231B ⌘ HOURGLASS nor U+23F3 ⌚ HOURGLASS WITH FLOWING SAND would be acceptable substitutes. The mathematical symbols U+29D6 ⌘ WHITE HOURGLASS and U+29D7 ⌚ BLACK HOURGLASS are similar to the simplest form of the rotated equihopper, but lack the central rectangle, and the more ornate versions of the rotated equihopper symbol would likely not be acceptable forms of those symbols for use in mathematics.

The symbol for a neutral equihopper is half-white and half-black like the other neutral pieces. In some fonts, the neutral basic equihopper is split across the horizontal center line while the rotated equihopper is split across the vertical, which is the opposite arrangement from the standard symbols.

5. The knighted compounds are pieces that have been reinvented several times in the history of chess, and consequently have gone by many names. The first known appearance of the knight-rook and knight-bishop compounds is in 1617 with the publication of D. Pietro Carrera’s *Il Gioco delgi Scacchi*, which described a variant to be played on a 10×8 board, where they were named the Champion and Centaur respectively. In the 1920s, the Grandmaster José Raúl Capablanca, while he was world champion, proposed his own 10×8 variant using the rook-knight (which he first called a Marshall, then later changed to Chancellor) and the bishop-knight (first called a Chancellor, then changed to Archbishop). His stature helped to popularize them, and variants that add those pieces to the standard array are now commonly referred to as Capablanca variants. Other notable variants in this category include: Grand Chess, a 10×10 variant by Christian Freeling that uses the terms Marshall and Cardinal; Gothic Chess, a 10×8 variant by Ed Trice using the terms Chancellor and Archbishop, which was awarded a U.S. patent in 2002; and Seirawan Chess, a variant on the standard 8×8 board invented in 2007 by Grandmaster Yasser Seirawan and Bruce Harper, using the terms Elephant and Hawk. The game of Janus Chess, a 10×8 variant that counts some Grandmasters among its proponents, also features bishop-knight compounds under the name Janus, but not the rook-knight compound. Fairy chess problemists know these pieces under the names Empress (for the rook-knight) and Princess (for the bishop-knight) by analogy with the Queen, which is itself a compound of rook and bishop. The most common names among variants are Marshall and Chancellor for the rook-knight, and Archbishop and Cardinal for the bishop-knight.

The queen-knight compound has also had many names, including Terror, Omnipotent Queen, and Superqueen, but is best known as the Amazon. It also has a long history. In some parts of Europe in the late middle ages, the Queen was allowed to leap like a knight as well as slide like a rook or bishop; this rule died out in most places as modern chess developed and became standardized, but reportedly was known in Russia as late as 1772. Its first known appearance as a piece distinct from the Queen, and alongside the bishop-knight and rook-knight, is in a game from an 18th century Indian manuscript (though sometimes referred to as “Turkish Great Chess”), where it is called a giraffe. In modern times it is best known from the game Maharajah and the Sepoys, in which white’s sole piece is a royal (that is, subject to check and checkmate like a king) amazon pitted against black’s orthodox chess army.

The symbols used for these compound pieces among players vary in design (see Tables 1, 2, 3 below), but in general they are transparent combinations of two component symbols, either through

superimposition or fusion of elements. An uncommon but notable exception is the use of a stylized mitre or biretta for the bishop-knight compound in games where it is referred to as an archbishop or cardinal. The use of distinct symbols for these pieces is more common among players of the aforementioned variants than among problem enthusiasts; the latter tend to prefer rotated symbols, though 1Echecs-style “half-symbols” (see below) are occasionally found in the literature.

The popular fairy chess font 1Echecs takes an unusual approach to compound pieces. Instead of dedicated compound symbols, it provides left and right “half-symbols” of some pieces, which can be mixed and matched as needed: the queen and its three rotations (, , , , the rook (, , the bishop (right half only: , , the knight (left half only: , , and the turned knight (right half only: , , in black and white. If this arrangement were to be followed by Unicode, fonts containing fused knight-bishop and knight-rook symbols could treat them as ligatures. However, this approach has numerous drawbacks from a character encoding standpoint, including making two-character lookalikes of already encoded characters possible (e.g. a left half white rook followed by a right half white rook   would look identical to U+2656  WHITE CHESS ROOK) and breaking when embedded in vertical CJK text, and is not widely used for anything but the two compounds listed above. Chess symbols should not be “composed”.

Neutral versions of neither superimposed/fused compound symbols, nor the archbishop mitre, are attested; neutrals built from “half-symbols” are possible but not known to be in use. Unlike the rotated symbols, which can represent a wide variety of pieces, the compound symbols have one-to-one correspondences with specific pieces, which happen to be rarely encountered in neutral form.

6. Current practice: Most dedicated chess fonts are currently dingbat fonts placing chess symbols in the Basic Latin and sometimes Latin-1 ranges using a variety of incompatible allocations. Often the orthodox pieces are assigned to letters according to the algebraic notation conventions of the font creator’s native language, with other pieces (and sometimes board diagram elements or Informator symbols) assigned more or less arbitrarily to the remaining printing characters. A notable exception is the freeware Quivira font, which is a Unicode font with several heterodox chess symbols assigned to the Private Use Area.

In LaTeX, chess symbols are handled by packages such as Diagram, Chessfss, and Skak. The Diagram package—which, despite its name, handles figurine notation as well as board diagrams—provides a means of specifying “upside-down” (turned 180°), “left” (counter-clockwise 90°), and “right” (clockwise 90°) versions of the standard piece symbols, with “grasshopper” and “nightrider” shorthand forms for the turned queen and knight, and commands for the equihopper and rotated equihopper symbols.

7. Unicode Character Properties.

```
1FA00;NEUTRAL CHESS KING;So;0;ON;;;;;N;;;;;
...
1FA53;BLACK CHESS KNIGHT-BISHOP;So;0;ON;;;;;N;;;;;
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8. Line Breaking

Chess symbols are typically immediately followed by a letter and number to designate a board square in algebraic notation, and sometimes additional letters, punctuation, and symbols. These are treated as units and should not break between the chess symbol and following letter. The default line breaking class for alphabetic and symbol characters would have the correct behaviour.

9. Collation

There is no well-established collation order for heterodox chess symbols. While orthodox chess symbols are typically ordered by the traditional point values used for evaluating exchanges, heterodox chess

Figure 1: Chess pieces and their corresponding symbols. The figure displays 32 chess pieces arranged in a grid, with their corresponding symbols shown below them. The pieces are color-coded: blue, red, and black. The symbols are represented by small icons, some of which are standard chess symbols, while others are custom-designed. The pieces are arranged in a grid, with the first row containing 8 pieces, the second row containing 8 pieces, the third row containing 8 pieces, and the fourth row containing 8 pieces. The symbols are arranged in a grid, with the first row containing 8 symbols, the second row containing 8 symbols, the third row containing 8 symbols, and the fourth row containing 8 symbols.

None of the already encoded chess piece symbols are currently classified as emoji, and these symbols would likewise not be expected to have emoji behaviour. Even if the orthodox symbols were to become emoji, the same would not necessarily be expected of the heterodox symbols. The rotated symbols are part of an abstract system of notation and do not literally represent chess pieces turned upside down or on their sides. Similarly, the equihoppers do not represent physical pieces that could be rendered as full colour images. The knight-compound symbols do sometimes represent real physical chessmen, but are probably too specialized to be in demand as emoji.

All characters proposed here should have a vertical orientation property of U (not rotated in vertical layout), the same as the existing chess symbols, since orientation is semantic.

Dickins, Anthony, *A Guide To Fairy Chess*, © 1969, 1971, Dover
 Hooper, David and Kenneth Whyld, *The Oxford Companion to Chess*, © 1996, Oxford University Press
 Murray, Harold James Ruthven, *A History of Chess*, © 1913, 1969, Clarendon Press
 Rice, John, *Chess Wizardry: The New ABC of Chess Problems*, © 1996, International Chess Enterprises

<http://chess-kopyl.com.ua/ua/> (in Ukrainian)

	1FA0	1FA1	1FA2	1FA3	1FA4	1FA5
0						
	1FA00	1FA10	1FA20	1FA30	1FA40	1FA50
1						
	1FA01	1FA11	1FA21	1FA31	1FA41	1FA51
2						
	1FA02	1FA12	1FA22	1FA32	1FA42	1FA52
3						
	1FA03	1FA13	1FA23	1FA33	1FA43	1FA53
4						
	1FA04	1FA14	1FA24	1FA34	1FA44	
5						
	1FA05	1FA15	1FA25	1FA35	1FA45	
6						
	1FA06	1FA16	1FA26	1FA36	1FA46	
7						
	1FA07	1FA17	1FA27	1FA37	1FA47	
8						
	1FA08	1FA18	1FA28	1FA38	1FA48	
9						
	1FA09	1FA19	1FA29	1FA39	1FA49	
A						
	1FA0A	1FA1A	1FA2A	1FA3A	1FA4A	
B						
	1FA0B	1FA1B	1FA2B	1FA3B	1FA4B	
C						
	1FA0C	1FA1C	1FA2C	1FA3C	1FA4C	
D						
	1FA0D	1FA1D	1FA2D	1FA3D	1FA4D	
E						
	1FA0E	1FA1E	1FA2E	1FA3E	1FA4E	
F						
	1FA0F	1FA1F	1FA2F	1FA3F	1FA4F	

These characters are used to represent the pieces of a variety of heterodox chess games.

Vertical chess symbols

1FA00		NEUTRAL CHESS KING
	→ 2654	 white chess king
1FA01		NEUTRAL CHESS QUEEN
1FA02		NEUTRAL CHESS ROOK
1FA03		NEUTRAL CHESS BISHOP
1FA04		NEUTRAL CHESS KNIGHT
1FA05		NEUTRAL CHESS PAWN

Chess symbols rotated 45 degrees

1FA06		WHITE CHESS KNIGHT ROTATED FORTY-FIVE DEGREES
1FA07		BLACK CHESS KNIGHT ROTATED FORTY-FIVE DEGREES
1FA08		NEUTRAL CHESS KNIGHT ROTATED FORTY-FIVE DEGREES

Chess symbols rotated 90 degrees

1FA09		WHITE CHESS KING ROTATED NINETY DEGREES
1FA0A		WHITE CHESS QUEEN ROTATED NINETY DEGREES
1FA0B		WHITE CHESS ROOK ROTATED NINETY DEGREES
1FA0C		WHITE CHESS BISHOP ROTATED NINETY DEGREES
1FA0D		WHITE CHESS KNIGHT ROTATED NINETY DEGREES
1FA0E		WHITE CHESS PAWN ROTATED NINETY DEGREES
1FA0F		BLACK CHESS KING ROTATED NINETY DEGREES
1FA10		BLACK CHESS QUEEN ROTATED NINETY DEGREES
1FA11		BLACK CHESS ROOK ROTATED NINETY DEGREES
1FA12		BLACK CHESS BISHOP ROTATED NINETY DEGREES
1FA13		BLACK CHESS KNIGHT ROTATED NINETY DEGREES
1FA14		BLACK CHESS PAWN ROTATED NINETY DEGREES
1FA15		NEUTRAL CHESS KING ROTATED NINETY DEGREES
1FA16		NEUTRAL CHESS QUEEN ROTATED NINETY DEGREES
1FA17		NEUTRAL CHESS ROOK ROTATED NINETY DEGREES
1FA18		NEUTRAL CHESS BISHOP ROTATED NINETY DEGREES
1FA19		NEUTRAL CHESS KNIGHT ROTATED NINETY DEGREES
1FA1A		NEUTRAL CHESS PAWN ROTATED NINETY DEGREES

Chess symbols rotated 135 degrees

1FA1B		WHITE CHESS KNIGHT ROTATED ONE HUNDRED THIRTY-FIVE DEGREES
1FA1C		BLACK CHESS KNIGHT ROTATED ONE HUNDRED THIRTY-FIVE DEGREES
1FA1D		NEUTRAL CHESS KNIGHT ROTATED ONE HUNDRED THIRTY-FIVE DEGREES

Chess symbols rotated 180 degrees

1FA1E		WHITE CHESS TURNED KING
1FA1F		WHITE CHESS TURNED QUEEN
		= white grasshopper
1FA20		WHITE CHESS TURNED ROOK
1FA21		WHITE CHESS TURNED BISHOP

1FA22		WHITE CHESS TURNED KNIGHT
		= white knightrider
1FA23		WHITE CHESS TURNED PAWN
1FA24		BLACK CHESS TURNED KING
1FA25		BLACK CHESS TURNED QUEEN
		= black grasshopper
1FA26		BLACK CHESS TURNED ROOK
1FA27		BLACK CHESS TURNED BISHOP
1FA28		BLACK CHESS TURNED KNIGHT
		= black knightrider
1FA29		BLACK CHESS TURNED PAWN
1FA2A		NEUTRAL CHESS TURNED KING
1FA2B		NEUTRAL CHESS TURNED QUEEN
		= neutral grasshopper
1FA2C		NEUTRAL CHESS TURNED ROOK
1FA2D		NEUTRAL CHESS TURNED BISHOP
1FA2E		NEUTRAL CHESS TURNED KNIGHT
		= neutral knightrider
1FA2F		NEUTRAL CHESS TURNED PAWN

Chess symbols rotated 225 degrees

1FA30		WHITE CHESS KNIGHT ROTATED TWO HUNDRED TWENTY-FIVE DEGREES
1FA31		BLACK CHESS KNIGHT ROTATED TWO HUNDRED TWENTY-FIVE DEGREES
1FA32		NEUTRAL CHESS KNIGHT ROTATED TWO HUNDRED TWENTY-FIVE DEGREES

Chess symbols rotated 270 degrees

1FA33		WHITE CHESS KING ROTATED TWO HUNDRED SEVENTY DEGREES
1FA34		WHITE CHESS QUEEN ROTATED TWO HUNDRED SEVENTY DEGREES
1FA35		WHITE CHESS ROOK ROTATED TWO HUNDRED SEVENTY DEGREES
1FA36		WHITE CHESS BISHOP ROTATED TWO HUNDRED SEVENTY DEGREES
1FA37		WHITE CHESS KNIGHT ROTATED TWO HUNDRED SEVENTY DEGREES
1FA38		WHITE CHESS PAWN ROTATED TWO HUNDRED SEVENTY DEGREES
1FA39		BLACK CHESS KING ROTATED TWO HUNDRED SEVENTY DEGREES
1FA3A		BLACK CHESS QUEEN ROTATED TWO HUNDRED SEVENTY DEGREES
1FA3B		BLACK CHESS ROOK ROTATED TWO HUNDRED SEVENTY DEGREES
1FA3C		BLACK CHESS BISHOP ROTATED TWO HUNDRED SEVENTY DEGREES
1FA3D		BLACK CHESS KNIGHT ROTATED TWO HUNDRED SEVENTY DEGREES
1FA3E		BLACK CHESS PAWN ROTATED TWO HUNDRED SEVENTY DEGREES
1FA3F		NEUTRAL CHESS KING ROTATED TWO HUNDRED SEVENTY DEGREES
1FA40		NEUTRAL CHESS QUEEN ROTATED TWO HUNDRED SEVENTY DEGREES
1FA41		NEUTRAL CHESS ROOK ROTATED TWO HUNDRED SEVENTY DEGREES
1FA42		NEUTRAL CHESS BISHOP ROTATED TWO HUNDRED SEVENTY DEGREES
1FA43		NEUTRAL CHESS KNIGHT ROTATED TWO HUNDRED SEVENTY DEGREES
1FA44		NEUTRAL CHESS PAWN ROTATED TWO HUNDRED SEVENTY DEGREES

Chess symbols rotated 315 degrees

1FA45		WHITE CHESS KNIGHT ROTATED THREE HUNDRED FIFTEEN DEGREES
1FA46		BLACK CHESS KNIGHT ROTATED THREE HUNDRED FIFTEEN DEGREES

1FA47  NEUTRAL CHESS KNIGHT ROTATED THREE HUNDRED FIFTEEN DEGREES

Chess equihoppers

1FA48  WHITE CHESS EQUIHOPPER
 1FA49  BLACK CHESS EQUIHOPPER
 1FA4A  NEUTRAL CHESS EQUIHOPPER

Chess equihoppers rotated 90 degrees

1FA4B  WHITE CHESS EQUIHOPPER ROTATED NINETY DEGREES
 → 231B  hourglass
 → 23F3  hourglass with flowing sand
 1FA4C  BLACK CHESS EQUIHOPPER ROTATED NINETY DEGREES
 1FA4D  NEUTRAL CHESS EQUIHOPPER ROTATED NINETY DEGREES

Hybrid chess symbols

1FA4E  WHITE CHESS KNIGHT-QUEEN
 = amazon, terror, omnipotent queen, superqueen
 1FA4F  WHITE CHESS KNIGHT-ROOK
 = chancellor, marshall, empress
 1FA50  WHITE CHESS KNIGHT-BISHOP
 = cardinal, princess
 • may have the form of a mitre or biretta
 1FA51  BLACK CHESS KNIGHT-QUEEN
 1FA52  BLACK CHESS KNIGHT-ROOK
 1FA53  BLACK CHESS KNIGHT-BISHOP

Figures

9 - Petko A. Petkov
 (Schach-Echo 1975)
 1. ♔b5? blocus
 1... ♖c4(♖c3) 2. ♕×c4(♕d1)#
 mais 1... ♖a5!

1. ♕c2? blocus
 1... ♖c4(♖c3) 2. ♕d2(♕é4)# mats changés
 1... ♔d5 2. ♕d3#
 mais 1... ♖b1!

1. ♔c6! blocus
 1... ♖c4(♖c3) 2. ♕é3(♕d5)# mats changés
 Thème Zagorouiko (au moins deux mats sont
 changés deux fois)

Figure 1a. Excerpt from the solutions to a solving competition on the website of the French chess problem magazine *Phénix*, with turned queens representing grasshoppers: <http://www.phenix-echechs.fr/divers/telechargement_concours_solutions/concours_solutions_phenix_01_ESR.pdf>
 This is certainly plain text.

V Couscous Circe je braný Equihopper
 přemístěn vždy na Circe pole beroucího
 kamene. Po braní černým jezdcem ♖b6 je
 tak bílý Equihopper ♖c4 přemístěn na g8,
 odkud (přes ♖f6) kryje e4. Po braní
 černou věží ♖a4 je bílý Equihopper ♖c4
 přemístěn na a8, odkud (přes ♖c7) kryje
 e6. Po braní černým střelcem ♗a2 je bílý
 Equihopper ♖c4 přemístěn na c8, odkud
 (přes ♖e7) kryje g6. Po braní černým
 Lancerem ♗g2 je bílý Equihopper ♖c4
 přemístěn na (pole proměny) c1, odkud
 (přes ♖d3) kryje e5. Krytí polí bílými
 kameny v obou fázích vytváří cyklus.

Figure 1b. Excerpt from *Fairy Twomovers 2008-2010* by Václav Kotěšovec, showing the white (circled in red) and black (circled in green) EQUIHOPPERS in an explanation of a problem.

6. Preis: F871 C.J. Feather

1. ♖g6 hxg6-h8=♔ 2. ♚e5 ♔xe5-h5#; 1. ♚g6 hxg6-g8=♔ 2. ♚h8 ♔xh8-h5#; 1. ♚g6 hxg6-e8=♔ 2. ♖b8 ♔xb8-h5#.

Herrlicher schwarzer Figurenzyklus und drei Rundläufe des ♚h5, mit sparsamsten Mitteln aufs Brett gezaubert. Im zyklischen Wechsel opfern sich Nachtreiter, Turm und Grashüpfer dem ♚h5 und der umgewandelten weißen Dame, während Take&Make dafür sorgt, dass er das Umwandlungsfeld erreicht und im Mattzug im neuen Kleid nach h5 zurückkehren kann. Ein perfektes Minimal.

Figure 2. Excerpt from the October-December 2012 issue of the Dutch chess problem magazine *Probleemblad*, showing TURNED KNIGHTS (circled in green) and TURNED QUEENS (circled in red), here representing the nightrider and grasshopper, respectively, in figurine notation.

The solver will soon see that the Mao c1 is pinned by the Pao g1, and that moves by the ♖e1 would give check, simultaneously unpinning the Mao (a curious effect that is, of course, quite impossible with orthodox force). The set checks with unpins are: 1... ♖xf3+ 2 ♖a2; and 1... ♖xd3+ 2 ♖e2. Why can the mating moves not be played the other way round? With the black knight on f3, 2 ♖e2? is not mate, because of 2... ♖d2!, closing the Mao's check-line. Similarly, if the black knight is on d3, 2 ♖a2? fails to 2... ♖b2!.

Figure 3. Excerpt from the book *Chess Wizardry: The New ABC of Chess Problems*, showing the clockwise rotated knight representing a mǎ (xiàngqí horse)

F977 Dietrich 1.b8=♖ 2. ♖c6 3. ♖d8 4.c8=♔ 5. ♔b8 6.exd8=♖ 7.f8=♖ 8. ♖b7 9. ♖d6 10. ♔d8 11. ♖f7 12. ♔g5 13.d8=♚ 14. ♚d2 15. ♚xg2 16. ♖xe5#. Neutrale AUW, gecompliceerd door een extra paardpromotie die uitsluitend dient om pion e7 kwijt te raken. *Excellent Alphabetical play with promotion (RL). Fünf Umwandlungen, sehr gute Ökonomie (WS).*

Figure 4. Excerpt from the October-December 2013 *Probleemblad*, showing neutral equivalents of the orthodox pieces in figurine notation.

F900 Vysotska 1. ♖f5 ♖f7-e7+ 2. ♚c7-f7 ♖e7-e1 3. ♖e1-d1 ♖d5xd1#; 1. ♖e4 ♖d5-c5+ 2. ♚c7-c4 ♖c5-f5 3. ♖f5-f1 ♖f7xf1#. “Play of specific Chinese neutral battery with two front pieces: ♖d5 and ♖f7. Umnov theme by black Grasshopper. A specific transformation of the initial Chinese battery using the black Grasshopper (with one Pao as front piece). Blocking of black Grasshopper after the key moves. Reciprocal Zilahi in play of neutral Paos combined with Cannibal theme”

Figure 5. Excerpt from the October-December 2012 *Probleemblad*, showing a NEUTRAL ROOK ROTATED 270° (representing a pào, or xiàngqí cannon) and BLACK TURNED QUEEN (as a grasshopper) in figurine notation.



Figure 6. The starting array of Amazon Chess, with Amazons (KNIGHT-QUEENS, circled in red) replacing queens on d1 and d8. Source: brainking.com.



Figure 7. The starting array of Grand Chess. Marshalls (KNIGHT-ROOKS) are at f2 and f9, and Cardinals (KNIGHT-BISHOPS) on g2 and g9, circled in green. Source: brainking.com

$$\begin{aligned}
 & \text{♞} = \text{Amazon (= queen + knight)} \\
 & \text{♔} \text{ } \text{♚} \text{ } \text{♖} \text{ } \text{♗} \quad (\text{♞} = \text{Empress = rook + knight}) \\
 & \text{♘} = \text{Princess (= bishop + knight)}
 \end{aligned}$$

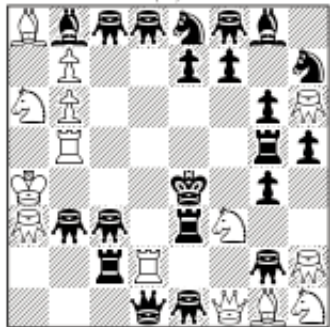
Figure 8. Section headings from *Fairy chess endings on an $n \times n$ chessboard* by Václav Kotěšovec, all using the 1Echecs font's left-half knight and right-half queen/rook/bishop glyphs for the KNIGHT-QUEEN, KNIGHT-ROOK and KNIGHT-BISHOP compounds.

grasshopper, a piece invented by DAWSON in 1913 for use in FAIRY PROBLEMS. It may be moved any distance along ranks, files, and diagonals to occupy, or capture on, a square immediately beyond an intervening man of either colour; it may not be moved unless it hops, nor may it hop over more than one man. The most popular of all fairy pieces, the grasshopper is represented by the symbol G or the figurine ♙.

nightrider, a LINE-PIECE invented by W. S. Andrews in 1907 and first used in FAIRY PROBLEMS in 1925 by DAWSON, who named it (perhaps after Nightrider Street, adjacent to the place where he attended problemists' meetings). It is represented by the symbol N or by the figurine ♞. (For players N means knight, but problemists use S as a symbol for that piece.) The nightrider can make, in one move, one knight's move or more in a straight line. On an otherwise empty board a nightrider at a1 could be moved to c2, e3, or g4, or, on another line, to b3, c5 or d7; it can be obstructed only by men on those squares where it touches down on its journey. (Compare ROSE.)

Figure 9. Excerpts from *The Oxford Companion to Chess*.

G40. Jacques Rotenberg &
Jean-Marc Loustau
2nd Pr. Rex Multiplex 1983
(v)



#2 14+21

Grasshoppers ♙, ♚

1... ♖e5 a 2. ♘g3 A #	1. ♘e5! [2. ♗f4#]
1... ♖f5 b 2. ♖b4 B #	1... ♗xe5 a 2. ♖b4 B #
1... ♗xf3 c 2. ♗c4 C #	1... ♖f5 b 2. ♗c4 C #
1... ♘e5 d 2. bxc8=♗ D #	1... ♗f3 c, ♖f3 2. bxc8=♗ D #
1... f5 e 2. ♘c5 E #	1... ♗xe5 d 2. ♘c5 E #
1... ♗xf3 f 2. ♘f2 F #	1... f5 e 2. ♘f2 F #
	1... ♗f3 f 2. ♘g3 A #
	1... ♗d6 2. ♗xe7#

This is the first realization of 6-fold Lacny.
Themes: Lacny 6x2

Figure 10. Sample problem and solution in figurine algebraic notation from the book *Israeli Chess Problem Art 1932-2010*, with WHITE and BLACK TURNED QUEENS representing grasshoppers

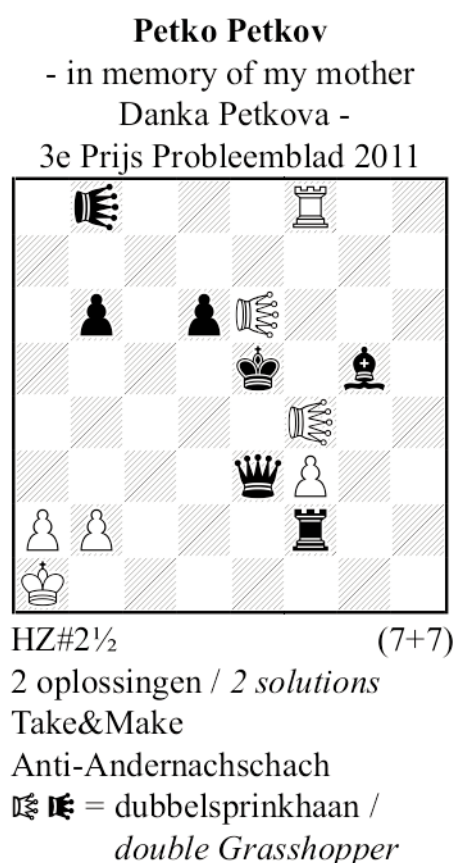
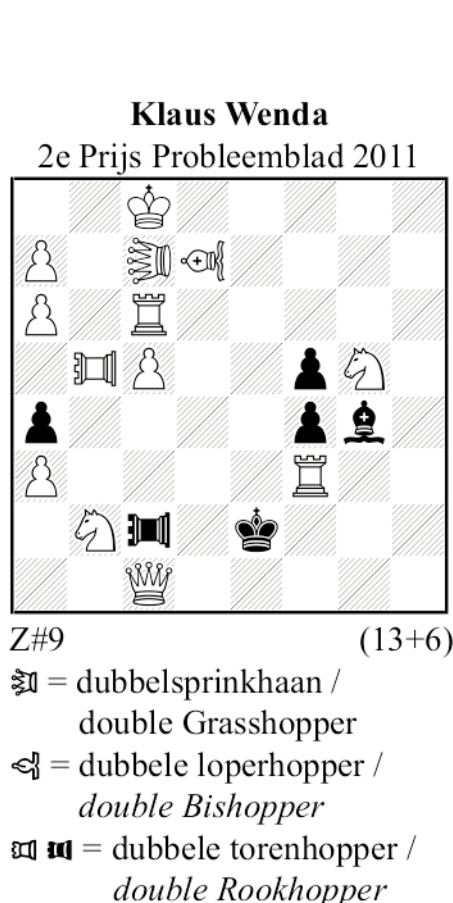


Figure 11. Diagrams from the October-December 2012 *Probleemblad*. Different fonts are used for the diagrams and captions, but the symbols retain their identities.

G321. Royal piece (rX): piece that executes a function of the King on the board. **Berolina Pawn** ♙: moves diagonally, captures straight ahead and promotes normally. **Hamster** ♙: moves like the Grasshopper but deflect 180° on passing over the hurdle. **Locust** ♙: a piece which moves only to capture. It lands on the same squares as the Grasshopper, but the arrival square must be empty, because the Locust captures its hurdle. I. 1. r♙a1=r♙ (Royal Hamster) ♙:d2-e1[+ ♙ c3] 2. r♙b2 ♙:c3-b4[+ ♙ e1=♙ (Hamster)]#, II. 1. ♙ e1=♙ ♙:c2-c1[+ ♙ c3] 2. ♙:c1-b1[+ ♙ e1] ♙:b1-a1[+ ♙ e1]#.

Figure 12. Solution and definition of terms from the August 2016 issue of *Problemist of Ukraine* (Проблеміст України), showing the TURNED PAWN and the PAWN ROTATED 270°, and the QUEEN ROTATED 90° and 270°.



Figure 13. Excerpt from the Greek Wikipedia using the TURNED KING to represent a prince or mann (a non-royal king).



Figure 14. Excerpt from the *Encyclopedia of Chess Problems* showing the TURNED KNIGHT, KNIGHT ROTATED 90° and 270° and TURNED QUEEN.

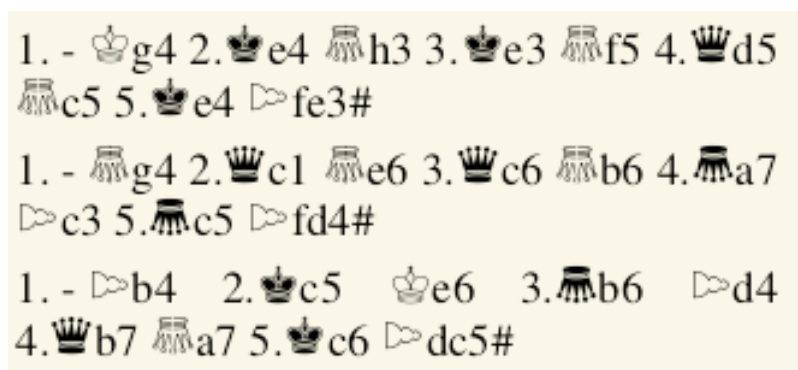


Figure 15. Excerpt from *234 Mých Nejlepších Šachových Úloh (234 Best Chess Problems)* by Václav Kotěšovec, showing the TURNED QUEEN and the PAWN ROTATED 90°.

#1 durch Schwarz 2+2
 Einsteinschach,
 Sherlock-Holmes-
 Problem
 ♞=königlicher Läufer,
 ♞=Supercarolinabauer,
 ♞=schlagender Ferskönig

Figure 16. Excerpt from *Feenschach* issue no. 217 showing the KING ROTATED 90° and 270°, and PAWN ROTATED 270°.

G357. 1. ♔a5 2. ♔a6 3. ♔a7 4. ♔b8 5. ♔c8 6. ♔d8 7. ♔e8 8. ♔f8 9. ♔g8 10. ♔h7 11. ♔h6 12. ♔g5 13. ♔f4 14. ♔e3 15. ♔d2 16. ♔c2 17. ♔d1 18. c2 19. c1 ♔+ ♞=♔e2#.
 Meredith. Black king visits all edges of board. Model mate (автом).

Figure 17. Solution from the November 2016 issue of *Problemist of Ukraine (Проблеміст України)* showing the KING ROTATED 90° figurine (circled in green).

A FAIRY ALPHABET

with (White) accepted symbols and (Black) suggested symbols for diagrams.

	Normal	Leo Family	Muslim Type	Supernumerary and Combined	General Purposes
ALFIL (2—2)			A or 		
BALLOON					 Reflecting Bishop, Archbishop, etc.
BISHOP					
CAMEL (1—3)			C or 		
COMBINED PIECE				QS, PS, etc.	
DABBABA (0—2)			D or  or 		
EDGEHOG					
EQUIHOPPER	E or 				
FERS (1—1)			F or 		
FILERIDER					 Vertical Riders, Hoppers, etc.
GIRAFFE (1-4)			GF or 		
GRASSHOPPER					
HUNTER				R/B, B/R, etc.	
IMITATOR				 or 	
IMITATING JOKER				 or 	
JOKER				 or 	
KING					 Protean, Joker, etc., Kings
LEAPER					 Angular, unnamed Leapers, etc.
LOCUST					 Lion, Orix, Magnetic Queen, etc.
LEO					
MAO					
NIGHTRIDER					
00,000					
PAWN					 Neutral, Berolina, Reversible, etc.
PAO					
QUEEN					
ROOK					
RANKRIDER					 Lateral Riders, Hoppers, etc.
KNIGHT					
TRIZEBRA			N or 		
UNICORN					 Diagonal Riders, Hoppers, etc.
VAO					
WAZIR (0-1)			W or  or 		
X-MOVER					
Y-CAPTURER				R-B, B-R, etc.	
ZEBRA (2—3)			Z or 		

Figure 18. Frontispiece to *A Guide to Fairy Chess* by Dickins, showing a range of fairy pieces and the author's preferred assignment of symbols. Dickins' writing predates the invention of dedicated neutral symbols and the equihopper symbol.

1.♙e7 ? (2.♘d6 #)
 1...♙d5 a 2.♗f3 A #
 1...♗xd4 b 2.♙f4 B #
 1...cxd4 c 2.♗c4 C #
 1...♙f6 d 2.♙xf6
 (1...♗:d4 2.♙b2 #) but 1...♙d5 !
 1.♙c6 ! (2.♘d6 #)
 1...♙~ 2.♗f3 A #
 1...♗xd4 2.♙f4 B #
 1...♗xd4 b 2.♗c4 C #
 1...cxd4 c 2.♗a3 #
 1...♙d5 a 2.♙xd5 #
 1...♙f6 d 2.♗f3 A
 (1...♗xd4 2.♙b2 #
 1...♙xc6 2.♗xc6 #)

Figure 19. Solution to a problem in issue no. 57 (2012) of *Variantim* using ROOKS ROTATED 90°, TURNED ROOKS, BISHOP ROTATED 270°, and TURNED KNIGHT.

Cyklická vazba 10 kamenů: ♔d1 →
 (přes d1) ♜e2 → (přes e1) ♞e1 → (přes
 e8) ♞f7 → (přes f1) ♚f1 → (přes h1)
 ♜h4 → (přes h1) ♞f2 → (přes f8) ♙f8
 → (přes f8) ♞d6 → (přes d8) ♜d8 →
 (přes d1) ♔d1.

Figure 20. Excerpt from *234 Best Chess Problems* by Václav Kotěšovec, using TURNED QUEENS and KNIGHTS, and KNIGHTS and BISHOPS ROTATED 90°.

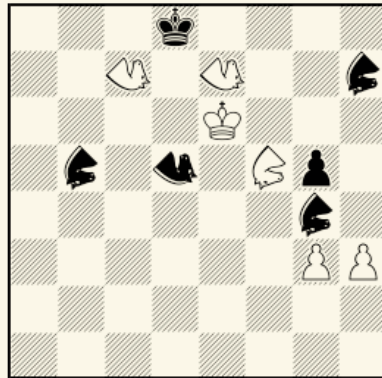
♚=Ferskönig
 b) ♚d8→b8 c) ♚d8→a7
 d) ♚d8→a3 e) ♚d8→c1

Figure 21. Example of the KING ROTATED 270° figurine, representing a royal fers, from the anthology *Moderne Kleinkunst (Modern Miniature-Art)*

G228. Dragon ♙a6 (Дракон) – комбінація ♚ (без права перетворення) та ♞, з першої та останньої лінії ходить тільки як ♞. *1...♙g5 2. ♞a5#; 1.♙d5(f5)? [2. ♞a5#] ♙g5#! 1. ♞:h3? [2. ♞a3#] e2!; 1. ♞f7! [2. ♙c7#] 1...♙d7 2. ♙a7#, 1...♙e6 2. ♞a2#, 1...♙f4 2. ♞f3#.

Figure 22. Excerpt from the May 2014 issue of *Problemist of Ukraine (Проблеміст України)* showing the KNIGHT ROTATED 45°.

2. Prize



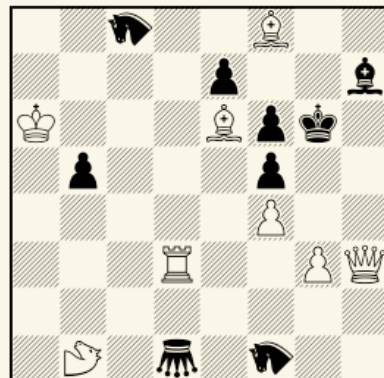
sh= =23 **Mao** ♡c7,e7/♠d5 (6+6)
Moa ♠f5/♣b5,g4,h7

1. ♠h6 2.g4 3.gh3 5.h1 ♣ 6. ♣f2 7. ♣e4
8. ♣d6 9. ♣:c7 11. ♠f8 12. ♠e8 13. ♠ef6
14. ♠f7 16. ♠h8 17. ♠f8 19. ♠g6
20. ♠6h7 21. ♣f6 22. ♣e4 23. ♣g5 g4=

Figure 23. Problem and solution from 234 *Mých Nejlepších Šachových Úloh* (234 *Best Chess Problems*) by Václav Kotěšovec, showing the KNIGHT ROTATED 135° and 225°.

24. Václav Kotěšovec

2665 idee & form 104/2009



#2	Rose ♣c8,f1	(8+9)
C+	Zebra ♠b1	

1. ♖e3? (2. ♘d4#) 1. - ♜g1!
 1. - ♜b1 a 2. ♚h6# A
 1. - ♜a7 b 2. ♚f5# B
 1. ♖d6! (2. ♘d4#)
 1. - ♜b1 a 2. ♚f5# B
 1. - ♜a7 b 2. ♚h6# A

Reciprocal change of guarding of two squares. Reciprocal change of mates.

Figure 24. Problem and solution from *Fairy Twomovers 2008-2010* by Václav Kotěšovec showing the KNIGHT ROTATED 90° and 315° .

1. - ♖d4 2.h6 ♗h5 3.♔d4 ♕e7 4.♔h7
 ♕f7 5.♔h8 ♗d6#

1. - ♗b4 2.h5 ♗f5 3.♔h6 ♗e1 4.♔e4+
 ♕f6 5.♔h7 ♗d5#

Figure 25. Solution from *234 Best Chess Problems* by Václav Kotěšovec, showing the KNIGHT ROTATED 45°.

- a) 1.♔e4xf5-f4 [+♗h7] ♗d4-f5+
 2.♔f4xf5-h8 [+♗e7] ♗e5-f7#
- b) 1.♔e4xe5-f4 [+♗b1] ♗d4-g3
 2.♔f4xf5-c1 [+♗b3] ♗g3-a2#
- c) 1.♔e4xd4-e6 [+♗f8] ♗f5-g7+
 2.♔e6xe5-h6 [+♗h5] ♗g7-f7#

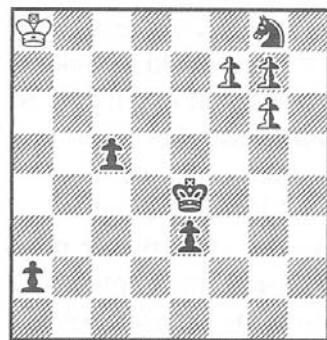
The herbivore and two birds nicely cooperate, with the aid of the black king and the two fairy conditions, to bring about nice mates.

Figure 26. Solution to a problem in issue No. 57 (2012) of *Variantim* using the KNIGHT ROTATED 135°, 225°, and 270°. The comment refers to the pieces they represent in this instance: sparrow, moose, and eagle, respectively.

a)	1. ♖c4	a ♗:a4#	A
	1. ♗c5	b ♗:c7#	B
	1. ♗c6	c b:c8 ♗#	C
	1. ♗d6	d f:e8 ♗#	D
	1. ♖e6	e ♗:e8#	E
	1. ♗e5	f ♗g:e3#	F
	1. ♖e4	g ♗:g6#	G
	1. ♗d4	h ♗c:e3#	H
b)	1. ♖c4(♗)	a ♗:c7#	B
	1. ♗c5(♗)	b b:c8 ♗#	C
	1. ♗c6(♗)	c f:e8 ♗#	D
	1. ♗d6(♗)	d ♗:e8#	E
	1. ♖e6(♗)	e ♗g:e3#	F
	1. ♗e5(♗)	f ♗:g6#	G
	1. ♖e4(♗)	g ♗c:e3#	H
	1. ♗d4(♗)	h ♗:a4#	A

Cyclic change of 8 mates!

Figure 27. Excerpt from *Fairy Twomovers 2008-2010* by Václav Kotěšovec showing the KNIGHT ROTATED 45° and 270°, and TURNED ROOK symbols.



1060

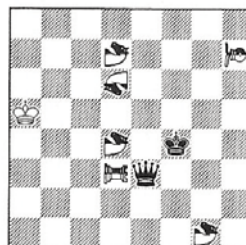
YLIKARJULA, Simo
Schach-Echo 1979

h#4 ♙ = Neutral

1060: 1. a1 ♙ ♙xg8 ♙ 2. ♙h7 ♙g8 ♙ 3. ♙h8
♙g7+ 4. ♙d4 ♙gxh8 ♙#.

Figure 28. Problem and solution from the *Encyclopedia of Chess Problems* using neutral pawns and bishops. Note that the NEUTRAL BISHOP appears in the solution but not the diagram: it is the result of promoting a NEUTRAL PAWN.

F/87
Georgi Jewsejew
Lew Grolman
Julia's Fairies 2013
H#-Abteilung
1. Preis



H=4 1+2+6
b) ♙a5→d8
♙=Triton ♙=Nereide
♙=Skylia ♙=Charybdis

Figure 29. Excerpt from issue no. 208 of *Feenschach*, showing neutral rotated symbols.

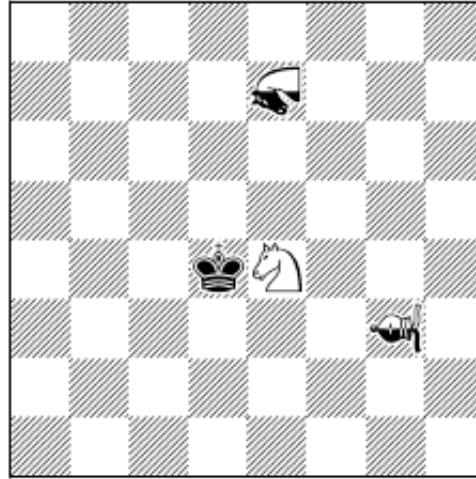
b) ♙d2→e2 c) ♙g1→b1
Sentinelles
♙=kg1. Grashüpfer
♙=Erzbischof

Figure 30. Excerpt from the *Annual Wenigsteiner Prize* tourney of 2007 showing the NEUTRAL TURNED KING and the BISHOP ROTATED 90°.

27

Kostěj Šoulivý

Šachovúmení VIII/2013



H#2 4.1;1.1

C+

Supercirce

♞=Vao ♞=Gnu

Figure 31. Excerpt from the 2013 Annual Wenigsteiner Prize,
with NEUTRAL BISHOP and KNIGHT ROTATED 270°.

- a) 1. ♞d6-b3 A ♞h1xb3[+♞b1] 2. ♞b1-d4 ♞f7xb3 B [+♞b1] #
b) 1. ♞f7-b3 B ♞d6xb3[+♞b1] 2. ♞b1-g1 ♞h1xb3 C [+♞b1] #
c) 1. ♞h1-b3 C ♞f7xb3[+♞b1] 2. ♞b1-d7 ♞d6xb3 A [+♞b1] #

Cyclic change of functions & double checkmate (Author)

The cyclical exchange of function, as well as the cyclical play on b3, works like clockwork (PE)

Figure 32. Solution and commentary from *Variantim* issue no. 67
with NEUTRAL TURNED QUEENS and both NEUTRAL KNIGHTS ROTATED 90°.

G308. Camelrider ♞a3 використовує хід верблюда (1,3), наприклад, ♞a1-b4-c7; Antelope ♞h1 – скакун (3,4). 1. ♞a3→d8 ♞h1-e5 2. ♞c7 ♞f7:e5→e8#; 1. ♞h1→c8 ♞f7-g5 2. ♞d7 ♞a3:g5→g8#; 1. ♞f7→a8 ♞a3-d4 2. ♞a4 ♞h1:d4→d8# Циклічна зміна функцій нейтральних фігур.

Figure 33. Solution to a problem in October 2015 issue of *Problemist of Ukraine*
(Проблеміст України) using the NEUTRAL TURNED KNIGHT (nightrider)
and NEUTRAL KNIGHT ROTATED 90° and 270° symbols.

1. ♖xg6-f7 2. ♖xf5-f4[+nPg3] 3. ♖xg3-h2[+♗h3] 4. ♖xh2-h1
 [+♕g1=♖] 5. ♖xa1[+♗b2] + ♖c1 6. ♖c6 + ♖xc6-b7 7. ♗a8-
 b8[+♖d6] + ♖d5 8. ♗c8 ♖xb7-b8 + 9. ♗xb8[+♗a7] #
 1. ♕g5 2. ♕g4 3. ♖xg4-f3 4. ♖xf3-f2[+♕g1=♗] 5. ♗g1-g4[+♖f6]
 6. ♗e2 + ♗b2 7. ♖xb2-a2 + ♖a1-a3[+♗b4] 8. ♗e7 ♖xe7-d8
 9. ♖xa3-a4 #

Figure 34. Solution to a problem in *Variantim* issue no. 66
 with NEUTRAL ROOKS, PAWNS, and BISHOPS ROTATED 90°.

1... ♗c3 2. ♖g1=♖ ♗b4 3. ♖e1 ♖g8=♗ +
 4. ♖e6 ♗xe6 [+♖d1]#
 1... ♗c5 2. ♖g8=♖ ♗b4 3. ♖xg4 [+♖h1=♗] + ♗b3
 4. ♖e4 ♗xe4 [+♖d8]#

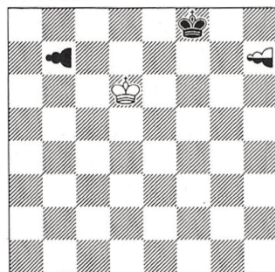
Reciprocal play between the promoted neutral rook and
 queen.

Figure 35. Excerpt from *Variantim* issue no. 57 using the NEUTRAL PAWN ROTATED 270°.

F973 Parrinello 1. ♖xc8-b8 ♗c8+ 2. ♗f8 cxb4 3. ♖xb4-b3+ ♖xf7-g8#; 1. ♖xg8-h8 ♗g8+ 2. ♗d8
 cxd4 3. ♖xd4-c3+ ♖xc7-c8#. *Zilahi, Dreiecksbewegungen der Heuschrecken, ausgezeichnet! (WS). A wonderful round trip matrix based on the characteristics of the neutral Locust and ideally
 suited to the helpselfmate. Imaginative concept + convincing form = outstanding composition! (CJF). Zeer goede analogie in beide oplossingen (FJ).*

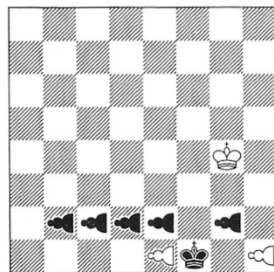
Figure 36. Solution and commentary from the October-December 2014 issue of *Probleemblad*,
 using NEUTRAL QUEENS ROTATED 270°.

10752
 Alain Biénabe
 Bordeaux



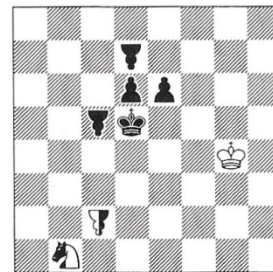
H#5 0.2; 1.1... C+ 1+2+1
 ♖=Horizontalbauer

10753
 Alain Biénabe
 Bordeaux



H=5 C+ 3+6
 ♖=Horizontalbauer

Sébastien Luce
 Alain Biénabe
 Clichy / Bordeaux



H#5 0.2; 1.1... C+ 1+5+2
 ♖=Berolinabauer

Figure 37. Excerpt from issue no. 199 of *Feenschach*,
 showing WHITE, BLACK, and NEUTRAL PAWNS in various rotations.

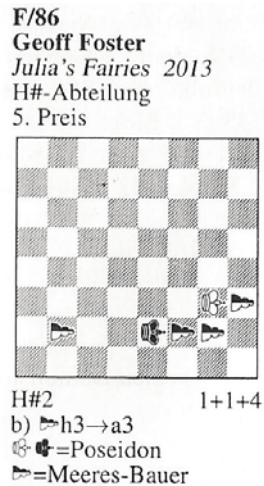


Figure 38. Excerpt from issue no. 208 of *Feenschach* with the NEUTRAL KING and PAWN ROTATED 90° symbols.

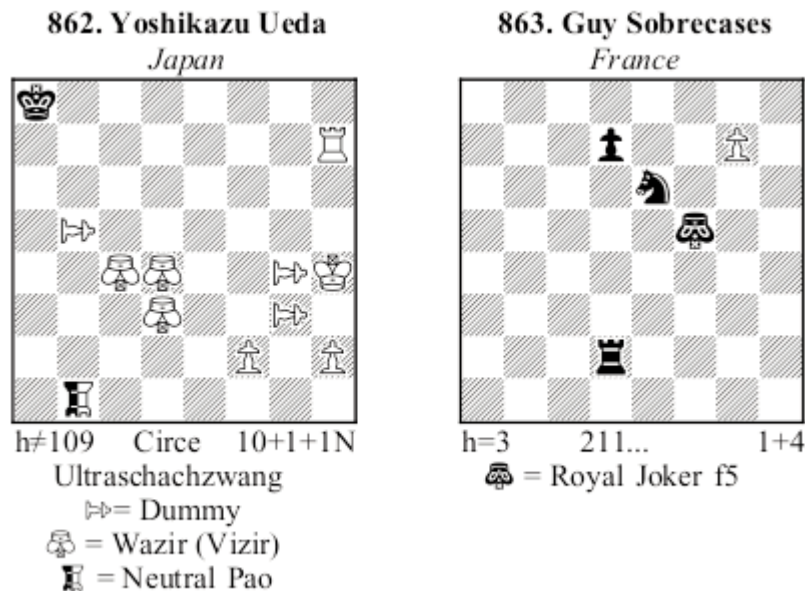


Figure 39. Excerpt from the Winter 2007 issue of *Mat Plus*, with PAWN ROTATED 90°, TURNED KING, and NEUTRAL TURNED ROOK.

a) 1... ♔c5 2. ♖d4 ♔xd4 3. ♙g8 (+ ♖e5) ♖xc3
 4. ♙h8 (+ ♖d3) ♖xd4 =
 b) 1... ♙e6 2. ♖xb3 ♙xf6(+ ♖c3) 3. ♖xa3 (+ ♔d6) ♙g7
 (+ ♔b4) 4. ♙f8 ♖xb4 =
 c) 1... ♖g6 2. ♔f5 ♔c2 3. ♖xc2 ♙g8 (+ ♔d3)
 4. ♙h7 ♖xd3 =
 Echo and echo chameleon pat positions nicely arranged by the various neutrals. The ParrainCirce is central to these positions (PE)

Figure 40. Solution and commentary from *Variantim* No. 62 (2014) with several neutral symbols: BISHOP, QUEEN ROTATED 90°, KING, TURNED BISHOP, and PAWN.

H=3 0.2;1.1;1.1
 b) ♖e7→e8
 Sentinelles
 ♖=kg1. Läufer

Figure 41. Excerpt from the *Annual Wenigsteiner Prize* tourney of 2007, using a NEUTRAL KING ROTATED 90° symbol.

H#2.5 Duplex
 Chamäleonschach,
 Sentinelles en pion neutre
 ♖=königlicher Läufer

Figure 42. Excerpt from the 2015 *Annual Wenigsteiner Prize*, using a NEUTRAL KING ROTATED 270°.

1.5.1 Chess pieces within normal text

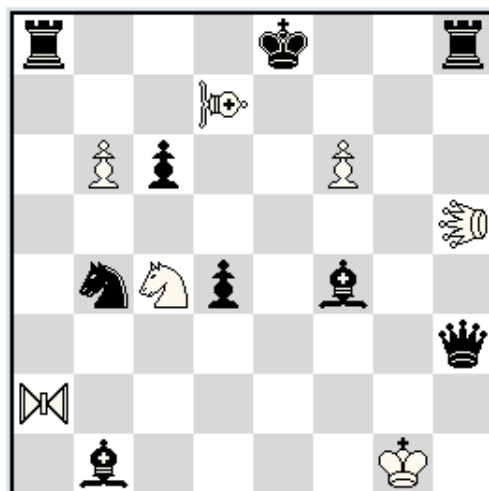
Sometimes you may need symbols of chess pieces within your normal text, e. g. to show the *Viele-Väter-Stellung* ♖c8, ♜b6, ♚a8, ♠a7. This is possible by `{\wK}c8`, `{\wB}b6`, `{\sK}a8`, `{\sB}a7`. Additionally you may use some of these symbols:

`\swL` ♖ a white bishop on a black square
`\ssL` ♜ a black bishop on a black square
`\wNr` ♞ a white nightrider
`\nNr` ♞ a neutral nightrider
`\sNr` ♞ a black nightrider
`\wGh` ♡ a white grashopper
`\nGh` ♡ a neutral grashopper
`\sGh` ♡ a black grashopper
`\Imi` ● an imitator, you may also use the **Circle** notation:
`\wC` ○ a white circle
`\nC` ● a neutral circle
`\sC` ● a black circle
`\wE` ⚡ a white equihopper
`\sE` ⚡ a black equihopper
`\nE` ⚡ a neutral equihopper
`\wX` ⚡ a white rotated equihopper
`\sX` ⚡ a black rotated equihopper
`\nX` ⚡ a neutral rotated equihopper

Figure 43. Commands for turned pieces and equihoppers in figurine notation, using the LaTeX Diagram package. Excerpt from the Diagram manual.

G252. Supercirce (Суперцирце) – узята фігура відроджується на будь-якому вільному полі дошки. При попаданні ♚ на останню лінію він негайно стає фігурою, на першій же лінії ♚ нерухомий і може покинути її при черговому узятті. Nonstop Equihopper ♚ (безупинний Рівнострибун) – рівнострибун, руху якого по прямій не можуть завадити розташовані на ній фігури; Neutral Erlking ♚ (нейтральний Ерлкінг) – ходить як ♚, але без виконання королівських функцій; Neutral Empress ♚ (нейтральна Цариця) – комбінація ♚+♛.

Figure 44. Excerpt from the October 2014 issue of *Problemist of Ukraine* (Проблеміст України), using the equihopper symbol, NEUTRAL ROOK and KNIGHT, NEUTRAL TURNED BISHOP, and NEUTRAL ROOK ROTATED 90°.



h#2 b) wPb6 → e5 (7+9)
 Nereid d7
 Equihopper a2
 Leo h5

Figure 45. Problem by Nikola Predrag featuring a common form of the equihopper symbol at a2, posted on *juliasfairies.com*: <http://juliasfairies.com/problems/jf-2014-ii/no-560/>

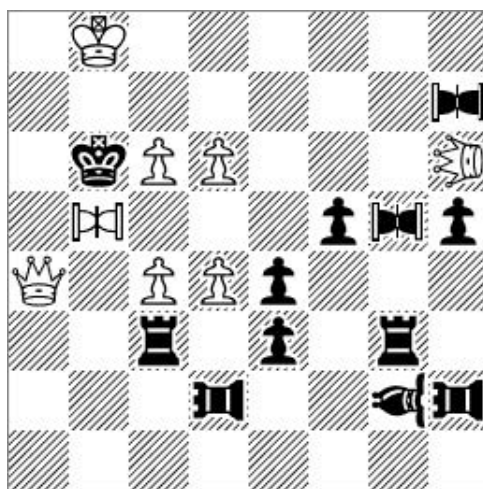
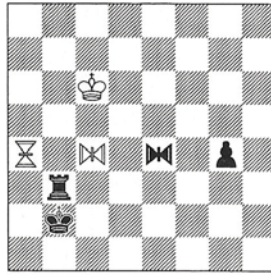


Figure 46. Diagram from a problem by Michel Caillaud, originally published in a 1995 issue of *Phénix*. The “pair of triangles flanking a rectangle” basis of the equihopper symbol is not as obvious in this form, though the symbol is still recognizable. Problem retrieved from Yet Another Chess Problem Database: <http://www.yacpdb.org/?id=306940>

10813
Peter Harris
Johannesburg



HS#3 3 Lösungen C+ 3+4
Supercirce,
Ultrapatrouilleschach
♞♞=englischer Equistopper
♞♞=französischer Equistopper

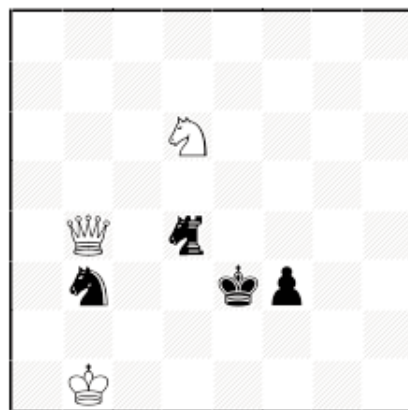
Figure 47. Examples of the standard and rotated equihopper symbols from issue no. 201 of *Feenschach*, here used for “English” and “French” variants of the equistopper, a sort of inverted equihopper, together in a single problem

G294. Окарі – стрибун, комбінація коня (1,2) та зебри (2,3).

Trojan Horse ♞ – має двокомпонентний хід: перша частина – хід коня, друга – скакуна (0,2) у напрямі довшої частини першого ходу, наприклад, ♞a1 може грати ♞a1-b3-b5-b7 або ♞a1-c2-e2-g2.

1. ♞e2-c4 ♞f2:c4[+♞c1] 2. ♞d4:c4[+♞e6] ♞d3:c1[+♞g8]#, 1. ♞d3:f2[+♞e5] ♞e2-e8 2. ♞d4:e5[+♞c3] ♞f2:e8[+♞a1]#, 1. ♞d4-e3 ♞f2-c4+ 2. ♞e3:e2[+♞h2] ♞d3:h2[+♞a6]#.

Figure 48. Excerpt from the October 2015 issue of *Problemist of Ukraine* (*Проблеміст України*), with NEUTRAL EQUIHOPPERS and KNIGHTS ROTATED 270°.



hs#3 2 sol. (3 + 4)
Augsburg, Circe
♞♞ = (R+S)

Figure 49. A winning problem in the 2014 Tzuica Tourney in Berne using a compound KNIGHT-ROOK symbol both in the diagram and in the caption.

Λύση:

1. ♞ε7+ ♔θ8
2. ♞ζ6#

Figure 50. Solution to an example problem on the Greek Wikipedia using a vertically fused form of the KNIGHT-BISHOP.

Παίζουν τα λευκά και κάνουν
ματ σε μία κίνηση με 1. ♞ θ4#.

Figure 51. Solution to an example problem on the Greek Wikipedia using a vertically fused form of the KNIGHT-ROOK.

G315. 1. ♔d4 ♙e4 2. ♔:e4[+ ♙d6] ♜f6#, 1. ♜f6 ♜:f6[+ ♜c5] 2. ♙e2 ♜e4#, 1. ♙e7 ♜:e7[+ ♙b5] 2. ♜e3 ♜d5#. Threefold diagonal echo.

Figure 52. Solution to a problem from the January 2016 issue of *Problemist of Ukraine (Проблеміст України)* using a white empress (KNIGHT-ROOK) along with a NEUTRAL KNIGHT and ROOK.

Alain Bienabe (France). Non- standard play of white and neutral Berolina Pawns.

1. ♜f5 ♜xg6 ep. [+ ♜f7] 2. ♜d5 ♜f7 3. ♜b4 ♜e8=♜ 4. ♜c4 ♜xa4 [+ ♜a7] #
1. ♜g6 ♜xg6 [+ ♜g7] 2. ♜c6 ♜f7 3. ♜d7 ♜f8=♜ + 4. ♜e8 ♜xf8=♜ [+ ♜b8] #

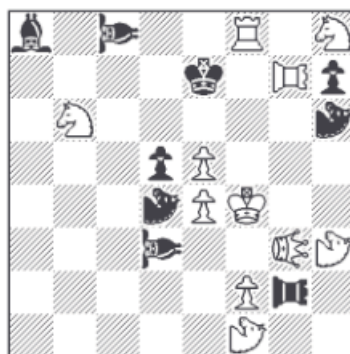
Figure 53. Solution from the Alex Ettinger 90 Memorial Tourney Award (judged by Michael Grushko), posted on the website Julia's Fairies <http://juliasfairies.com/israeli-ccs-tauber-ettinger/>, showing a WHITE TURNED PAWN.

Another elegant "Aristocrat" Miniature (full solution in the online version of the award).

1. ♞a8-a7---24. ♞c8xb8-a8[+ ♞c8] --- 47. ♞d8xc8-b8[+ ♞d8] ---
69. ♞e8xd8-c8[+ ♞e8] --- 91. ♞f8xe8-d8[+ ♞f8] ---
113. ♞g8xf8-e8[+ ♞g8] --- 136. ♞h8xg8-f8[+ ♞h8]---
137. ♞f8-g8 --- 143. ♞h3xg2-f1[+ ♞h3] 144. ♞f1-e1 ---
155. ♞b8-c8 ♞h8xb2-a1[+ ♞h8] #

Figure 54. Solution from the Michael Grushko 60 Jubilee Tourney, posted on Julia's Fairies <http://juliasfairies.com/michael-grushko-60jt-2/>, showing a WHITE KING ROTATED 270°.

James Quah
Tehtäväniekka 2015
Palkinto / Prize



#2 11+9
♙=L-leijona (LL) / Bishop-Lion
♜♞=ruusu-leijona (RL) / Rose-Lion
♚=leijona (LI) / Lion
♖♗=T-leijona (TL) / Rook-Lion

Figure 55. Problem and caption from a composing tourney held by Tehtäväniekka <http://www.saunalahti.fi/~stniekat/st/ENGL.HTM#awards>, the magazine of the Finnish Chess Problem Society (Suomen Tehtäväniekat), showing a WHITE ROOK ROTATED 90°.

a) 1.e8♚! (2.♚e4#)
1. - ♚:d4 a 2. ♜e7# A
1. - ♜:d4 b 2. ♙g5# B
1. - ♞:d4 c 2. ♞fh5# C
1. - ♙:d4 d 2. ♞h3# D
1. - ♞:d4 e 2. ♞gh5# E
(1. - ♞:f6 2. ♙g5#)

b) 1.e8♗! (2.♗e4#)
1. - ♚:d4(♗d8) a 2. ♙g5# B
1. - ♜:d4(♗d7) b 2. ♞fh5# C
1. - ♞:d4(♗d1) c 2. ♞h3# D
1. - ♙:d4(♗f8) d 2. ♞gh5# E
1. - ♞:d4(♗b8) e 2. ♜e7# A

Cyclic change of 5 mates
All defences on same square!

The first realization of such idea.

Figure 56. Solution to a problem from Václav Kotěšovec's Fairy Twomovers 2008-2010 with the BLACK KNIGHT ROTATED 45°..

G275. 1...♞c8(a) 2.♞:b3, ♞:b5, ♞:d3#(A,B,C); 1.♞d6? ~ 2.♞:b3#(A), 1...♞c8(a) 2.♞:b5#(B) (2.♞:d3?), 1...♞b2!; 1.d6? ~ 2.♞:b5#(B), 1...♞c8(a) 2.♞:d3#(C) (2.♞:b3?), 1...♞b7!; 1.♞d6! ~ 2.♞:d3#(C), 1...♞c8(a) 2.♞:b3#(A) (2.♞:b5?), 1...♞:d2 2.♞:g7#
Українська тема (циклічний ле Гранд), тема Мекігові, антидуальний вибір матів, вступні ходи на одному полі трьома різними фігурами.

Figure 57. Solution from from the October-December 2013 *Probleemblad*, showing a BLACK CHESS BISHOP ROTATED 270°.

Er waren 82 inzendingen. Bovenaan treffen we een achtvoudige uitwerking aan van de Kroaat Predrag (12) die 10,5 punt waard was: 1.♞a8 ♞a4 2.♞e4 ♞b5 3.♞b6+ ♞h3 4. ♞d5+ ♞xb6#; 1.♞d4 ♞b4 2.♞e3 ♞b5 4.♞c6 ♞g2 4.♞d5+ ♞xc6#. We zien een zwarte Anti-Grimshaw van ♞ en ♞ op b5, en een witte van ♞ en ♞ op d5. Erg taskachtig; meestal zijn jury's daar niet zo tuk op maar deze keer klaarblijkelijk wel.

Figure 58. Solution from the May 2015 *Problemist of Ukraine*, showing a BLACK CHESS BISHOP ROTATED 270°.

■ 289: I. 1.♞e5 ♞:e7(♞f6) 2.♞:h8(♞g7) ♞:h8(♞c3)#, II. 1.♞h6 ♞:e7(♞e5)+ 2.♞:h8(♞f6) ♞:h8(♞b2)#, III. 1.♞c3 ♞:e7(♞d4) 2.♞:h8(♞e5) ♞:h8(♞a1)#. Trojnásobné opakovanie troch echových matov posunutých po veľkej diagonále, v ktorých matuje neutrálny vao, prekážkou mu je jazdec, ktorý spolu s neutrálnym gnu kryje zvyšné kráľovské polia.
■ 290: I. 1.♞e5 ♞f5 2.♞:f5(♞c1) ♞:d2(♞g4)#, II. 1.♞e3 ♞e7 2.♞b5 ♞:b5(♞a6)#, III. 1.♞c3 ♞:d2(♞f5) 2.♞g6 ♞:f5(♞d2)#, IV. 1.♞c4 ♞e7 2.♞:c4(♞b5) ♞:e7(♞f8)#. Štyri riešenia zakončené echovými matmi.

Figure 59. An excerpt from the September 2013 issue of the Slovak magazine *Pat a Mat* ('Stalemate and Checkmate'), showing solutions to two different problems, one of which uses a NEUTRAL KNIGHT ROTATED 45° and a NEUTRAL KNIGHT ROTATED 225°.

	a	b	c	d	e	f
A	B	C	B			
B			C		C	A
C				B		A

1...♞:c5 e 2.♞f1# A.

■ 1062: 1.♞c5? hr. 2.♞f1# A, 1...♞c4 a 2.♞h6# B, 1...♞:c5 b 2.♞h4# C, 1...♞:c5 c 2.♞h6# B, 1...a4-a1♞!, 1.♞c5? hr. 2.♞h6# B, 1...♞c4 d 2.♞h4# C, 1...♞:c5 e 2.♞f1# A, 1...♞:c5 b 2.♞h4# C, 1...a4-d4!, 1.♞c5! hr. 2.♞h4# C, 1...♞c4 f 2.♞f1# A, 1...♞:c5 c 2.♞h6# B,

Figure 60. An excerpt from the June 2015 issue of the Slovak magazine *Pat a Mat*, showing the solution to a single problem using both NEUTRAL KNIGHT ROTATED 135° and a NEUTRAL KNIGHT ROTATED 315°

Tables

Table 1: Knight-Bishop compounds and their components in various fonts and symbol sets

Knight	Bishop	Knight-Bishop	Source
			<i>This proposal</i> (font)
			1Echecs (font)
			Quivara (font)
			Berlin (font)
			Wikimedia (image)
			Alfaerie (image)
			Motif (image)
			Gothic Chess (image)

- Notes:
- 1. The Alfaerie and Motif sets at chessvariants.org are GIF collections based on the Chess Alpha and Chess Motif fonts, respectively, extended with a variety of variant pieces.
 - 2. The Alfaerie set includes mitre-style cardinal symbols as an alternative to the explicitly compound knight-bishop symbols. They are not known to be used contrastively.
 - 3. The Gothic Chess set is used in United States Patent #6,481,716 “Method of playing a variant of chess”

Table 2: Knight-Queen compounds and their components in various fonts and symbol sets.

Knight	Queen	Knight-Queen	Source
			<i>This proposal</i> (font)
			1Echecs (font)
			Quivara (font)
			Alfaerie (image)
			Motif (image)

Table 3: Knight-Rook compounds and their components in various fonts and symbol sets

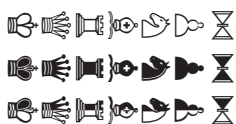
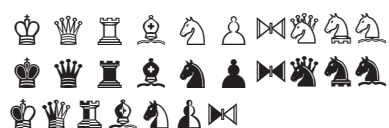
Knight	Rook	Knight-Rook	Source
			<i>This proposal</i> (font)
			1Echecs (font)
			Quivara (font)
			Wikimedia (image)
			Alfaerie (image)
			Motif (image)
			Gothic Chess (image)

Table 4: Neutral Knights in various rotations in various fonts.

		<i>This proposal</i> (font)
		1Echecs (font)
		GC2004X (font)

Table 5: The list of below is a key to finding attested characters in this document as well as a graphic view of the same.

1FA00	40	1FA11	19	1FA22	9	1FA33	54	1FA44	35
1FA01	4	1FA12	20	1FA23	53	1FA34	11	1FA45	22
1FA02	4	1FA13	1b	1FA24	18	1FA35	11	1FA46	24
1FA03	4	1FA14	18	1FA25	10	1FA36	11	1FA47	60
1FA04	4	1FA15	41	1FA26	27	1FA37	26	1FA48	1b
1FA05	28	1FA16	40	1FA27	27	1FA38	37	1FA49	1b
1FA06	25	1FA17	29	1FA28	2	1FA39	16	1FA4A	43
1FA07	56	1FA18	29	1FA29	12	1FA3A	12	1FA4B	43
1FA08	59	1FA19	29	1FA2A	30	1FA3B	11	1FA4C	43
1FA09	16	1FA1A	38	1FA2B	32	1FA3C	46	1FA4D	43
1FA0A	11	1FA1B	23	1FA2C	39	1FA3D	14	1FA4E	8
1FA0B	55	1FA1C	23	1FA2D	40	1FA3E	12	1FA4F	7
1FA0C	45	1FA1D	60	1FA2E	33	1FA3F	42	1FA50	8
1FA0D	3	1FA1E	13	1FA2F	37	1FA40	36	1FA51	8
1FA0E	15	1FA1F	10	1FA30	23	1FA41	5	1FA52	8
1FA0F	18	1FA20	19	1FA31	23	1FA42	31	1FA53	8
1FA10	11	1FA21	27	1FA32	59	1FA43	29		



A. Administrative

1. Title

Revised proposal to encode heterodox chess symbols in the UCS

2. Requester's name

Michael Everson

3. Requester type (Member body/Liaison/Individual contribution)

Individual contribution.

4. Submission date

2017-03-28

5. Requester's reference (if applicable)

6. Choose one of the following:

6a. This is a complete proposal

Yes.

6b. More information will be provided later

No.

B. Technical -- General

1. Choose one of the following:

1a. This proposal is for a new script (set of characters)

Yes.

Chess Symbols.

Proposed name of script

1b. The proposal is for addition of character(s) to an existing block

No.

1b. Name of the existing block

2. Number of characters in proposal

84.

3. Proposed category (see section II, Character Categories)

Category A.

4a. Is a repertoire including character names provided?

Yes.

4b. If YES, are the names in accordance with the character naming guidelines in Annex L of ISO/IEC 10646-1: 2000?

Yes.

4c. Are the character shapes attached in a legible form suitable for review?

Yes.

5a. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard?

Michael Everson.

5b. If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used:

Michael Everson, Fontographer.

6a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?

No.

6b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?

Yes.

7. Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?

No.

8. Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at <http://www.unicode.org> for such information on other scripts. Also see Unicode Character Database <http://www.unicode.org/Public/UNIDATA/UnicodeCharacterDatabase.html> and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

The characters should have the same properties as other symbols.

C. Technical -- Justification

1. Has this proposal for addition of character(s) been submitted before? If YES, explain.

No.

2a. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)?

Yes.

2b. If YES, with whom?

World Federation for Chess Composition (WFCC)

2c. If YES, available relevant documents

3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?

Everyone.

4a. The context of use for the proposed characters (type of use; common or rare)

Common.

4b. Reference

5a. Are the proposed characters in current use by the user community?

No.

5b. If YES, where?

6a. After giving due considerations to the principles in Principles and Procedures document (a WG 2 standing document) must the proposed characters be entirely in the BMP?

No.

6b. If YES, is a rationale provided?

6c. If YES, reference

7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?

8a. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?

No.

8b. If YES, is a rationale for its inclusion provided?

8c. If YES, reference

9a. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?

No.

9b. If YES, is a rationale for its inclusion provided?

9c. If YES, reference

10a. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character?

No.

10b. If YES, is a rationale for its inclusion provided?

10c. If YES, reference

11a. Does the proposal include use of combining characters and/or use of composite sequences (see clauses 4.12 and 4.14 in ISO/IEC 10646-1: 2000)?

No.

11b. If YES, is a rationale for such use provided?

11c. If YES, reference

12a. Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?

No.

12b. If YES, reference

13a. Does the proposal contain characters with any special properties such as control function or similar semantics?

No.

13b. If YES, describe in detail (include attachment if necessary)

14a. Does the proposal contain any Ideographic compatibility character(s)?

No.

14b. If YES, is the equivalent corresponding unified ideographic character(s) identified?