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ORIGINALS AND
UNORIGINALS 10
editor: Noam D. Elkies

Sergei Tkachenko and Nikolai Rezvov contribute (via AJR, whom I thank for the transcription to email) a new extension of a familiar Bishops-versus-Rooks picture:

No 11799 Sergei N. Tkachenko and Nikolai Rezvov

c6a7 0651.12
5/6 Win
No 11799 Sergei N. Tkachenko and Nikolai Rezvov With Black two Exchanges and a pawn ahead, 1.Bxg7? is not enough to win, so White must go for mate. The key also shields Bd4 from Rd8:
1.Sd7+ Ka8 (Kxa6; Sb8+ and Bc3\#)
2.Sb6+ Kb8.3.a7+ Kxa7/i 4.Sxc8+

Kb8/ii 5.Be5+ Kxc8 6.Be6+ gRd7
7.Bc7/iii f4 8.Bxf4, and now g5 9.Bc7 g4 10.Bxg4 R11.Bxd7\#, or 8...Re8 9.Bxd7+ Kd8/iv 10.Bg5+/iv Re7 11.Bf6! g5 12.Kd6 g4 13.Bxe7\#.
i) No choice for either side so far, and here if 3...Rxa7 4.Be5+ Rc7+ 5.Bxc7+ and 6.Bxd8 and suddenly it's White who has decisive material advantage
ii) Ka6 5.Bc4+ Ka5 6.Bc3+ Ka4 7.Sb6+ Ka3 and, now that the Knight is no longer attacked, White wins on material with 8.Bxg7.
Likewise next move 5 ...Ka8?
$6 . \mathrm{Sb} 6+$ and $7 . \mathrm{Bxg} 7$ wins.
iii) Mutual zugzwang! If Black could pass the next move, White would have only a draw after 8.Bf4 g5! 9.Bc7 f4.
iv) Not yet Kd6? Re7 and 11.Bg5 is stalemate!
The key position of Kings, Bishops and Rooks after White's 7th is familiar -- HvdH cites seven examples, notably Kasparyan's 40-year-old miniature twins (S.v.SSSR
8/1961): W Kc3,Bc1,Bb5/d7 B Ka3,Ra2,Rb2,b7 (1 Bd7! (Be8?), twin 1 Bb5! b6! 2 Be8! (Bd7?); this in turn doubled an idea shown by Richter in 1948). HvdH's list concludes with a 1999 study by the composers of No 11799 together with Oleg Pervakov (Uralski Problemist \#865, 3rd prize). The closest predecessor seems to be Ofer Comay's Schakend Nederland study (6/1980, EG\#4369: W Kc3,Bd6,Bf3 B Kc1,Rb1,Rb7, a7,e3,g5), which also features consecutive pins by both Bishops, and moreover has a side variation where Black resists with $10 \ldots$ elS+! In No 11799, interesting introductory play leads to the
key mutual Zugzwang; Tkachenko also points out that the two variations end in side-by-side chameleon mates, though a nitpicker may complain that the second mate is not forced since moves like 13.Bf5 maintain the win...

Our Unoriginal is again derived from 6-man "tablebases". This time the material is 7000.10 (KQP/KQQ) -- the first case of exhaustive analysis of a 6-man class with an unblocked pawn. As already reported in EG, this class arose in the Internet match "Kasparov vs. Rest-of-the-World", and helped renew interest in exhaustive 6-man analysis. Peter Karrer and Eugene Nalimov independently investigated 7000.10 with an advanced pawn on a center or Bishop's file. Once there is a pawn on the board, we can add underpromotion to the familiar questions of longest optimal play and mutual zugzwangs. Karrer extracted all 7000.10 positions with pawn on d7 whose outcome depends on promotion to Rook or Bishop. There are nineteen positions where White must promote a Bishop to draw, and 21 BTM positions where White must promote a Rook to win. (There is no case where B-promotion is the only winning move, or R-promotion the only drawing one.) In each of the 21 R-positions, Black is in check, but the resulting stalemate avoidances are quite varied. For instance:

No 11800 *C* P.Karrer (2000), version by NDE

g5f8 6000.20 3/3 Win
1.a8Q+/i Kg7/ii 2.Qal+/iii Kh7/iv 3.Qh1+/v Kg8/vi 4.d8R+!!/vii Qf8/viii 5.Qd5+ Kg7/ix 6.Qd7+!/x $\mathrm{Kg} 8 / \mathrm{xi} 7 . \mathrm{Qe} 6+$ and wins after Kh7 8. Rxf 8 or Kg 7 8.Qh6+ .
i) Corner \#1. 1.d8Q+? Qe8 draw.
ii) Ke7? 2.d8Q+ Ke6 3.aQd5\#.
iii) Corner \#2. We have now reached the tenth, and arguably best, of Karrer's 21 positions.
iv) Kg8 3.d8Q+ Qf8 4.Qd5+ Qf7 (Kh7 5.aQh1+) 5.aQa8+! Kg7 6.Qd4(e5)+ and mate follows. v) Corner \#3. Now Kg7? 4.Qh6+ and mates in two, so Black lets White promote with check... vi) ...since the stalemate traps after 3...Qh5+?! 4.Qxh5+ Kg7 are easily avoided: 5.Qh6+Kf7 6.Qf6+ Kg8 and now White promotes and mates.
vii) It turns out that $3 \ldots \mathrm{Kg} 8$ set a much more devious stalemate trap: 4.d8Q+? Qf8 5.dQd5+ Qf7 6.Qd8(a8)+/xii Qf8 7.hQd5+ Kh7! and White has nothing better than
8.Qxf8 Qg2+! 9.Kf6! Qf3+! draw! This is why White must make a Rook.
viii) if Kg 7 ? White chooses between $5 . \mathrm{Qa}+$ +, $5 . \mathrm{Qh} 6 \#$, and the thematic fourth-corner 5.Qh8\#.
ix) Now after Kh7 6.Rxf8 there's no stalemate, and the database confirms that Black soon runs out of checks, losing in 7 more moves.
x ) White must still be careful:
6.Qe5+? Kh7! 7.Rxf8 Qg2(g6)+
8.Kh4 (else bQ forks King and Rook) Qg5+! and it's stalemate after all.
xi) or Qf7 7.Qd4+ and mates. xii) Alas White can't play Qh1-a8+ as in note (iv) because Qd5 interferes!

We conclude by challenging the reader with some further amusing positions extracted from Karrer's underpromotion data. First: When and why must White promote a Rook in the BTM positions White Kg4 Qb4+ Pd7, Black Kd4 Qc8 Qal(7), White Ka3 Qc7+ Pd7, Black Kc3 Qc2 Qc7?
Second: Of the 21 positions where White must play $\mathrm{d} 8=\mathrm{B}$ to draw, nineteen have the White King in check (and $\mathrm{d} 8=\mathrm{B}$ is a cross check). Can you find the exceptional pair where White, with $\mathrm{K}+\mathrm{Q}+\mathrm{P}(\mathrm{d} 7)$ against $K+Q+Q$ and not in check, only draws with $\mathrm{d} 8=\mathrm{B}$ ?
Answers in the next column!

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EG 136
B3, p.93, I.Bondar. According to EV the final position of this study is drawn: 6.... Qe6+ 7.Kd8 Qg8+ 8.Kc7 Qc4+ 9.Sc6+ (9.Kb7 Qa6+ 10.Qxa6 stalemate; 9.Kd6 Qb4+ 10.Kc7 Qc4+ repeats; 9.Kd7 Qf7+ $10 . \mathrm{Kc} 8 \mathrm{Qe} 6+$ repeats) Ka6, when White can't co-ordinate his horde of knights: $10 . \mathrm{Nb} 6$ (10.Kd6 Qd3+ 11.Kc7 Qxc3 11.Sxc3 stalemate or 11.Kc5 Kb7 12.Sb6 Qe3+ and Black picks up a knight) Qxc3 11.Sxc3 stalemate.
EG 138
p.202, G.Slepian (Study of the year 1995). Spotlight's editor claimed a cook in EG 139, but after 3.... b2 4.Rfl+ blQ+ $5 . \mathrm{Rxbl}+\mathrm{Kxbl}$ 6.Qe4+ Kb2 7.Qe5+ Kcl he forgot to consult his database. In fact, White has an artistic win here by 8.Kxa4 Ra6+ (8.... h1Q 9.Qa1+) 9.Kb3 Rb6+ (9.... h1Q 10.Qb2+) 10.Kc3 Rc6+ (10.... h1Q 11.Qe3+) 11.Kd3 Rd6+ 12.Kc4 (12.Ke3? Re6)

Rc6+ 13.Kb5 Rc2 14.Qe1+ Kb2 $15 . \mathrm{Kb} 4$. So the study is sound.
No 11663, M.Roxlau. A reader attempted to cook this by $12 . \mathrm{f} 5 \mathrm{Bf} 3$ 13.Qf8, but according to MR black draws by $13 \ldots$... b3 14.Ke7 b2 15.f6 b1Q 16.Qxg8+ Kxg8 17.f7+ Kxg7 18.f8Q+ Kg6 19.Qf6+ Kh7 20.Qxf3 a3 21.Qxa3 Qb7+ 22.Kd6 (22.Kf6 Qg7+ 23.Kf5 Qf8+ 24.Qxf8 stalemate) Qb8+ 23.Kd5 Qb7+ 24.Ke5 Qg7+ 25.Ke4 Qg6+ 26.Kd5 Qf5+ 27.Kd6 Qf4+ 28.Kd7 Qxc4 with a database draw.
No 11669, E.Iriarte. This was also sent to the Kasparyan-MT 1997 (STES World Championship), where it was rejected because of $3 . .$. Rg6+ 4.Kh5 d5 5.Bxd5 Rc6 6.Qa3 gxh2 7.Kg5 h1Q 8.Bxh1 (winning according to note iii) d5 9.Qxa7+ Qxa7 10.Bxa7 Rxb5 11.Bxd5, and in this messy position Black is clearly better after 11.... Bb7.
EG 139
C1, p.243. The win after 1 .... Kd6 2.Sc7 Kd7 is not unique: $3 . \operatorname{Sh} 7 \mathrm{Kd6}$ 4.Sf6 wins, too.

No 11717, A.Visokosov. It seems that a bSg 4 is missing.
No 11716,
N.Rezvov/S.Tkatchenko.

This looks unsound. MQ suggests 1.... Kg6 2.Bb4 Bb8 3.e5 Rc7 4.d6 Rxb7 5.e6 Bxd6 6.Bxd6 Ra7 7.e7 Kf7 8.Kd5 Ke8 (the notes give only 8.... Ra2), and I can't find a win here: 9.Kc6 Ra4 10.Kxb6 Kd7 11.Bc5 Re4 12.Ka6 (after 12.e3 Re5 White must give a pawn anyway) Rxe2 13.b6 Ra2+ 14.Kb7 (14.Kb5 Re2) Ra5 15.Bd6 Ral 16.Kb8 Rel
(but not 16.... Ra2 17.b7 Ra1 18.Bc5 Ra2 19.e8Q+ Kxe8 20.Kc7 Rb2 $21 . \mathrm{Bb} 6$ and wins) $17 . \mathrm{b} 7$ (else a perpetual attack on the bishop) Kxd6 18.Kc8 Kxe7 19.b8Q Rcl+ draw. Another attempt for White is 9.e4 (trying to provide the bishop with an outpost on e5) Ra4 10.e5 Kd7 11.e8Q+ (11.e6+ Ke8 and stalemate is in the air) $\mathrm{Kxe} 812 . \mathrm{Kc} 6$ Rc4+ 13.Kxb6 Kd7 14.Kb7 Rcl 15.b6 Re1, and White can't make progress.
No 11722, A. and S.Manyakhin. Many duals in both lines of this study (I will quote just two of them): After 2.... Kf8 there is also 3.Bc4 (threatening 4. $\mathrm{Qg} 8+\mathrm{Ke} 7$ 5.Qd8+ Kd6 6.Qxd7+ Kc5 7.Qb5+ Kd6 8.Qb6+ Ke7 9.Qd8 mate ) Qf3 (or 3.... d3 4.Qg8+ Ke7 5.Qd8+ Kd6 6.Qxd7+ Kc5 7.Qa7+ with a skewer) 4.Qg8+ Ke7 5.Qd8+ Kd6 6.Qxd7+ Kc5 7.Qb5+ Kd6 8.Qb4+ Kc6 9.Qb7+ with another skewer. After 2.... Kh7 there is $6 . \mathrm{Bg} 6 \mathrm{Kg} 8$ 7.Kxd7 Qa2 (best) 8.Qh7+ Kf8 9.Qh8+ Qg8 10.Qf6+ and wins.

No 11723, A. and S.Manyakhin. A dual: 8.Bb3 Kb1 9.Ke2 Qh7 (9.... Qe7+ $10 . \mathrm{Kd1}$ ) 10.Qa2+ Kc1 11.Qa1+ Qbl 12.Qc3+ wins.

No 11724, G.Umnov. A dual: 3.Be6 prevents Black's Be8-trick and leaves him with no defence against the advance of the g-pawn, e.g. 3.... Bd7 4.Bc4 Rf5 5.g6.
No 11728, K.Tarnopolski. The same as 135.11457 and unsound (see Spotlight EG 136).

## No 11732, K.Tarnopolski.

Unsound, 1.... Sc4+ 2.Kc7 (2.Kc6

Sd2 3.e5 Sf3 draw) Kc3 picks up the pawn and draws, e.g. 3.Sf7 Kd4 4.Sg5 Sd2.

No 11733, N.Kralin. A dual: 3.Bf3 Qh7 4.Sf5 (PS) leads to a positional draw: 4.... Bf6 (4.... Kd8 allows 5.e7+ Bxe7 6.Bd5 draw, and 4.... Be7 makes no difference) 5.Bh5+ Kd 8 6.Kb7 Bg 5 (6.... Be7 allows 7.g8Q+ Qxg8 8.Sd4 draw) 7.Kc6, and Black is completely tied down and can't make any progress.
No 11734, K.Tarnopolski. In the final position it is Black who wins by $7 . . .$. Qd5+.
No 11741, D.Pletnev. The GBRclass 1300.01 is notoriously difficult. This position, however, is easy to understand once one realises the power of the recurring formation Qd6(c7)-Ke4,Rf5, which leaves Black without a good move.
Please note the thematic try $1 . S g 6+$ Kf6 2.h8Q+ Kxg6 draw. On the short side of the rook there is not enough manoeuvring space for the queen.
No 11749, V.Kovalenko. A dual: 4.a8Q h2 5.Kc2 Ke2 6.Qe4+ Kf1 7.a7 and wins.

No 11750, E.Markov. No solution: 1.... Rd3 mates quickly, e.g. 2.Sf5 (2.Ke2 Rg3) Ra2+3.Ke1 Rb3.

No 11754, L. and V.Katsnelson. A dual: 3.h4 Ke7 (else 4.Kc6 wins) 4.Kc6 Kd8 5.Kc5 (PS) draws. Black's extra pawn isn't worth much, as he can't produce a passed pawn, while the white king is very active. Both 5.... Kd7 6.Kd5 c6+ 7.Ke5 Ke7 8.c5 h6 9.g3 g5 10.Kf5 gxh4 11.gxh4 Kf7 12.Ke5 and 5....

Kc8 6.Kc6 Kb8 7.Kc5 Kb7 8.Kb5 c6+ 9.Ka5 Kc7 10.c5 Kb7 11.Kb4 draw fairly easily.
No 11769, K.Stoichev. Unsound. 2.c8Q looks good for White, but worse is $13 . \mathrm{d} 8 \mathrm{Q}$ Bxc6+ 14.Qd5 and wins.
No 11771, A.Manyakhin. A dual: 1.Bxd2+ Kg7 2.Bc3+ Kf8 3.Qh7 (threatening Bb4+) Ke8 4.Bb4 and mate.
No 11774, E.Fomichev. No solution: $5 \ldots h 1 \mathrm{R}+$ or $5 \ldots$. Sxc8 $6 . \mathrm{g} 8 \mathrm{Q}$ h $1 \mathrm{R}+$ win for Black.
No 11776, G.Amiryan. Unsound, 2. Kg 7 is a much simpler win. After 2.... Bc4 3.Be8 Ka6 4.Bf7 Bb5 5.e6 Kxa5 6.e7 White is a couple of tempi up compared to the actual solution.
No 11777, A.Volchok. A dual: 3.Sf5+ Kc5 (3.... Kc7 4.Se3 Kb6 5.Sc4+ Kxb5 6.Sxa5 wins) 4.Ke5 a4 (4.... Kxb5 5.Kd4 Kb4 6.Sxh4 wins) 5.b6 Kxb6 6.Kd4 wins.

No 11778, G.Stanev. A dual: 4.Kd3 Kxal $5 . c 7 \mathrm{~Kb} 26 . \mathrm{c} 8 \mathrm{Q}$ with a win that dates back to Lolli.
No 11779, A.Pallier. A dual: 5.Rb4+ Ka3 6.Rc4 Rf2 7.Rc5 wins.

No 11780, K.Stoichev. JN, a strong otb-player, points out, that this study "anticipates" the top-level game Svidler-Anand, Dos Hermanas 1999. After 69 moves this game was agreed drawn in the following position: e4f7 0003.31 c 7 a7f5h6d4 $4 / 3$. Svidler, exhausted after a very tough fight, missed 70.Kxd4 Sb5+ 71.Kc5 Sxa7 72.Kb6 which leads to Stoichev's position (mirrored) after move 1 .

No 11782,
E.Fomichev/V.Vinichenko. A dual: 6.Sxcl g1Q 7.Qb8+ Kxcl 8.Qc7+ Bc 3 (else mate) 9.Qxc3+ Kbl 10.Qb3+ Kal 11.Qxd5 with a database win (even without wPa2). No 11783, G.Amiryan. A dual: 1.Re5+ Kg6 (1.... Kh4 2.Kd4) 2.Re4 and now 2.... Kf5 3.Kd4 g3 (3.... f2 4.Re8) 4.Re5+ Kf4 (4...Kf6? 5.Re3) 5.Re4+ Kf5 6.Re5+ draw or $2 \ldots$. Kg5 3.Re5+ Kf4 4.Kd4 f2 (4.... g3 5.Re4+ see above) $5 . \operatorname{Re} 8$ with a transposition back to the solution.
No 11787, J.Cvetkov. Anticipated. The introductory exchange leads straight to W.Issler, 3rd prize New Statesman 1970 (EG 24.1303).
No 11788, G.Amiryan. A dual: 4.Kc3 b2 5.Kb3 wins.

No 11789, G.Amiryan. Unsound, 1.... Rb2 wins for Black, who quickly picks up the bishop (e.g. 2. Qg8+ Kf2 3.Bb3 Rb6). The resulting GBR-class 3120 is a general win for the pieces from a consolidated initial position.
No 11796, A.Trushanov. Interesting to compare with the well-known T.Gorgiev, 64 1936, which has an almost identical initial position (wRb1,bRh8), but a completely different solution.
DIAGRAMS AND
SOLUTIONS


SOLUTIONS
editors: John Roycroft
Harold v.d. Heijden

## Alexander Pushkin 200

The award if this tourney commemorating the 200th anniversary of Russian national poet Alexander Pushkin's birth was published in Shakhmatnaya kompozitsia 37 xi2000 The tourney was judged by Sergei N.Tkachenko. 39 studies were entered by 33 composers from Armenia, Georgia, Russia and Ukraine
"A superb tourney! The abundance of miniatures is akin to a prescribed poetic form, and the richness of ideas is akin to the bewitchery of Pushkin's chefs d'oeuvre."

No 11801 N.Kralin 1st prize Pushkin-200

blf2 $0350.10 \quad$ 4/3 BTM Draw No 11801 Nikolai Kralin (Moscow). "The poorly placed wBh1 is a natural target. Let's try $1 \ldots \mathrm{Be}$, after which 2.Bc1? $\mathrm{Bg} 6+3 . \mathrm{Kb} 2 \mathrm{Rb} 6+$ 4.Kc3 Rb1 5.Kd2 Rb3 6.d6 Rd3+ 7.Kc2 Rh3+ wins, as does 2.Bf8? $\mathrm{Bg} 6+3 . \mathrm{Kb} 2 \mathrm{Rb} 6+4 . \mathrm{Kc} 3 \mathrm{Rb} 1$
5.Bc5 +Kg 3 6.Bd6+Kg4 7.Bg2

Rg 1 . Then there is 2.d6? Rxd6 3. $\mathrm{Bc} 1 \mathrm{Bg} 6+4 . \mathrm{Kb} 2 \mathrm{Rb} 6+5 . \mathrm{Kc} 3 \mathrm{Rb} 1$ 6.Kd2 Rb3 7.Kd1 Rd3+ 8.Bd2 Rd7 9.Ba8 Bf5zz 10.Bh1 Rg7 11.Be1+ Ke3 12.Bd2+ Kd3 and 13...Rg1, same outcome. But it's still too soon to resign: 2.Bg5! Rg6 3. Bc 1 Rg 4 4.d6, and the worst is over for White." The given main line runs:
1...Bd7 2.d6/i Rxd6 3.Bc1 Bf5+
4.Kb2 Rb6+ 5.Kc3 Rb1 6.Kd2 Rb3
7.Kd1 Rd3+ 8.Bd2 Rd6/ii 9.Bb7

Bg6 10.Ba8/iii Rd7 11.Bh1/iv Bf5 $12 . \mathrm{Ba} 8$, and the perpetual pendulum between the opposite corner squares (h1 and a8), gracefully skirting the looming reci-zug, weaves a fine thread into a positional equilibrium."
i) $2 . \mathrm{Bg} 5 ? \mathrm{Bf} 5+3 . \mathrm{Kb} 2 \mathrm{Rb} 6+4 . \mathrm{Kc} 3$ $\mathrm{Rb} 15 . \mathrm{Bh} 4+\mathrm{Ke} 26 . \mathrm{Bg} 2 \mathrm{Rg} 1$ and 7...Rxg2.
ii) "Whistling up an attack out of nowhere Black provokes 9.Ba8?
Rd7, a familiar zugzwang."
iii) 10.Kc1? Rb6. 10.Bc8? Bh5+ and 11...Rc6+. 10.Bh1? Rd7 11.Ba8 Bf5zz.
iv) "Revealing the zugzwang antidote's secret: $11 \ldots \mathrm{Rg} 7$, fires a blank as the g -file is closed." "The best I have ever seen with this material: GBR class 0350. Lines from Pushkin's Ruslan and Lyudmilla - 'On the seashore by the bay stands an oak in green...' are magically translated to the chessboard by the Moscow GM. Total harmony of form and content!"

No 11802 N.Ryabinin
$=2$ nd/3rd prize Pushkin-200

b1h7 0200.14
4/5 Win
No 11802 N.Ryabinin (). "How the greedy 1.Rxa7+? gets its comeuppance will emerge with the final position." 1.Rb7+ Kxh6/i 2.Ra6+ Kg 5 3.Rb5+/ii Kf4 4.Ra4+ Kg3 5.Rg5+Kh3 6.Rh5+ Kg3 7.Rh1 Kg2 8.Rd1/iii f1Q/iv 9.Rg4+ Kf2 10.Rxf1+Kxf1 11.Kc2 f2 12.Kxd2, with a win.
i) Kg 8 2.Rb8+ Kh7 3.Rxa7+ Kxh6 4.Rh8+ and 5.Rh1.
ii) 3.Ra5+? Kf6 4.Ra6+ Ke5 5.Rb5+ Kd4 6.Ra4+ Kc3 draw.
iii) 8.aRh4? f1Q+9.Rxf1 Kxf1
10.Kc2 f2 11. Kxd2 Kg2 12.Rg4+
$\mathrm{Kf3}$, and the game is level.
iv) In (iii) this promotion is with check.
"White's far-sightedness is shown by leaving bPa7 so as to avoid a stalemate discomfiture at the end. A purposeful piece of study theatre with bright thread of ideas. The composer has built on his earlier work (eg 64 in 1989, 1st pr) endowing it with originality."

No 11803 V.Vlasenko $=2$ nd/3rd prize Pushkin-200

d4g7 0043.11
3/4 Draw
No 11803 V.Vlasenko (Kharkov region). "The extra bS and the absence of weak spots in Black's position bode ill for White's prospects of a draw." $1 . \mathrm{Bf} 4 \mathrm{c} 6$ 2.Be5+ Kf7 3.Kc3/i Ke6 4.Bg3 Sf5 5.Bf2 Ba4 6.Kd2 Bb3 7.Kc1 Ba2 8.Kc2/ii Kd5 9.b3 Sd4 10.Kc3/iii c5 11.b4 Se2+ 12.Kb2 draw, and not 12.Kd2 cxb4 13.Kxe2 b3, with a win.
i) "The idea is for $w K$ to penetrate to al and transfer wB to the long diagonal, after which wK can take his ease in his bomb-proof bunker." ii) "Intending to collar the offender with $9 . \mathrm{b} 3,10 . \mathrm{Kb} 2$ and $11 . \mathrm{Kxa} 2 . "$ iii) "Going back to move 4, if: 4.Bh2(Bb8)? Ba4 5.Kd2 Bb3 6.Kc1 Ba2 7.Kc2 Sf5 8.b3 Sd4+ 9.Kc3 $\mathrm{Kd} 510 . \mathrm{Bg} 1(\mathrm{Bb} 8)$, there would now follow Se2(Sb5)+!"
"Elegant capture-free piece-play (the Ukrainian composer's visiting card) exercises a familiar fortress,
and all from one mould. The classic poet said: The translator of prose is a hack, the translator of poetry is a rival!" Which do we have here? Poetry, of course!"

No 11804 Yu.Zemlyansky $=4$ th $/ 5$ th prize Pushkin- 200

b6a8 0146.12
4/6 Draw
No 11804 Yuri Zemlyansky
(Krasnoyarsk, Siberia). 1.Rd3 c2 2.Rc3 Be4 3.Rxc2/i Bxc2
(Sd7+;Kc7) 4.Bg2+ bSc6 5.Kc7 Ba4 6.Bh1/ii Bb5/iii 7.Bd5 Ba4 8.Bg2(Bh1) Bb5 9.Bd5, positional draw.
i) 3.Be6? bSc6 4.Bb3 Kb8 5.a3
(Bxc2,Sc8+;) Sd4 6.Ba4 Sc8+
7.Ka6 Bd3+ 8.Ka5 Kb7.
ii) 6.Bd5? Bb5zz 7.a3 Ba4 8.Bg2 Bb3 9.Bxc6+ Sxc6 10.Kxc6 d5. Or 6.Be4(Bf3)? Sb5+ 7.Kxc6 Sc3(Sd4). iii) $\mathrm{Sb} 5+7 . \mathrm{Kxc} 6 \mathrm{Ka} 78 . \mathrm{Bg} 2 \mathrm{Ka} 6$ 9.Bfl and 10.Bxb5+.
"Comical! Despite Black's overwhelming superiority he can't put a spanner in wB's works to avoid the draw, said $w B$ having slyly stood its ground by retiring to
the corner during the 'phony war'. Let no one say that there's no emotion in chess!"

No 11805 V.Kalyagin $=4 \mathrm{th} / 5$ th prize Pushkin-200

alc2 1307.00
3/4 Win
No 11805 V.Kalyagin
(Ekaterinburg). 1.Sd4+ Kc3 2.Qf6, with two pairs of echoed, symmetrical, lines:

- Se3/i 3.Sc6+/ii Kb3/iii 4.Qe6+

Sc4 5.Sa5+ Kb4 6.Sxc4, or

- Sc5 3.Sf3+ Kc2/iv 4.Qf5+ Sd3
5.Sel+Kd2 6.Sxd3, or
-Kd2 3.Qf4+Kd3 4.Qf1+Ke3
5.Qf3+ Kd2 6.Qe2+Kcl 7.Qc2+

Rxc2 8.Sb3 mate, or

- Kb4 3.Qd6+ Kc4 4.Qa6+ Kc5
5.Qc6+ Kb4 6.Qb5+ Ka3 7.Qb3+ Rxb3 8.Sc2 mate.
i) The line: Rf2 3.Qc6+Kb4 4.Qb5+ Ka3 5.Qb3 mate shows that bR has no good square, but bS, as we shall see, is scarcely better off.
ii) 3.Sf5+? Kb3 4.Sxe3 Ra2+ 5.Kb1

Sc3+ is no more than a draw.
iii) Kc2 4.Qf2+ Kd3 5.Se5+ Ke4 6.Qf3+ Kxe5 7.Qxe3+.
iv) Kb3 4.Qb6+ Kc4 5.Se5+ Kd5 6.Qc6+ Kxe5 7.Qxc5+.
"Everything here is out of the ordinary. The 'aristrocratic' material, the reci-zug basis [this is supposedly after 2.Qf6. AJR], the instructive play crowned with sacrifice. There is a story to be told. As judge in the XIII Team Championship of Russia I rejected it because of doubt about the accuracy of one of the lines. Alas, communication failed (critical dates were extended/passed) and the study was excluded. The author subsequently demonstrated his favourite's robustness and the present judge is glad to correct the injustice now." AJR: the implication is that the organisers did not give the judge time properly to consult the composer, so the latter's saving analysis was not available. Hew Dundas' comment: Too much symmetry, not enough play.

No 11806 K.Tarnolpolsky $=1 \mathrm{st} / 3$ rd honourable mention Pushkin-200

f6e8 0310.31
5/3 Win

No 11806 K.Tarnolpolsky
(Moscow).
1.c5? Kd7 2.Be5 Kc6. Or 1.Be5?

Rc6+ 2.Kf5 Rxb6, and the draw is clear. 1.Ke6! Rxc4/i 2.b5/ii Kd8/iii 3.bxa6 Rc7/iv 4.a7/v Rxa7 5.bxa7

Kc7 6.a8R (or to B or S), winning.
i) Rc6+2.Kd5 Kd7 3.b7 Kc7
4.b8Q+ Kxb8 5.Kxc6.
ii) 2.Bc5? Kd8 3.Kd6 Kc8 4.Kc6

Rc1 5.b7+ Kb8 6.Kb6 Rd1 7.Kxa6 Ra1+ 8.Kb6 Rd1 9.Kc6 Rc1, a positional draw.
iii) Hew Dundas would like to see alternatives analysed.
iv) Rc6+4.Kd5 Rxb6 5.Bxb6+Kc8 $6 . \mathrm{Ba} 7$ wins.
v) $4 . \mathrm{bxc} 7+? \mathrm{Kxc} 75 . \mathrm{Ba} 7 \mathrm{Kc} 6$. Or 4.Kd6? Kc8 (bxc7 stalemate) 5.Be5 Rd7+ 6.Kc6 Rc7+.
"A memorable short-haul whose innards are worth more than many a lengthier effort. One tut-tuts over just the one thing - the organic promotion dual right at the end."

No 11807 A.Gasparyan
$=1 \mathrm{st} / 3 \mathrm{rd}$ honourable mention Pushkin-200

glg6 3540.21
6/5 Draw

No 11807 A.Gasparyan (Armenia). "bQ may be 'hissing' but 1.Rxa8? $\mathrm{Be} 3+2 . \mathrm{Kh} 1 \mathrm{Rf} 1+3 . \mathrm{Bg} 1 \mathrm{Rxg} 1$ mate." 1.Ra6+! Kg5 2.R6a5+ Kg6 3.Ra6+ Kg7 4.Ra7+ Qxa7+/i 5.Rxa7+ Kg8 6.Ra1/ii Rf1+7.Kxfl gxh2 8.Ra8+ Kg7 9.Ra7+ Kg6 10.Ra6+Kg5 11.Ra5+Kxg4 12.Rh5 Kxh5 13.g4+ Kxg4 14.Kg2 draw. i) Kg 8 5. Rxa8 $\mathrm{Be} 3+6 . \mathrm{Kh} 1$, and the pin scuppers 'Rf1+'.
ii) $6 . \operatorname{Re} 7 ? \mathrm{Rf1}+7 . \mathrm{Kxf1} \mathrm{gxh} 28 . \mathrm{Re} 8+$ Kg 7 9.Re7+Kg6 10.Re6+Kf7 wins. "The correct choice of square for $w R$ is determined by a sacrificial combination enabling wK to break through to the corner. But we don't care for the set-up in the lower right corner."

No 11808 M.Pastalaka, V.Samilo, P.Maly $=1 \mathrm{st} / 3 \mathrm{rd}$ hon. mention Pushkin-200

e7h5 0314.23
5/6 Win
No 11808 M.Pastalaka, V.Samilo, P.Maly (Ukraine). 1.a7 Sc6+/i
2.Bxc6 Rh7+ 3.Kf6 Rxa7 4.Sxa7 g4
5.Sb5/ii e2 6.Sd4 e1Q 7.Sf5, with:

- Qe2 8.Sg3+ and 9.Sxe2,
winning, or
- b3 8.Bd5 Qe8 9.Sg7+ and 10.Sxe8.
i) Rh7+ 2.Kd6 Rxa7 3.Sxa7 g4 4.Bfl g3 5.Sb5 Kg4 6.Sd4 Kf4 7.Bc4 b3 8.Se2+ Kf3 9.Kc7, reaching the forlorn $S$.
ii) $5 . \mathrm{Bb} 5 ? \mathrm{~g} 3$ 6.Bf1 Kh6 and 7...e2 or 7...g2.
"The domination finale rings fresh in the classic confrontation of two minors against the Q. Sadly, there are not enough highlights with tactical points."

No 11809 An.G.Kuznetsov, M.Gromov 4th hon. mention Pushkin-200

f7d7 0312.01
No 11809 An.G.Kuznetsov, M.Gromov (Vladimir). 1.Bh3+? e6 2.Bxe6+ Kd8 is a draw. So: 1.Bb5+ Kd8 (Kd6;Sc4+) 2.Sc4 Ra8/i 3.Sa5
Kc8/ii 4.Ke8 Ra7 5.Sc6 Ra8 6.Sd8
Ra7 7.Be2/iii Rd7/iv 8.Bg4 e6
9.Sxe6 winning.
i) e5 3.Ke6 e4 4.Sa5 Ra8 5.Kd6 e3 6.Sc5 Kc8 7.Bd7+ Kb8 8.Sc6 mate. ii) Ra7 4.Sc6+. Or Rc8 4.Sb7 mate. iii) 7.Bfl? Rd7 8.Bh3 e6 9.Sxe6 Rd3, drawing the battery's sting.
iv) e6 8.Bf3 Rg7 9.Sf7 Rg8+
10.Ke7 Rg7 11.B- e5 12.Be4 wins. "The composers have doubled the theme of their 1st pr. study in the V.Rudenko JT, [the award is in the EG pipeline] which was cooked as a result of the setting, namely a file to the left. The difference may look minimal but the effect is cardinal, denuding the content. The vibrant extra variation falls away - the one in which bR , short of a safe square, moves away with a pseudo-roman effect, and with that the study steps out of the chef d'oeuvre category into that of run-of-the-mill decent work."

No 11810 A.Manvelyan 5th hon. mention Pushkin-200

a3al 0043.32
5/5 Draw
No 11810 A.Manvelyan (Armenia). 1.e6/i b6/ii 2.e7 Bd4 3.Bd6 Sxe7 4.Bxe7 Bc5+5.b4/iii Bxe7 6.b3 Bc5 $7 . \mathrm{bxc} 5 \mathrm{bxc} 58 . \mathrm{b} 4 \mathrm{c} 4$ and the stalemate nirvana is achieved.
i) 1.Bd6? Bh2 2.b4 Sxe5 3.Bxe5 Bxe5 4.b3 Bb2 mate.
ii) Bd4 2.Bd6 Bf6 3.Kb4 Bd8
4.Kxb5 Kxb2 5.e7 Sxe7 6.Bxe7. Bxe7 7.Kb6.
iii) 5 .Bxc5? is natural but wrong: bxc5 $6 . \mathrm{b} 4 \mathrm{c} 47 . \mathrm{b} 3 \mathrm{~Kb} 18 . \mathrm{bxc} 4 \mathrm{bxc} 4$ $9 . \mathrm{b} 5 \mathrm{c} 310 . \mathrm{b} 6 \mathrm{c} 211 . \mathrm{b} 7 \mathrm{c} 1 \mathrm{Q}+$.
"The thematic try of (i) explains the 'roman' theme of the key, decoying bB to e7 instead of to e5. However, the try does also allow the unstalemating $2 \ldots \mathrm{Kbl}$, in other words an artistic flaw, a dual, which severely reduces its value."

No 11811 L. Topko $=1 \mathrm{st} / 2$ nd comm Pushkin-200

h8e4 0411.01 4/3 BTM Draw
No 11811 Leonid Topko ().
1...Rh5+2.Kg7 Kf3 3.Se5+/i Kg2
4.Rg1+Kxh2 5.Sf3+Kh3 6.Sg5+ Kh2/ii 7.Rg4/iii Kh1 8.Sf3 and 9.Rgl mate.
i) $3 . \mathrm{Sd} 4+? \mathrm{Kg} 24 . \mathrm{Rg} 1+\mathrm{Kf} 25 . \mathrm{Rh} 1$ $\mathrm{Kg} 26 . \mathrm{Rg} 1+\mathrm{Kf} 2$, positional draw.
ii) Kh4 7.Kf6zz Rh8 8.Rh1+.
iii) "Domination, on top of the zugzwang."
"3.Se5+ is a subtlety leading into the classic GBR class 0401."

No 11812 G.Amiryan
$=1 \mathrm{st} / 2 \mathrm{nd}$ comm Pushkin-200

b8b4 1300.21 4/3 Win
No 11812 Gamlet Amiryan (Armenia). 1.Qe1+? Kb3 2.Qc1 Ra6 3.Kb7 Ra2 4.Kb6 Rxb2 5.Kc5 Rb1, and there's no win for White. So:
1.Qd2+! Kb3 2.Qd3+Kb4 3.Qa3+, with:

- Kb5 4.Qb3+ Ka5 5.Qd5+ Kb6 6.Qd8+ Ka6 7.Qd3+ Ka5 8.Qd2+ Ka4 9.Qc1/i Kb3 10.Kb7(Kc7)
Rc4/ii 11.Kb6 Ra4 12.Kc5 Ra2
13.Kd4, tempo play to neutralise the pawn, or
- Kc4 4.Qc3+ Kd5 5.Qd2+ Ke5 6.Qc1 Kd4 7.Kb7 Rc4 8.Ka6(Kb6) Kd3 9.Kb5 Re4 10.b4 Re2 11.Ka4 Rd2 12.Kb3 wins.
i) "Switching to the main idea but with gain of time."
ii) Rg 6 11.Qa1 Rxg3 12.Qa3+ Kc4 13.Qxg3 clQ 14.Qc7+.
"A logical study useful for the practical player with its story-lines, but the play is arid."

No 11813 M.Pastalaka $=3 \mathrm{rd} / 4$ th comm Pushkin-200

elf5 0400.12 3/4 BTM Draw
No 11813 M.Pastalaka (Khrkov). 1...g2/i 2.Rg1 b2 3.Kf2 Kg4 4.Kxg2/ii Rc2+5.Kh1+Kh3 6.Rf1 Rf2 7.Rb1 Rxf7 8.Kg1, fixing the draw.
i) b2 $2.0-0+\mathrm{Kg} 43 . \mathrm{Kg} 2 \mathrm{Rc} 2+4 . \mathrm{Kg} 1$ g2 5.Rf4+ Kg3 6.Rf3+.
ii) 4.Rxg2+? Kf4 5.f8Q Rxf8 6.Rgl Rc8 7.Rb1 Rc2+ wins.
"A lightly scissored play-ful piece with confident insertion of castling. Not bad at all for a first-time composer."

No 11814 Leonard Katsnelson (St Petersburg). 1.Rf4 Rh1/i 2.f7/ii Rh8+ 3.f8Q Rxf8+ 4.Rxf8 d2/iii 5.Rc8+ Ka7 6.Ra8+ Kxa8 7.Kc7+ $\mathrm{Ka} 78 . \mathrm{Ra} 8+\mathrm{Kxa} 89 . \mathrm{axb} 7+\mathrm{Ka} 7$ 10.b8Q+ wins.
i) d2 2.f7 Rh1 3.Rc8+ Ka7 4.Ra8+ Kb6 5.Rf6+Kb5 6.axb7 d1Q+ 7.Ke7 wins.
ii) $2 . \mathrm{Rc} 8+$ ? Ka 7 3.f7 $\mathrm{Rh} 8+4 . \mathrm{f} 8 \mathrm{Q}$ Rxf8 5.Rxf8 Rxa6, and the pawns are unstoppable.
iii) Rxa6 5.Re8 Ra4 6.Rd5 wins. "Sacrificial wRR duet opens the way for wP to reach his goal."

No 11814 L.Katsnelson $=3 \mathrm{rd} / 4$ th comm Pushkin-200

d8b8 0800.23
5/6 Win

No 11815 V.Kalandadze 5th commendation Pushkin-200

c1b8 0203.12
4/4 Draw
No 11815 Velimir Kalandadze
(Tbilisi). 1.Rc8+Kb7 2.Rc7+Kb6
3.Rc6+Kb5 4.Rc5+ Kb4 5.Rc4+

Kxc4 6.Rxc3+ Kd4 7.Rd3+ Ke4
8.Kb2 e1Q 9.Kxa2 Qc1 10.Rc3 Kd4 11.Rd3+Kc4 12.Rc3+ Kxc3 stalemate, and not the first one! "A smooth welding of familiar components."

No 11816 N.Ryabinin special prize Pushkin-200

d8g5 0170.21
5/4 Draw
No 11816 Nikolai Ryabinin (Tambov). For a study 'upset'. 1.Bc1+Kg6 2.Rh6+ Kg7 3.Be3 Bf4 4.Rh3 Bxe3 5.Rg3+ Kf7 6.Rf3+ $\mathrm{Kg} 7 / \mathrm{i} 7 . \mathrm{Rg} 3+\mathrm{Kf} 8$ 8.Rxg2/ii Be6 9.Kc7/iii Bf5 10.b5 Kf7 11.b6 Bh3 12.b7 Bf4+ 13.Kb6 Bxg2 14.Ka7 $\mathrm{Be} 3+$ 15.Ka6 Bf4 16.Ka7, positional draw.
i) $\mathrm{Kg} 67 . \mathrm{Rg} 3+\mathrm{Bg} 5+8 . \mathrm{Kd} 7 \mathrm{Bd} 5$
9.Kd6 Bb7 10.Ke5 Kh5 $11 . \mathrm{e} 4$ draw.
ii) "R+PP vs. BB. That balance of force is good for White. But here the reverse is the case!"
iii) "This clears up the why and wherefore of 6 .Rf3+. If bK were now on $\mathrm{f} 7,9$...Bh3! would now win."
"Technical, purposive, subtle Ryabinin all over!"

The composer: "I'll let you into a little secret. A study in which the pair of bishops weave a net of domination over a rook was sent anonymously to the XIII Team Championship of Russia. As I was a judge in this event the study could not compete - in any case it wasn't thematic for that event... Later it was awarded 2nd commendation (?!?) in the 1999 Leonid Topko JT. In the present tourney an inside-out version was submitted, not just reversing the concept but introducing a fresh nuance (6.Rf3+!) that gains time for White's pawn to put on a spurt."

a6b4 0133.11 3/4 BTM Draw
No 11817 V.Vlasenko (Kharkov region).
For the best artistico-analytical study. $1 . . . \mathrm{Sc} 7+2 . \mathrm{Kb} 6 \mathrm{Sa} 8+3 . \mathrm{Ka} 6$ Be4 4.Ra2/i Kb3/ii 5.Rh2 Bg2 6.Kb5 Kc3 7.Kc5 Kd3 8.Kd6 Ke3
9.Kd7 Kf3 10.Kc8 Kg3 11.Rxg2
$\mathrm{hxg} 212 . \mathrm{Kb} 7$ - and we knew all
along this was going to be the standard book draw of rook's pawn vs $Q$, didn't we? In fact it's a draw by just the one tempo! i) 4.Rf4? Sc7+5.Kb6 Sd5+ wins. Or 4.Re2? Bd3+. 4.Rh2? Bg2. 4. $\mathrm{Rb} 2+(\mathrm{Rd} 2)$ ? Kc 3 5.Ra2 Bg2 6.Ra3+Kc2 7.Rg3 Bf1 8.Kb7 h2 9.Kxa8 h1Q+ 10.Kb8 Qh8+ 11.Kb7 Qb2+. Lastly, and most temptingly, not 4.Rf8? Sc7+ 5.Kb6 Sd5+ 6.Ka6 h2 7.Rh8 h1Q 8.Rxh1 Bxh1 9.a8S Kc5 10.Ka7 Kc6 11.Ka6 Be4 12.Ka7 Bd3 13.Kb8 Ba6 14.Ka7 Kb 5 , and, the composer quoting EG102 p966, position 368, wS is lost in a further 16 moves.
ii) Bg 2 5.Ra4+, and it's either stalemate or 6.Rh4.
"A grand logical canvas exhibiting the widest range and most subtle of shades that is a challenge to any solver. Tough, but no doubt about it, a grandiose splicing of poetry with prose."

No 11818 Gherman Umnov (Podolsk). 1.g7 Rg8 2.Kc8 a2 3.Rb8+Kxa7 4.Rb7+ Ka6 5.Kb8 Ba4 6.Ra7+ Kb5 7.Rb7+ Kc6 8.Rc7+ Kd5 9.Rc1 Bc2/i 10.Ra1 Bb 1 . Now it's left to the kings. 11.Kc7 Ke6 12.Kc6 Kf7 13.Kd7 Rxg7 14.Bxg7 Kxg7 15.Ke7/ii Kh6 16.Kd6 Kh5 17.Kd5 Kg5 18.Ke6 Kh6/iii 19.Kd6 Kg5 20.Ke5 and it's a draw.
i) $\mathrm{Bb} 310 . \mathrm{Rc} 5+\mathrm{Kd} 4$ 11.Ra5 Kc3
12.Kc7 Kb2 13.Kd6 alQ 14.Rxa1 Kxal 15.Ke5 draw.
ii) 15.Ke6? Kg6 16.Ke5 Kg5zz 17.Kd5 Kf4 18.Kd4 Kf3 wins.
iii) Hew Dundas would like to know what is amiss with 18 ...Kf4.
"Consecutive representation of the copy-cat theme: both sides perform self-imprisonment of a $R$, and there is a mirror dance of the kings to finish. A pity that to bring off this rather special notion the play is rather desiccated, lacking in both points and paradox. And any link between the two phases is, well, in name only."

No 11818 Gh.Umnov special hon mention Pushkin-200

b8b6 0440.32
6/5 Draw

No 11819 B.N.Sidorov special commendation Pushkin-200

c2a7 0044.38 6/11 Win
No 11819 Boris N.Sidorov
(Apsheronsk). For a study in the romantic style. 1.Sc8+ Ka6/i 2.d8S b4 3.Bc4+ b5 4.Bd5 b3+5.Kxd2 b4 6.Bc4+ b5 7.Bd5 f1S $+8 . \mathrm{Ke} 2 \mathrm{~g} 1 \mathrm{~S}+$ 9.Kf2 Sh3+ 10.Kf3 Sg5+ 11.Ke2 f3+ 12.Kf2 Sh3+ 13.Kxf3 Sg5+ 14. $\mathrm{Ke} 2 \mathrm{Sg} 3+15 . \mathrm{Kf} 2$ wins, as $\mathrm{Bb} 7+, \mathrm{Ka} 5 ; \mathrm{Sc} 6$ mate can be delayed very little longer.
i) Kb8 2.d8Q a1Q 3.Sxb6+Ka7 4.Qxa8+ Kxb6 5.Qxb7+ Kc5 6.Qc6+ Kb4 7.Qd6+ Ka4 8.Bb3 mate.
"Kaleidoscopic!"

## Atilla Koranyi MT

This formal international tournament was judged by Pal Benko, who comments "I accepted with pleasure to judge the memorial tourney for the excellent composer Attila Koranyi (1934-1997), who was my friend". Only 15 studies competed. The provisional award was published in

Sakkélet no. 1-2 and no. 3-4 2000, the final award in no. 5-6 2000.
Péter Gyarmati, study editor of Sakkélet, kindly provided an English translation of the award.

No 11820 Anatoly Kuryatnikov and Evgeny Markov 1st Prize Koranyi MT

b8b6 0033.54
6/7 Win
No 11820 Anatoly Kuryatnikov (Latvia) and Evgeny Markov (Russia) 1.a7/i Be4/ii 2.dxc7/iii Sc5/iv 3.a8S+/v Bxa8 4.c8Q Sa6+ 5.Kxa8 Sc7+ 6.Kb8 Sa6+ 7.Qxa6+ Kxa6 8.h5 g4 9.h6 g3 10.h7 g2 11.h8Q g1Q 12.Qxf6+ Qb6+/vi 13.Qxb6+ Kxb6 14.a3 Kc6 15.Kc8 Kb6 16.Kd7 Kb7 (Kc5; Kc7) 17.Kd6 (Ke6?; Kc6) Kb6 18.Kd5 Ka5 19.Kc5 (Kc6?; Ka6) Ka6 20.Kc6 (Kb4?; Kb6) Ka5 21.Kb7 and wins.
i) 1.dxc7? Sc5 2.c8Q Sxa6+; 1.d7? Se5 2.d8Q Sc6+ and Black wins.
ii) Se5 2.a8Q Sc6+ 3.Qxc6+ Kxc6 4.dxc7 Bf5 5.h5 g4 6.h6 g3 7.h7 g2 8.h8Q glQ 9.Qxf6+ wins.
iii) 2.d7? Se5 3.a8Q Bxa8 4.d8Q Sc6+; 2.a8Q? Bxa8 3.dxc7 Bb7.
iv) Se5 3.a8S+ Bxa8 4.c8Q.
v) $3 . \mathrm{a} 8 \mathrm{Q}$ ? Sd7+ 4.Kc8 Bxa8 $5 . \mathrm{Kxd} 7$ Bb7; 3.c8Q? Sa6+ 4.Qxa6+ Kxa6.
vi) In the provisional award $12 \ldots \mathrm{Ka} 5$ was the main line. But apart from 13.Qd8+ Ka6 14.Qd6+ Qb6+ 15.Qxb6+ etc. also 13.Qc6 wins. The correct solution is taken from the final award.
"This is a multiphase study in Koranyi's spirit. Since it is difficult to discover original tactical motivs, one should combine more of such motivs. In this study we see a battle of white passed pawns against two black pieces. Nice play. The second phase is a queen endgame leading to a pawn ending. Only a single tempo determines the final outcome".

No 11821 Yochanan Afek 2nd Prize Koranyi MT

b5c1 0103.22
4/4 Win
No 11821 Yochanan Afek (Israel)
1.Ka4 b2 2.Kxa3 Se4 3.Rxe4 b1S+ 4.Ka2/i Sc3+ 5.Kal Sxe4 6.b5 (f4?; Sd6) Sd6 7.b6 Kd2 8.f4 Ke3 9.f5 wins.
i) $4 . \mathrm{Ka} 4$ ? $\mathrm{Sc} 3+5 . \mathrm{Ka} 5 \mathrm{Sxe} 46 . \mathrm{f} 4 / \mathrm{ii}$

Kd2 7.f5 Ke3 8.b5 Kf4 9.b6 Sd6 10.f6 Kg5 11.f7 Sxf7 12.b7 Sd8; 4.Kb3? Sd2+ 5.Ka4/iii Sxe4 6.f4/v Kd2 7.b5 Ke3 8.f5 Kf4 = . ii) $6 . \mathrm{b} 5 \mathrm{Sxf} 27 . \mathrm{b} 6 \mathrm{Sd} 38 . \mathrm{b} 7 \mathrm{Se} 5=$.
iii) 5.Kc3 Sxe4+ 6.Kd4 Sxf2 7.b5 Sg 4 8.b6 $\mathrm{Sf6}=$, or here 6.b5 Sxf2 7.b6 Se4.
"The author shows a spectacular and precise King manoeuvre. It is difficult to find and to refute Black's counterplay".

No 11822 Péter Gyarmati 3rd Prize Koranyi MT

e4g4 0130.11
3/3 Win
No 11822 Péter Gyarmati
(Hungary) 1.Ra2/i Be7 (Bc7; Ra7) 2.Rc2, and:
-Kg5 3.Kf3 Bd6 4.Rc6 Be5/ii 5.d6 Kf6 6.d7+ Ke7 7.Re6+, wins, or:
-Bd6 3.Rc6 Bf4 4.d6 g2 5.d7 g1Q 6.Rg6+ Bg5 7.Rxg5+ Kxg5 8.d8Q+ wins.
i) Tries: 1.Rc2? Be7 ZZ 2.Ra2 (Rc7; Bg5) Bc5 3.Ra8/iii g2 4.Rg8+ Kh3 5.Kf3 g1S+ draws, 1.Rd2? Bg 5 2.Ra2 Bf4 (Be7?; Rc2) 3.Rc2 Kg5 (Bd6?; Rc6) 4.Rc8 Bd6 5.Rd8 Bc7
6.Rd7 Bb8 draws, e.g. 7.d6 Kf6 8.Rd8 g2; 1.Rb2 Bf6 2.Ra2 Be7; 1. Re 2 ? $\mathrm{Bc} 72 . \operatorname{Rc} 2 \mathrm{Bf} 43 . \operatorname{Ra} 2 \mathrm{Kg} 5=$.
ii) Bb8 5.d6 Kf6 6.d7+ Ke7 7.Rc8 wins.
iii) 3. $\mathrm{Rg} 2 \mathrm{Bd} 64 . \mathrm{Rc} 2 \mathrm{Be} 7$.
"This study has a nice rook manoeuvre, especially enhanced by the thematic tries (always appreciated by Koranyi) and mutual zugzwangs. Here, as well as in similar few piece studies it is difficult to estimate the degree of computer assistance in composition".

No 11823 I. Schrancz and Péter Gyarmati HM Koranyi MT

d5g3 0031.21
4/3 Win
No 11823 I. Schrancz and Péter Gyarmati (Hungary) 1.Sd6/i Kg4/ii 2.Sf5/iii Bf8 3.Ke5/iv Kg5/v 4.Ke6 Kg6 5.e5 (Kd7?; Kf6) Kg5 6.Sh4, wins.
i) 1.Se3? Kf4 2.Sf5 Bf8 3.Sd4 Kg4 draws.
ii) Bf8 2.Ke5 h4 3.Sf5+ Kg4 4.Sxh4 $\mathrm{Bg} 7+$ (Kxh4; Kf6) 5.Ke6 Kxh4 6.Kf5 wins; Kf4 2.e5 Bf8 3.e6 h4 $4 . \mathrm{Sc} 8$ wins.
iii) 2.Ke5? Bg7+/vi 3.Ke6 Bf8 4.Sf5 Kg 5 5.e5 Kg6 6.Sh4+ Kg7 (Kg5; Kd7) draws.
iv) 3.Ke6? Kg 5 4.Kd7 Kf6 5.Ke8 Bc5(b4) 6.Se3 Ke6 7.Sd5 Ba3/vii 8.Sc7+ Kf6 9.Sb5 Bc5 10.Sc7 Ba3 draws.
v) h4 4.Sxh4 Kxh4 5.Kf6, wins; Ba3 4.Sd6 Bb2+ 5.Ke6 Bg7 6.Ke7 h4 7.Sf5 h3 8.Sxg7 h2 9.f8Q wins. vi) Not Kg5? 3.Sf5 Bf8 4.Ke6 Kg6 5.e5 Kg5 6.Sh4 Kxh4 7.Kf6 wins. vii) But not h4 8.Sf4+ Kf6 9.e5+, or Bd6 8.e5.
"This study resembles a practical endgame. The mutual zugzwang in the knight-bishop ending is not so suprising as in the rook-bishop ending of the 3rd prize winner".

No 11824 Marco Campioli 1st comm Koranyi MT

b6f6 0410.22
5/4 Draw
No 11824 Marco Campioli (Italy) 1.Bd8+ Ke6 2.Kc6 Rd5 3.Re7+ Kf5 4.Rxf7+ Ke4 5.Re7+ Kf3 6.Rf7+ Kg2 7.Rg7+ Kxh3 8.Rg1 Rxd8 9.Rd1 Kg4 10.h6 Kf3 11.Kc7 Rd4 12.h7 draw.
"Saving the game against a passed pawn by precise play".

No 11825 Jürgen Fleck 2nd comm Koranyi MT

blf4 0350.11 4/4 Draw
No 11825 Jürgen Fleck (Germany) 1.Kc2 Rc3+/i 2.Kd1 Bg3 3.Bxb5 Rc5 4.Bfl/ii Rd5+ 5.Ke2 Ke4/iii 6.Bh4/iv Bxh4 7.g3 Bxg3 8.Bg2+ draws.
i) $\mathrm{Rb} 42 . \mathrm{Be} 7 \mathrm{Rc} 4+3 . \mathrm{Kb} 3 \mathrm{Rc} 3+$ 4.Ka2 (Kb2?; Rc6) draws.
ii) 4.Bd3? $\mathrm{Rd} 55 . \mathrm{Bc} 7+\mathrm{Kg} 4$ and Black wins.
iii) Rxd8 stalemate; Kg 4 6.Bb6 Rf5/iv 7.Be3 Kh5 8.Bd4 Kg6 9.Be3 Kf7 10.Bd4 Ke6 11.Be3 Kd5 12.Ba7 Ke4 13.Be3 Rf7/v 14.Bb6 Rf8 15.Bc5 Rf6 16.Be3 Rf5 17.Bd2 Rf2+ 18.Ke1 draws.
iv) $6 . \mathrm{Bb} 6$ ? Rb 5 7.Be3 $\mathrm{Rb} 2+8 . \mathrm{Bd} 2$ Bf4 wins; 6.Be7? Rf5 7.Bd8 Rf2+ 8.Kel Ra2+ 9.Kd1 Ral+ 10.Ke2 Rel+ wins.
iv) Rb5 7.Be3 Rbl 8.Bd2.
v) Ra5 14.Bd2 Ra1 15.Bc3.
"The author developed a study by Sarychev (1.p New Statesman
1961)".

HvdH: bld4 0350.11 4/4 Draw, solution: 1.Bd8 Kc4 $2 . \mathrm{Kxb} 2 \mathrm{Ba} 3+$ 3.Kb1 Re1+ 4.Kc2 Re2+5.Kd1 Re3 6.Bf5 Re5 7.Bbl Rd5+ 8.Kc2 Rxd8 stalemate.

No 11826 Z. Maricsics 3rd comm Koranyi MT

h8d7 $0400.33 \quad 5 / 5 \mathrm{Win}$
No 11826 Z. Maricsics (Hungary) 1.Rxe4/i Rhl+ (Ke8; d7) 2.Kg7 Rg1+ 3.Kf6 Rf1+/ii 4.Ke5/iv c2 5.Ra4 (Kd4?; Rdl+) Rf5+/v 6.Kxf5 clQ 7.Ra7+ Kxd6 8.e8S+/vii Kd5 9.Rd7+ Kc6 10.Rc7+ wins.
i) $1 . \mathrm{Rg} 8$ ? $\mathrm{Rh} 1+2 . \mathrm{Kg} 7 \mathrm{Rg} 1+3 . \mathrm{Kf} 7$ Rxg8 4.Kxg8 Ke8 5.Kg7 c2 6.Kf6 clQ wins.
ii) Rg 8 4.Rxe3 $\mathrm{Rc} 85 . \mathrm{Kf} 7 \mathrm{c} 26 . \mathrm{Rc} 3$ Rxc3 7.e8Q+ Kxd6 8.Qe6+ Kc5 9.Qe5+ Kc4 10.Qe4+ Kb3 11.Qb4+ wins.
iv) $4 . \mathrm{Kg} 5 \mathrm{Rg} 1+5 . \mathrm{Kf} 4 \mathrm{Rg} 8$ 6.Kxe3 Rc8 7.e8Q+ Rxe8 8.Rxe8 Kxe8 9.Kd3 Kd7 10.Kxc3 Kxd6 draws. v) c1Q? 6.Ra7+ Kc6 7.e8Q+ wins. vii) 8.e8Q? Qc5+.

## WCCC St Petersburg 1998 -

 Фестивальный- 'Festival'The award was published on p 51 of the full report (Moscow 1999) on St Petersburg congress 1998. Only one study was published. The judge was O.Pervakov. The set theme: successive threefold sacrifice of pawn(s) of either colour

No 11827 David Gurgenidze prize WCCC St Petersburg 1998 'festival'


Schach in Schleswig-Holstein 1998
This informal tourney of the German magazine Schach in SchleswigHolstein had two sections: orthodox chess problems (\#2, \#3, \#n) and helpmates, selfmates, studies and others.
International FIDE judge for chess composition, Manfred Zucker, judged both sections. Only one study made it to the award (published in SSH iv/1999).

No 11828 Peter Schmidt
3rd HM Schach in Schleswig-Holstein 1998

f2b6 0044.02 3/5 Draw
No 11828 Peter Schmidt (Germany) 1.Ke2 d3+ 2.Kd1 Sc4 3.Bd4+ Kc6 4.Sf2/i Kd5 5.Sxd3 Kxd4 6.Sxc1 Ke3 7.Sd3 Kxd3 stalemate.
i) $4 . \mathrm{Sg} 3 ? \mathrm{Kd} 55 . \mathrm{Sf} 5 \mathrm{Ke} 46 . \mathrm{Se} 3 \mathrm{Sa} 3$ wins.
"The best study entry should also be honoured, especially since this nice and not too difficult piece might have sufficient originality. The 7th and last move of the solution are delicately motivated".
$\qquad$
ARTICLES
editor: John Roycroft

Zugzwang-based studies in the GBR 0001.nn range
by David Blundell

## INTRODUCTION

There are many different combinations of chess force each of which contains its own peculiarities. the composers task is to discover such peculiarities and present them in the form of artistic studies. This work is the product of my investigations into the GBR class $1 . \ln (3 . n 1)$ in particular positions in which the superior side's pawn is not passed.
Unlike the rook or bishop the knight is unable to mark time in a blocked position. A will be seen this peculiarity makes zugzwang a common occurrence in single knight endings.
The well known example below vividly demonstrates this.

a6c8 $1.10 \mathrm{~h} 5 . \mathrm{a} 7$
3/1
White to move can never force the bK away from c7/c8 and so the position is drawn. Black to move however, loses as the knight can cover the square not occupied by king the by driving it from its blockading position.
All the studies that follow contain at least one zugzwang. As the same zugzwangs often occur in different lines of a study or in different studies the zugzwangs are displayed at the end of the paper. Each zugzwang is given a number beginning with a Z. Each time one of these zugzwangs is reached in a line of a study the appropriate $Z$ number is quoted.
Note on zugzwang-The definition of zugzwang used in this paper is a position in which either player finds the move disagreeable. i.e. WTM draws/BTM loses, WTM loses/BTM draws and WTM loses/BTM loses. The studies in the first section demonstrate each of
these in turn.

## MAIN LINE ZUGZWANGS

All the studies in this -section contain one central zugzwang demonstrated in the main line. B1 is a basic example, the central zugzwang being $\mathbf{Z 1}$.



WIN
(3+3)
1.Kg3/i Kf5 2.Sf7 e5 3.Kf3 e4+/ii
4.Ke3 Z1
i) White prevents 1 .... Kf4 and loses a move so as to arrive at Z 1 with BTM. 1.Sf7+? Kf4=. 1.Kf3? Kf5 2.Sf7 e5 3.Ke3 e4 Z1.
ii) 3 .... Ke6 4.Sh6 wins.

In B2 the WS must manoeuvre to b3 to arrest the black a-pawn. The central dictates the path that the knight must take.

B2 L. and I. Melnichenko Correction by D .Blundell Original


DRAW
$(3+4)$
1.Sb7/i Kbl/ii 2.Sxc5/iii a2 3.Sb3

Kb2 4.Kb4 c5+ 5.Kc4 Z2
i) 1.Sxc6? Kbl 2.Sa5 a2 3.Sb3 Kb2

Z2. Or 1.Se6? Kb2 2.Sxc5 a2 3.Sb3 c5 Z2.
The move played retains the option of reaching b3 with or without capturing at c 5 until bK has committed itself.
ii) And 1... Kb2 (1 .... Kal 2.Sxc5=) 2. Sa5 a2 3.Sb3 Z2.

With 1... Kb1 Black tries to lose a move so ....
iii) .... White gives one back! The zugzwang at the centre of $\mathbf{B 3}$ is unusual, possibly unique with this material. Whoever has the move in Z3 loses.

B3 D.Blundell
first publication


WIN

$$
(3+3)
$$

1.Sc2/i Ke2 2.Se3 Z3
i)But not 1.Sc4?? Kel 2.Se3 Ke2 Z3 and Black wins.

## RELATED ZUGZWANGS

It often occurs that one zugzwang leads to other related zugzwangs. In such a position with the superior side to move we have a positional draw by repetition of moves. A simple example of related zugzwangs is the opposition in king and pawn endings.
B4 shows subtle play leading to a set of related zugzwangs.

B4 L.Prokeš Le Monde des Echecs. 1946


WIN
(3+2)
1.e4 Kf2 2.Sd5/i Kf3 3.Sc3 Ke3 4.Ka2/ii Kd3/iii 5.Kb3 Z4
i) The wS must deprive bK access to e3 whilst manoeuvring to c3. hence 2.Sb5 fails. 2 ... Ke3 3.Sc3 Kd3 4.Kb2 Kd2 (Averbakh gives this move an exclamation mark, however 4 .... Kd4 also draws) 5.Kb3 Kd3 Z4.
ii) 4.Kb2? Kd2(d4) 5.Kb3 Kd3 Z4

Or 4.Kb1? Kd3 5.Kb2 Kd2 etc.
iii) 4 ... Kd4 5.Kb2 Kc4 6.Kc2 Kd4
7.Kd2 e5 (7 ... Kc4 8.Se2) 8.Kc2

Ke3 9.Kb3 Kd3 10.Kb4 Kd4
$11 . \mathrm{Kb} 5$ wins.
B5 was, rather surprisingly. honoured in a recent tourney.

B5 E. Pogosyants
5th Commendation "October-70" (Tbilisi). 1987


WIN?
The main line given by the composer was anticipated by the Prokeš study. 1.Se6 Kd7 2.Sd4 Kd6 3.Kb2 Kc5 4.Kc3 b6 5.Kd3 Kb4 6.Ke4 Kc4 7.Ke5 Kc5 8.Ke6 Kxd4 9.Kd6 Furthermore the composer overlooks the fact that Black can set up a zugzwang After 3.Kb2 Black triangulates the king with 3 ... Kd5 4.Kc3 Kc5 reaching the same zugzwang as Z4.5 (although in a different place). If now $5 . \mathrm{Kd} 3$ then 5 ... Kd5 allows $6 . \mathrm{Sb} 3$ winning but 5..... Kb4 maintains the zugzwang. The study can be corrected by placing the wK at b 1 with $3 . \mathrm{Kc} 2$ the solution and $3 . \mathrm{Kb} 2$ a try.

B6 is a version of the Prokeš study with play based on the zugzwangs not relevant to the original study.


WIN
(3+2)
1.Sc3/i Kc5/ii 2.Kbl Kd4 3.Kb2 Kd3
4.Kb3 Z4
i) The knight must vacate b1 and 1.Sd2 is met by $1 . . . \mathrm{Ke} 52 . \mathrm{Kb} 2(\mathrm{~b} 1)$ Kd4 3.Kc2 e5 Z5.
King moves lead to zugzwang.
1.Kb2? Ke5 (Not 1 Kc 5 2.Kc3 wins)
2.Sc3 Kd4 3.Kb3 Kd3 Z4=. 1.Ka2?

Kc5 (Not 1.... Ke5 2.Sc3 Kd4 3.Kb2
Kd3 4.Kb3 Z4) 2.Kb2 Kc4 3.Kc2
Kd4 4.Sc3 Ke3 Z4.4=.
(ii)If 1 ... Ke5 2.Kb1(a2) Kd4 3.Kb2 Z4.2=
The position reached is the same as after move three of the Prokeš study but with bK at c5 not e3.

In B7 we see a more sophisticated form or the idea seen in the example in the introduction.

B7 L.Katsnelson and A.Koranyi 2nd Prize Szen Memorial TY, 1982


WIN
The duties of each piece are as follows;
1.wK must tie bK down to the defence of the g-pawn. i.e. must play to g 3 .
2.bK must defend the R pawn and be ready to meet a possible Sxd6 with Ke5.
3.wS must manoeuvre to e7 from where it defends the d-pawn. covers the square fS and can sacrifice itself for the g-pawn leading to a won pawn ending. Note that the square e3 fulfils the first two of these criteria but not the third.
It follows that bK will be confined to the squares f 5 and $\mathrm{g} 5 / \mathrm{e} 5$ and wK movebound at g3. Further, if bK is at f 5 when wS reaches its destination(e7) then the reply Kg 5 leaves White in zugzwang. Hence we have a complex of related zugzwangs.
1.Sf2/i Kg5 2.Kg3/ii Kf5 3.Sd3/iii Ke4 4.Sf4 Kf5 5.Se6 Ke5 6.Sc7 Kf5 7.Sa8/iv Kg5(e5) 8.Sb6 Kf5 9.Sc8

Ke5 10.Se7 Kf6 11.Kxg4 Kxe7 $12 . \mathrm{Kg} 5$ etc. i)After the try $1 . S g 3$ ? wS blocks the square g 3 and gives bK time to perform a triangulation. 1 $\qquad$ 2.Se2 Kf6 3.Kg3 Kf5,Setting up the zugzwang. The position after each subsequent black move is zugzwang. 4.Sf4 Kg5 5.Se6+ Kf5 6.Sc7 Kg5 7.Sa8 Kf5 8.Sb6 Kg5 9.Sc8 Kf5 10.Se7+ Kg5=.
ii) $w K$ must tie bK to the defence of the g-pawn immediately for if $2 . S d 3$ then 2 ... Kf6 draws as note (i).
iii)Now the zugzwangs occur after white moves (except when bK is at e5).
iv)7.Sa6 Ke5 8.Sb4? Kd4 draws. The knight must protect the pawn from the front and hence must manoeuvre via a8-b6 and c8,.

## HIDDEN ZUGZWANGS

Some zugzwangs never appear in the main line of a study but merely serve to direct the flow of the solution. These "hidden zugzwangs" are seen only in try play and sidelines. An example was seen in $\mathbf{B 6}$ where White must play 1.Sc3 as the try 1.Sd2 leads to ZS. I composed B8 to demonstrate that the recurrent positional draw first seen in Z 5 is not necessarily drawn if the defending side has an extra pawn in front of the knight.


DRAW
$(3+3)$
1.b4/i Sc7/ii 2.b5/iii Sxb5 3.Kb3

Kc7 4.Kb4(c4/a4) Kb6 5.Kc4 Ka5 6.Kb3 Z5(analogous position)
i) The hidden zugzwang Z 6 is seen after the white try $1 . \mathrm{Ka} 3 \mathrm{~Kb} 6 / \mathrm{iv}$ 2.b4 Sc7 3.Ka4 (3.b5 Kxb5) Sb5 4.Kb3 Kb7(c7)(4 ... Kc6 5.Kc4 Z6) 5.Kc4/v Kc6 Z6.
ii)1 ... Sxb4 2.Kb3 Sd5 3.Kc4 Kc6
4.Kd4 Kd6 5.Kc4 Ke5 6.Kd3=.

A reflection of the main line.
iii) White must get rid of the b-pawn.
2. Kb 3 Sb 5 is as (i).
iv)But not 1 .... Kc6 2.b4 Sc7 3.Kb3

Sb5 4.Kc4 Z6.
v) Or 5.Ka4 Kc6 6.Ka5 when Sd4 or Sd6 win. e.g. 6 .... Sd4 7.Ka4 Kd5
8.b5 Kc4 9.b6 Se6 10.Ka3 Sc5
11.Ka2 Kb4

## MULTIPLE ZUGZWANGS

The following studies all contain more than one zugzwang or sets or related zugzwangs.
B6 is an example of a multiple
zugzwang study. In it we see the related zugzwang complex Z4 in the main line and the hidden zugzwang Z5.
Play in $\mathbf{B 9}$ is directed by the hidden zugzwangs Z 7 to Z 13 and their related zugzwangs.

B9 D.Blundell
4th Hon. Mention Bent Jubilee of EG 1990


WIN
$(3+3)$
The duties of the white pieces for the first phase of the ending are as follows:
The knight must manoeuvre to e3 so as to arrest the g-pawn and deny bK access to a 4 .
The king must manoeuvre to e6 to attack and eventually capture the f6 pawn: en route it must be prepared to stop bK from entering f 4 .
The paths that the pieces take are dictated by the hidden zugzwangs. If the king steps into e4 at any time the reply Kg 5 is $\mathrm{Z7}$ and as he must be prepared to stop bK from reaching f 4 he must play via $\mathrm{d} 3, \mathrm{~d} 4$ and d5. If the knight manoeuvres
via d 5 we reach Z 9 where the knight is immobile and blocks the path of the king. It must, therefore, play via b6 and c4.
1.Sb6/i g4 2.Sc4/ii Kh6 3.Kd3

Kh5/iii 4.Kd4/iv Kh4 5.Kd5 Kh5
6.Se3/v g3 7.Ke6 Kg5

White has reached his objective. In the next phase he must force the g-pawn to g2 so as to achieve a zugzwang.
8.Sg2 Kg4 9.Se1/vi Kg5 10.Sf3+ Kf4(g4) 11.Sgl Kg5 12.Se2 g2 13.Sg1

Zugzwang. The final phase shows White controlling the g-pawn.
13.....Kg4(f4) 14.Kxf6 Kg3
15.Ke5 (g5) Kf2 16.Sh3+Kg3
17.Sf4 wins./vii
i) The attempt to win by playing the knight to e6 to look after the pawn and using the king to control the gpawn fails, 1.Sc7? g4 2.Kd3 Kh6 3.Se6 Kh5 4.Ke4 Kh4/viii With, 5.Sg7 Kg5 6.Ke3 g3 7.Kf3 Kh4 Z10. Or 5.Kf4 g3 6.Sd4 g2 7.Se2 (7.Sf3+,Kh3 ZI3.3),Kh3 Z13. Or 5.Sf4 g3 Z8.2.
ii)2.Sd5? Kh6 3.Kd3 Kh5 4.Kd4 Kh4 Z9.
iii) 3 .... Kg5 4.Ke4 Z7.
(iv)4.Ke4 Kg5 Z7. Whilst 4.Ke3 occupies the square reserved for the knight and hence $4 \ldots . \mathrm{g} 3$ draws e.g. 5.Kf3 Kg5 6.Sd6 g2 7.Kxg2 Kf4 etc.
v)Only now that the king has access to e 6 is this move possible. White can invert this and his next move i.e. 6. Ke6 g3 7.Se3 Kg5.
vi) it's too soon to capture the f pawn, 9.Kxf6 Kf3 10.Sh4+ Kg4
11.Sg2 Kf3 12.Sel+ Ke2(f2)=. vii)17 ... g1(Q) 18.Se2+ whilst 17....g1(S) is a book, win e.g.18.f6 Sf3+ 19.Kf5 Sh4+ 20.Ke4 Sf3 21.Se6 Sh4 22.f7 Sg6 23.Kf5 Se7+ $24 . \mathrm{Kg} 5$.
viii)Black must not advance the g- pawn prematurely. 4 ... g3 5.Kf3 Kh4 6.Sg7 Z10. After 4 ... Kh4 Black threatens $5 \ldots \mathrm{~g} 3$.

B10 is a version of B9 with the king manoeuvre, reversed. The hidden zugzwangs are Z7.Z8.Z14 and Z15.

B10 $\underset{\text { Original }}{\substack{\text { D.Blundell } \\ \text { Ond }}}$


## WIN

(3+3)
The plan seen in $\mathbf{B 9}$ of playing wK to e6 is not possible here; White must therefore force the advance of the f-pawn so as to permit Ke6.
As in B9 wS must reach e3 to halt the g-pawn but here the role of wK is different. If he plays to e5 then the reply Kg 5 is zugzwang, he must, therefore. play via d6 and dS to e4 forcing Kg 5 when Ke 5 is zugzwang with BTM.

Again the path taken by wS is critical as Sd 5 blocks the king. 1.Sb6/i) g4/ii 2.Sc4/iii Kh6 3.Kd6/iv Kh5 4.Kd5
With 4..... f6 S9 after move 5. Or 4..... Kh4(h6) 5.Ke4(v) Kg5 6.Ke5 Z14
i)l.Sc7? g4 2.Sd5 Kh6 3.Kd6 Kh5
4.Ke7(4.Se3 Kg5 5.Ke5 g3 Z15)

Kg5 5.f6 g3 6.Se3 Kf4=
ii)If 1 .... Kh6 then $2 . \mathrm{Sc} 4$ or $2 . \mathrm{Kd} 6$ transpose.
iii)The pawn must be halted at g 3 . 2.Sa4? g3 3.Sc3 g2 4.Se2 Kh6 5.Ke7 Kg5 6.f6 Kg4 7.Kxf7 Kf3 etc. $=$
iv)3.Ke7? g3 4.Se3 Kg5 5.f6 Kf4

$$
\text { etc. }=
$$

v)White can transpose moves with

Se3 now that $w K$, is ready to play to e4.
In B9. Z9 and Z9.I Where avoided by an accurate wS manoeuvre i.e. Black's play was irrelevant. In B11 wS must play to the blocking square and both sides must play to avoid the zugzwangs.
Note - The zugzwangs in this (and the next) study are the same as those seen in $\mathbf{B 9}$ but at different locations. The B9 zugzwangs are referred to here to avoid repetition.

B11 D. Blundell
British Chess Magazine, 1992


WIN
$(3+3)$
1.Sc6/i e4 2.d4 e3/ii 3.Sb4 Kg5
4.Ka2/iii Kg4/iv 5.Ka3 Kf4/v
6.Kb2 Kf3 7.Kb3 e2 8.Sc2 Kf4
9.Kb4 Kf3 10.Kc5 Ke4 11Sel and 12.Kxd5 wins.
i) The knight must force the e-pawn to advance whilst manoeuvring to c 2 , hence $1 . S \mathrm{Sa}$ fails. 1.Sa6? Kg5 2.Sb4/vi d4 3.Sa6/vii e4 4.dxe4 Kf4 5.Sc5 Ke5 6.Kb2 d3 7. Kc3 d2 8.Kxd2 Kd4=.

Or 1.Sd7? e4 2.d4 e3 3.Se5(c5) Kg5 4.Kb2 e2 5.Sd3 Kf5 6.Kc3 Ke4 Z8.2.
ii) $2 \ldots \mathrm{Kg} 53 . \mathrm{Sb} 4 \mathrm{e} 3$ transposes.
iii)4.Kb2? Kf4 Z9.1. Or 4.Kbl? Kf5
5.Kc2 e2 6.Kd2 Ke4 7.Sc6 Kf3 8.Kel Ke3=.
iv) 4 .... Kf4 5.Kb2 Z9.1. Or 4 .... Kf5 5.Kb3 Z9.
v) If Black continues with the same idea (i.e. plays ...Kg3) White can play Sc2 as the king can now reach c5.
... Kg3 6.Sc2 Kf3(f4) 7.Kb4 Ke4 8.Kc5 wins.
vi)2.Ka2 Kf4 3.Kb2 Ke3 4.Kc3 d4+ and 5 ... e4 draws. Or 2.Kb2 e4 3.d4 e3 4.Kc3 Kf4 5.Sc5 (5.Sb4(Kd3) e2=) e2 6.Kd2 Kf3 7.Sd3 (7.Kel Ke3=) Ke4 8.Kc3 Kf3 Z8.2. vii)3.Sd5 Kf5 and e4 cannot be stopped.
In B12 an accurate knight manoeuvre, is required to avoid the zugzwangs seen in B11.

B12 D.Blundell $1^{\text {st }}$ pr. Diagrammes, 1994


WIN
$(3+3)$
1.Sa1/i f3/ii 2.Sb3 Kg4 3.Kc2 Kg3 4.Kc3 Kg4 5.Kc4 Kg3 6.Kd5 Kf4 7.Sd2 f2 8. Sf1 wins.
i) The wS must reach d 2 and if 1.Sa3? f3 $2 . \mathrm{Sc} 4 \mathrm{Kg} 5 / \mathrm{iii} 3$. Kc 2 Kg 4 is Z9.1. Other white moves fail, 1.Sel? Kg 4 2.Kc2 f3 3.Sd3 f2 4.Sxf2+ Kf3=. Or 1.Kcl? f3 2.Kd2 f2 3.Ke2 Kg4 4.Se3 Kf4 5.Kd3 Kg3 Z8.2. Or 1.Kb2 Kg4 2.Kc3 f3 3.Kc4 f2 4.Se3+ Kf4 5.Kd3 Kg3 Z8.2. ii)i .... $\mathrm{Kg} 4(\mathrm{~g} 5)$ is met by $2 . \mathrm{Kc} 2$ transposing. iii)But not 2 .... Kg4? 3.Kc2 Z9.1. Or $2 \ldots . \mathrm{Kh} 4$ ? 3.Kb2 is a position
reached in B11.
Z1 e3f5 0001.12 f7.g5e4e6 3/3
WTM: 1.K moves Kf4=
BTM: 1....Ke6 2.Kxe4/i Kxf7
3.Kd5 Ke7 4.Ke5 Kf7 5.Kd6 Kf8
6.Ke6 Kg7 7.Ke7 Kg8 8.Kf6 Kh7
9.Kf7 Kh8 10.Kxg6 Kg8 11.Kh6
i) 5.546 ? Ke5 6.Sf7+ Kf5 Z1 but now it is WTM.

Z2 c4b2 0001.13(2) b3.c3a2c5(c6)
Note A zugzwang with or without the bP at c6.
WTM: 1.K moves Kxb3
BTM: 1 .... Kc2 2.Sa1+ Kb1 3.Kd3
c4+ 4.Kd2 Kb2 5.Kd1/i Kxc3
$6 . \mathrm{Kcl}=$
i)But not $5 . \mathrm{Sc} 2$ when 5 .... al(Q)
wins.
Z3 f4e2 0001.12 e3.g3f2f5
WTM: $1 . \mathrm{g} 4 \mathrm{fxg} 4$ 2.Ke4 g3 3.Sf5 g2 wins.
BTM: 1..... Kd2 2.Sf1+/i Ke2 3.Sh2 wins.
i) $2 . \mathrm{Kf} 3$ also wins.

Z4 b3d3 0001.11 c3.e4e6
BTM: 1.... Kd4 2.Kb4 Kd3 3.Kc5
Kxc3 4.Kd6 Kd4 5.e5 wins.
Related zugzwangs
Z4.1 b2d2 0001.11 c3.e4e6
Z4.2 b2d4 $0001.11 \mathrm{c} 3 . \mathrm{e} 4 \mathrm{e} 6$
Z4.3 b4d4 0001.11 c3.e4e6
Z4.4 c2e3 0001.11 c3.e4e6
Z4.5 d2d4 $0001.11 \mathrm{c} 3 . \mathrm{e} 4 \mathrm{e} 6$
Z5 c2d4 0001.11 d2.e4e5
WTM: 1.Kdl Kd3(e3) 2.Kel Ke3 = BTM: 1....Ke3 2.Kc3

Z6 c4c6 0003.21 b5.b4c2c3
WTM: 1.Kb3 Kd5 2.Ka4 Kc4 BTM:
1..... Kb6 2.Kd5/i Sa3 3.Ke4 Sb1
4.Kc4 Kc6 5.b5+ Kb6 6.Kb4=
i)2.Kb3? Kb7 3.Kc4 Kc6 Z6 but now it is WTM.

Z7 e4g5 0001.12 c4(d5).f5f6g4
WTM: $1 . \mathrm{Se} 3 \mathrm{~g} 3 \mathrm{Z} 8$
BTM: $1 \ldots \mathrm{~g} 3 / \mathrm{i} 2 . \mathrm{Se} 3 \mathrm{Z} 8$
i) $1 . . . \mathrm{Kh} 42 . \mathrm{Kf} 4 \mathrm{~g} 33 . \mathrm{Se} 3 \mathrm{Kh} 34 . \mathrm{Kf} 3$

Kh4 5:Kg2 wins. Or
1... Kh5 2.Kf4 Kh4 3.Se3 g3 4.Kf3

Kh3 5.Sg2 Kh2 6.Sf4.
Z8 e4g5 0001.12 e3.f5f6g3
WTM: 1.Kf3/i g2 2.Kxg2 Kf4
3.Kf2 Ke4 4.Ke2 Kf4 5.Kd3 Ke5 Z5

BTM: 1..... Kh4 2.Kf3/ii Kh3
3.Sg2 Kh2 4.Sf4 wins.
i)This position is an example of a related zugzwang complex of the type seen in the introduction and S7.
The related zugzwangs are;
Z8.1 e4g4 0001.12 g2.f5f6g3
Z8.2 e4h4(g5) 0001.12 f4.f5f6g3
Z8.3 e4g5 0001.12 el.f5f6g3
ii)2.Kf4 also wins.

Z9 d4h4(h6) 0001.12 d5.f5f6g4
BTM: 1..... Kh5/i 2.Sxf6+ Kg5
3.Ke5 g3 4.Se4+ wins.

WTM: 1.Sxf6/ii g3 2.Ke3 Kg5= i) 1 .... g3 2.Se3 transposes to the main line.
ii) The knight blocks the king's passage to e6 and is unable to move for if $1 . \mathrm{Se} 3 \mathrm{Kg} 52 . \mathrm{Ke} 4 \mathrm{~g} 3$ is Z 8 . Other moves lead to zugzwangs e. g. 1.Ke4 Kg5 2.Se7 g3 3.Kf3 Kh4 Z11. And 1.Kd3. Kh5 is a related
zugzwang Z9.1.
Related Zugzwang
Z9.1 d3h5 0001.12 d5.f5f6g4
Z10 f3h4 0001.12 g7.f5f6g3
BTM: 1....Kh3 2.Sh5 g2 3.Sf4+ wins.
WTM: 1.Se6 Kh3 Z12/i
i) The zugzwangs Z10 and Z12 are not related zugzwangs as here defined, since White cannot repeat Z10. i.e.2.Sg7? loses to 2 ...g2.

Z11 f3h4 0001.12 e7.f5f6g3
BTM: 1...Kh3 2.Sg6 g2 3.Sf4+ wins WTM 1.Sg6+/i Kg5/ii 2.Ke4 g2/iii $3 . \operatorname{sf4} \mathrm{gl}(\mathrm{S})=$.
i) $1 . \mathrm{Sd} 5 \mathrm{Kg} 5$ and $2 \ldots . \mathrm{g} 2=$.
ii) Or 1 Kh 3 ZI 2.1
iii)Or 2 Kg 4 3.Sf4 Kg5(h4) Z8.2

Z12 f3h3 1.12 e6.f5f6g3
BTM: 1...Kh4/i 2.Sg7 Z10
WTM: 1.Sd4/ii Kh4/iii 2.Kf4 Kh3
Z12.2
i)1 .... g2(Kh2) 2.Sf4(+) wins.
ii)l.Sf4+ Kh4 2.Sg6 Kh3 Z12.1
iii)Or 1 .... g2 2.Se2 Kh4 3.Kf4 Kh3 Z13
Related Zugzwangs
Z12.1 f3h3 0001.12 g6.f5f6g3
BTM 1 .... g2(Kh2) 2.Sf4(+) wins.
WTM 1.Sf4+ Kh4 2.Sg2+ Kg5
3.Ke4 Kg4 Z8.1

Z12.2 f4h3 0001.12 d4.f5f6g3
BTM 1 .... Kh2/iv 2.Se2 g2 3.Kg4 wins.
WTM 1.Se2 g2 Z13
iv) 1 .... g2 2.Se2 Z13. Or 1 .... Kh4
2.Se2 g2 3.Sgl Z13.1

Z13 f4h3 0001.12 e2.f5f6g2
BTM: 1...Kh4 2.Sg1 Z13.1
WTM: 1.Kf3 Kh4 2.Kxg2 Kg4(g5)
3.Sd4(g3) Kf4 =

Related Zugzwangs
Z13.1 f4h4 0001.12 gl.f5f6g2
BTM 1... Kh5 2.Sf3 Z13.2
WTM 1.Kf3 Kg5 2.Ke4 Kg4 3.Sf3 $\mathrm{Kg} 3=$
Z13.2 f4h5 0001.12 f3.f5f6g2
BTM 1 ... Kh6 2. Kg 4 Kg 7
3. $\mathrm{Kg} 3(\mathrm{~h} 3)$ wins.

WTM $1 . \mathrm{Kg} 3 \mathrm{gl}(\mathrm{Q})+2 . \mathrm{Sxgl} \mathrm{Kg} 5=$. Z13.3 f4h3 1.12 f3.f5f6g2

Z14 e5g5 0001.12 c4.f5f7g4
BTM: 1...... g3/i 2.Se3 Z15
WTM: 1.Se3 g3 Z15
i) $1 \ldots \mathrm{f} 6+2 . \mathrm{Ke} 4, \mathrm{~g} 33 . \mathrm{Se} 3 \mathrm{Z} 8$.

Z15 e5g5 0001.12 e3.f5f7g3
BTM: 1......f6+ 2.Ke4 Z8
WTM: 1.f6/i Kh5 2.Kf5 Kh4 3.Kf4
Kh5 4.Kxg3 Kg6(g5) 5.Sg4(d5) Kf5
i) $1 . \mathrm{Sg} 2 \mathrm{Kg} 4$ 2. Sel Kg 5 3.Sf3 +Kg 4
4.Sgl Kg5 5.Se2 Kg4 6.Kf6 g2=.

COMPUTER
SECTION
editor: John Roycroft

## GBR class 0116 * ${ }^{*}$ - rook and bishop against two knights

1. discussion

The common opinion of aficionados who have looked at samples of the optimal play is that this 6-man pawnless endgame is a general win. Do the * ${ }^{*}$ *acts confirm this informal consensus? Here we
examine a family of positional draws and tweak them in favour of one side and then the other - with White the RB side - to identify some principles of evaluation. We shall then summarise.
In this family of draws wK is confined to a corner and adjacent square by a barrier of selfsupporting bSS, with bK in close attendance - and $w R$ and $w B$ 'anywhere'. [ $\left.{ }^{*} \mathrm{C}^{*} R 1\right]$

* $\mathrm{C}^{*}$ R1: $\quad$ target bS is on e 7

h7f6 0116 f8b2e7f5 3/3. BTM
bKg 5 ; loses, bKe6; draws. The latter maintains support of the target. (The position is unreachable, but computers accept it.)

h7e5 0116 a6a2e7f5 3/3. BTM Either Ke4; or Kf4; draws, but Kd4? loses to Re6.
In this loose configuration family there will be a target bS on the same colour (light or dark) as wB. bSS are fixed in the sense that, exceptions permitting, moving either of them will allow wK to emerge, with an inexorable win. Any win in the given configuration family will depend on White manoeuvring to achieve an advantageous BxS. With bK actually defending bSS there is no manoeuvre (we aver, and exploration of the * ${ }^{*}$ odb confirms this) to force this, though there are traps ( $R 8$ and $R 9$ ). However, with bK detached from the target bS, there may be such a manoeuvre: wR can bar an orthogonal and wB cover a diagonal, putting bK into reverse, as it were. With bSS immovable (on penalty of releasing wK ) White's aim is further to detach bK from his charges until (typically) BxS is a threat. Such considerations suggest
borderline positions, which use of the odb makes it easy to identify and test. [ $\left.{ }^{*} C^{*} R 3, R 4, R 5\right]$
* $\mathbf{C}^{*}$ R3: $\quad$ target bS is on e 7

h7d5 0116 e5b8e7f5 3/3. BTM
Kc6; or Kd4; draw, but Kc4? Ba7 wins. [Try: Kd4;Rb5,??]
Unexpected, here: Kd 4 ; and $\mathrm{Rb} 5, \mathrm{Kc} 4$ !, or Ra5,Sc6! unique moves to draw in each case.
*C*R4: target bS is on e7

h7c6 0116 d8a3e7f5 3/3. WTM draw.
* ${ }^{*}$ R 5:
target bS is on f 5

h7d1 0116 d8a2e7f5 3/3. BTM
Ke2; draws, Kc2; loses.
We maintain that with wK free to roam no attempted (black) fortress position is tenable. The 203 recizugs (see below) are all of interest but all are tactically based exceptions: no example of a drawn position with open characteristics has, we believe, yet been identified, let alone a family of such. It seems reasonable to assume - and a search (admittedly unsystematic) of the odb has located no exception - that if wK is not permanently confined, his gradual mobilisation will be decisive.
Our conclusion: with wK absolutely confined by self-protecting bSS to a corner and adjacent edge-square, and bK able to protect the target bS (the one that can be threatened by the bishop), the endgame is drawn, though care is needed.
There is one note of caution. Subject to investigation of wK confinement to a single (ie, corner) square we
can say that barring short-term tactical exceptions, which include an exchange favouring the defender, perpetual checks and forcing repetitions, this endgame is otherwise a win.
As always in chess, knowing the true result is not the same as being able to achieve it in practice! Although the latter was never our prime purpose, which is the pursuit of chess truth, we do hope, over time, to examine - and, with odb aid, to expound - winning techniques and defensive resources. [See also EG8, EG102.1 and EG114]
A little of the variety of flavour this ending offers can be shown by a pair of examples taken from opposite ends of the reci-zug depth spectrum.
${ }^{*} C^{*} R 6$ :


WTM draws. BTM loses immediately d8e6 0116 f8h8e8f6 3/3.

* $\mathbf{C}^{*}$ R7:


WTM draws. BTM loses in 213 a8c6 0116 e7h8b5c5 3/3.

* ${ }^{*}$ R8: a trap:

a7c6 0116 g6e7c5d7 3/3. BTM
1...Kc7? 2.Rh6 Kc8(Se4;Ka6)
3.Rc6 mate.
1...Kb5 2.Rh6 Ka5? 3.Rc6 Ka4 4.Bd6 Kb5 5.Rc6 Kb4 6.Rc7 Kb5
7.Be7, and Kb4 8.Rxd7, or Kc4
8.Bxc5 Sxc5 9.Kb6.
1...Kd5! 2.Rd6+ Kc4 3.Rc6 Kd5 4.Rc7 Kd4!
*C* R9: another:

a7d8 0116 h6b4c5d73/3.
BTM is lost, because of the disruptive checks, zugzwangs, and pins available to the attacker.
1...Kc7 2.Ba5+.
1...Ke8! 2.Rd6 Kf7 3.Ba3 Ke8 4.Rc6.

2. the 203 positions of reciprocal zugzwang
To emphasise that this endgame has many intriguing tactical secrets to reveal we append the 203 zugzwangs.
*C* reciprocal zugzwangs in $G B R$ class 0116
Here we list - in two sequences - the complete set of 203 Ken Thompsongenerated reci-zugs in the 6-man pawnless endgame of rook and bishop against two knights. Depth is to conversion. A set of 276 supplied by Lewis Stiller in 1996 contained some rotated/reflected duplicates. The present list has been verified (pace AJR finger-trouble) as
including no equivalent positions.
EG's thanks to all.
Five observations: there is no recizug with wK on a central square; no black man starts on the al-h1 rank ( wK always normalised top left); about three-quarters of the positions are at more than half the maximum depth, a skew challenging satisfactory explanation; many of the (WTM) draws depend on hidden possibilities of bSS setting up a corner prison for wK , while BTM this grip is insignificantly but crucially loosened; in other WTM cases there is likely to be a latent domination-for-exchange sequence available for the cooperating bSS side:
d6d4 0116 e6c8f6d5
WTM: Re1,Se4+; Ke6,Sb6; Rd1+,Kc3(Ke3).
It is clear to us that to be able to play and win for White against optimal defence one needs to see and avoid the nebulous and nefarious tactical niceties of the knights. It is from the computer alone that we can hope to learn how to do this, and the lists we now have offer a hefty fund of relevant, indeed often thrilling, data.
[AJR]

| * ${ }^{*}$ | WTM draw White |  |
| :---: | :---: | :---: |
| wKbK | wRwBbSbS | BTM loss |
| win-depth |  |  |
| a8c6 0116.00 e7h8b5c5 3/3. $=/-213$ |  |  |
| b8d7 $0116.00 \mathrm{a} 8 \mathrm{a} 7 \mathrm{c} 5 \mathrm{~b} 33 / 3 .=/-211$ |  |  |
| b8d7 0116.00 b6e1a7d6 3/3. $=/-211$ |  |  |
| b8d7 0116.00 b6e1d6d4 3/3. $=/-211$ |  |  |
| a8c6 $0116.00 \mathrm{~h} 7 \mathrm{~h} 8 \mathrm{~d} 7 \mathrm{~b} 53 / 3 .=/-210$ |  |  |
| a8c7 0116.00 d2c1e7d5 3/3. $=/-210$ |  |  |
| a8d6 $0116.00 \mathrm{~b} 5 \mathrm{a} 7 \mathrm{c} 5 \mathrm{a} 43 / 3 .=/-210$ |  |  |

a8d7 0116.00 b6f8d6f5 3/3. $=/-210$
a8e6 0116.00 d8f8d6f5 3/3. $=/-210$
a8e8 0116.00 c 7 b 8 e 7 d 6 3/3. $=1-210$
c8d5 0116.00 b8b6c5b4 3/3. $=/-210$
b8c6 0116.00 f6c7d6f5 3/3. $=/-209$
a8d7 $0116.00 \mathrm{a} 5 f 8 f 5 \mathrm{~d} 43 / 3 .=1-208$
b8b6 0116.00 e8a2e7e5 3/3. $=1-208$
c8a6 0116.00 b8b6e6c5 3/3. $=/-208$
а8с7 0116.00 e8e6e7c6 3/3. $=/-207$
a8c8 $0116.00 \mathrm{a} 5 \mathrm{~b} 6 \mathrm{~b} 5 \mathrm{c} 33 / 3 .=/-207$
b8b6 0116.00 e8a2a5e7 3/3. $=/-207$
b 8 b 60116.00 e8a2d8e7 3/3. $=/-207$
b8d7 $0116.00 \mathrm{a} 8 \mathrm{a} 2 \mathrm{~b} 5 \mathrm{c} 53 / 3 .=/-207$
c7e6 0116.00 c5a3d6e5 3/3. $=/-207$
c7e6 0116.00 d 7 b 8 f 7 d 6 3/3. $=/-207$
$\mathrm{a} 8 \mathrm{c} 70116.00 \mathrm{a} 4 \mathrm{~g} 8 \mathrm{c} 6 \mathrm{~b} 43 / 3 .=1-206$
a8c7 0116.00 eld1c6d4 3/3. $=/-206$
a8c7 0116.00 e $4 a 4 c 6 d 43 / 3 .=1-206$
a8f7 0116.00 b8f8d6f5 3/3. $=1-206$
d8h6 $0116.00 \mathrm{~g} 8 \mathrm{~g} 6 \mathrm{~d} 6 \mathrm{f} 5 \mathrm{3} / 3 .=/-206$
$\mathrm{a} 8 \mathrm{c} 70116.00 \mathrm{~b} 3 \mathrm{~g} 7 \mathrm{~d} 7 \mathrm{e} 53 / 3 .=/-205$
a8c7 $0116.00 \mathrm{a} 644 \mathrm{e} 7 \mathrm{c} 63 / 3 .=/-204$
$\mathrm{a} 8 \mathrm{c} 70116.00 \mathrm{~b} 5 \mathrm{a} 6 \mathrm{~d} 8 \mathrm{~d} 3 \mathrm{3} / 3 .=/-204$
a8c7 0116.00 c1a4c6d4 3/3. $=/-204$
a8c7 $0116.00 \mathrm{~d} 2 \mathrm{~b} 5 \mathrm{c} 6 \mathrm{e} 3 / 3 / 3 .=/-204$
a8d5 0116.00 c8b7c6e5 3/3. $=/-204$
b7d7 $0116.00 \mathrm{a} 8 \mathrm{~d} 8 \mathrm{e} 7 \mathrm{~d} 53 / 3$. $=/-204$
b8c6 $0116.00 \mathrm{~d} 8 \mathrm{f8d} 8 \mathrm{c} 43 / 3 .=1-204$
b8c6 0116.00 e6f8d6f5 3/3. $=/-204$
b8d7 0116.00 a6c5d6b5 3/3. $=/-204$
c8a6 0116.00 b7e7e6c4 3/3. $=/-204$
a8c7 $0116.00 \mathrm{~b} 1 \mathrm{a} 7 \mathrm{c} 5 \mathrm{a} 43 / 3 .=/-203$
a8d6 0116.00 c2h7c6c5 3/3. $=/-203$
b8c6 $0116.00 \mathrm{a} 8 \mathrm{a} 7 \mathrm{f5} \mathrm{e} 3$ 3/3. $=/-203$
b7d6 0116.00 c7a2e7c6 3/3. $=/-203$
a8c6 0116.00 b8a4b5d4 3/3. $=/-202$
a8c6 0116.00 e7b8e8d6 3/3. $=/-202$
а8c7 0116.00 а6е8e7c6 3/3. $=/-202$
a8c7 0116.00 c5h3c6e3 3/3. $=/-202$
b8b6 0116.00 d5c4a7e4 3/3. $=/-202$
c8d5 $0116.00 \mathrm{a} 8 \mathrm{a} 7 \mathrm{c} 4 \mathrm{~d} 43 / 3 .=/-202$
c8f6 $0116.00 \mathrm{~b} 7 \mathrm{~h} 7 \mathrm{~g} 6 \mathrm{e} 53 / 3 .=/-202$
a8c7 0116.00 b8a6d8f3 3/3. $=1-201$
a8c7 $0116.00 \mathrm{~b} 8 \mathrm{~d} 5 \mathrm{~d} 6 \mathrm{~d} 43 / 3 .=/-201$
a8d7 0116.00 e6g8e5d3 3/3. $=/-201$
b8c6 $0116.00 \mathrm{a} 8 \mathrm{a} 7 \mathrm{f5h} 33 / 3 .=1-201$
c6e5 $0116.00 \mathrm{c} 4 \mathrm{a} 2 \mathrm{~d} 5 \mathrm{e} 43 / 3 .=/-201$
c8b3 0116.00 d4b1c5e4 3/3. $=/-201$
a8c7 0116.00 b5e6c6e5 3/3. $=/-200$
a8g7 $0116.00 \mathrm{~b} 8 \mathrm{~g} 8 \mathrm{e} 6 \mathrm{~d} 53 / 3 .=/-200$ b8d7 0116.00 f6c7f7e5 3/3: $=/-200$ c7b5 0116.00 a3b6d4b3 3/3. $=/-200$ c8d6 0116.00 c7b5c5f5 $3 / 3 .=/-200^{\circ}$ d6d4 0116.00 c6e8b6d5 3/3: $=/-200$ d 6 d 40116.00 e6c8f6d5 3/3. $=/-200$ d7c5 0116.00 e6c6d5e4 3/3. $=/-200$ a8c7 0116.00 d5d7e6d4 3/3. $=/-199$ a8d5 $0116.00 \mathrm{~g} 8 \mathrm{~b} 7 \mathrm{f7c} 63 / 3 .=/-199$ b8b6 0116.00 c4e4b5d4 3/3. $=/-199$ b8b6 0116.00 a7d7e8d6 3/3. $=/-199$ b8d7 0116.00 b6e1c7d6 3/3. $=/-199$ c6e5 0116.00 a4a8d5b3 3/3. $=/-199$ c6e5 0116.00 c4a6d5e4 3/3. $=/-199$ b8c6 0116.00 a8a7e3c2 3/3. $=/-198$ b8d6 0116.00 c7b5e7c5 3/3. $=/-198$ b8d7 0116.00 a6b4b5e4 $3 / 3 .=/-198$ c8f7 0116.00 e8a4f8e6 3/3. $=/-198$ d7f6 0116.00 e7c8e6g5 3/3. $=/-198$ d7f8 $0116.00 \mathrm{a} 7 \mathrm{a} 4 \mathrm{~d} 4 \mathrm{c} 33 / 3 .=/-198$ d8b2 0116.00 a8a2d5e3 3/3. $=/-198$ d8c6 0116.00 b8a6b5d4 3/3. $=/-198$ d8b2 0116.00 a6a2b6d5 3/3. $=/-197$ a8c7 0116.00 d6c5e7d5 3/3. $=1-196$ a8g7 0116.00 b8g8e6b5 3/3. $=/-196$ c8b2 0116.00 a7a $2 \mathrm{~d} 5 \mathrm{c} 43 / 3 .=1-196$ d8e6 0116.00 g8f8d6f5 3/3. $=/-196$ a8c7 0116.00 a5a4c8a6 3/3. $=/-195$ a8c7 0116.00 d6f8c6f4 3/3. $=/-195$ b8d8 0116.00 a7d7a4e7 3/3. $=/-195$ b8d8 0116.00 a7d7e4e7 3/3. $=/-195$ $\mathrm{d} 7 \mathrm{f6} 0116.00 \mathrm{~b} 8 \mathrm{~g} 8 \mathrm{f7g} 5 \mathrm{3} / 3 .=/-195$ d8b5 0116.00 a8a5d5c3 3/3. $=/-195$ c8f5 0116.00 e6c4c6b5 3/3. $=/-194$ d6e4 0116.00 f6d8e5f4 3/3. $=/-194$ a8c7 0116.00 f4h3c6e5 3/3. $=/-193$ c7b5 0116.00 a8b6c6c5 $3 / 3 .=/-193$ c7e8 0116.00 a8d8e7c4 3/3. $=1-192$ c8c6 $0116.00 \mathrm{~b} 8 \mathrm{~b} 4 \mathrm{~b} 7 \mathrm{a} 53 / 3 .=/-191$ b7d7 0116.00 c8c7c6d5 $3 / 3 .=/-190$ d6a4 $0116.00 \mathrm{c} 3 \mathrm{a} 3 \mathrm{f} 4 \mathrm{~d} 3 \mathrm{3} / 3 .=/-190$ d6e4 0116.00 f6h8e5f4 3/3. $=/-190$ d7g5 0116.00 b6e8b7d6 3/3. $=/-190$ c8b4 0116.00 a8a6f7b5 $3 / 3$. $=/-189$ d6c4 0116.00 b7c5d5d4 3/3. $=/-189$ d6c4 0116:00 d5a5d3g3 3/3. =/- 189 a8c6 0116.00 b7c8b8d7 3/3. $=/-187$ a8d6 $0116.00 \mathrm{a} 7 \mathrm{c} 8 \mathrm{~b} 8 \mathrm{~d} 7 \mathrm{3} / 3 .=/-186$ b7d8 0116.00 c7a8e7c6 3/3: $=/-186$
d6c4 0116.00 e5c5d4e3 3/3. $=/-186$ d7b4 0116.00 e5c8d6e4 3/3. $=/-186$ d7c5 $0116.00 \mathrm{~b} 8 \mathrm{c} 6 \mathrm{~d} 6 \mathrm{~d} 53 / 3 .=/-186$ $\mathrm{b} 8 \mathrm{~g} 70116.00 \mathrm{c} 8 \mathrm{~g} 8 \mathrm{c} 7 \mathrm{e} 63 / 3 .=/-185$ d8e6 $0116.00 \mathrm{f8h} 8 \mathrm{~g} 7 \mathrm{f5} 3 / 3 .=1-185$
b8b6 0116.00 c4d7b5d4 3/3. $=/-181$ c7c5 $0116.00 \mathrm{f6c} 6 \mathrm{~d} 6 \mathrm{c} 43 / 3 .=/-180$ c7b5 0116.00 c3b6d4b3 3/3. $=/-179$ d8c6 0116.00 b8a7b6d5 3/3. $=/-179$ a8c7 0116.00 d5b7e5d3 3/3. $=/-178$ b7d7 $0116.00 \mathrm{~b} 8 \mathrm{a} 8 \mathrm{~b} 5 \mathrm{c} 83 / 3 .=/-177$ b7d7 $0116.00 \mathrm{~b} 8 \mathrm{a} 8 \mathrm{c} 8 \mathrm{e} 83 / 3 .=/-177$ d7c5 0116.00 b8a6d6b5 3/3. $=/-177$ b8d7 0116.00 c8b7e8c7 3/3. $=/-176$ d7c5 $0116.00 \mathrm{~b} 7 \mathrm{a} 8 \mathrm{c} 6 \mathrm{~b} 53 / 3 .=/-176$ d6f7 0116.00 c8f8a4d4 3/3. $=/-174$ c6e7 0116.00 b8d7d6e6 3/3. =/- 172 c8h7 0116.00 d8h8d7f6 3/3. $=/-171$ b8c6 $0116.00 \mathrm{a} 6 \mathrm{a} 7 \mathrm{~b} 6 \mathrm{~d} 53 / 3 .=/-169$ d8e6 0116.00 f8h8f6h5 3/3. $=/-169$ d8g7 0116.00 f8a3a7f6 3/3. $=/-169$ c7f4 0116.00 e5c3c5b4 3/3. $=/-166$ b8f8 0116.00 d7f7e6f4 3/3. $=/-165$ d7f6 0116.00 e7c8g7e6 3/3. $=/-165$ d6c4 0116.00 b6a7c5b4 3/3. $=/-162$ c7e8 0116.00 d6d8e7f6 3/3. $=/-153$ b8a6 $0116.00 \mathrm{c} 7 \mathrm{a} 7 \mathrm{~b} 6 \mathrm{~b} 43 / 3 .=/-152$ b7d8 $0116.00 \mathrm{f7c8d7f6} 3 / 3$. $=/-151$ a8f8 0116.00 a7f7e6f4 3/3. $=/-150$ b7d8 $0116.00 \mathrm{~g} 5 \mathrm{c} 8 \mathrm{~d} 7 \mathrm{f6} 3 / 3 .=/-149$ b7d6 0116.00 d8c8d7e5 3/3. $=/-148$ d8c6 0116.00 b8a7a8b6 3/3. $=/-139$ b8a6 0116.00 b7a7b6c4 3/3. $=/-137$ a8c7 0116.00 d6c5d5b4 3/3. $=/-133$ d8c6 0116.00 b8a7b6c4 3/3. $=/-133$ b7d8 $0116.00 \mathrm{~h} 8 \mathrm{c} 8 \mathrm{e} 8 \mathrm{~d} 7 \mathrm{3} / 3 .=/-132$ d6f7 $0116.00 \mathrm{~g} 4 \mathrm{~h} 7 \mathrm{~g} 6 f 4 \mathrm{3} / 3 .=/-127$ $\mathrm{d} 7 \mathrm{~g} 40116.00 \mathrm{f} 5 \mathrm{~d} 3 \mathrm{~d} 5 \mathrm{c} 43 / 3 .=1-125$ b8a6 0116.00 b4a7b6a4 3/3. $=/-123$ d6b7 0116.00 f8b8b6d5 3/3. $=/-113$ d6b5 0116.00 c7a7b6a5 3/3. $=/-112$ b7d8 $0116.00 \mathrm{c} 7 \mathrm{c} 8 \mathrm{~d} 7 \mathrm{f} 63 / 3 .=/-110$ b7d8 $0116.00 \mathrm{f7c} 8 \mathrm{ffe6} 3 / 3 .=/-101$ d6f7 $0116.00 \mathrm{~h} 8 \mathrm{f} 8 \mathrm{~b} 6 \mathrm{~d} 43 / 3 .=/-088$ d6f7 0116.00 c8e7e6f6 3/3. $=/-083$ d7b6 0116.00 c7e8a7c6 3/3. $=/-082$ d7a4 0116.00 b5d3d5e4 3/3. $=/-076$ c7e8 $0116.00 \mathrm{~g} 7 \mathrm{~d} 8 \mathrm{e} 7 \mathrm{~g} 63 / 3 .=/-074$ b7d8 $0116.00 \mathrm{f7c} 8 \mathrm{f} 8 \mathrm{~d} 73 / 3 .=/-072$
c7e8 $0116.00 \mathrm{~h} 5 \mathrm{~d} 8 \mathrm{e} 7 \mathrm{~g} 63 / 3 .=/-072$ d6g3 $0116.00 \mathrm{f4h} 6 \mathrm{~g} 7 \mathrm{f6} 3 / 3 .=/-072$ d7f8 0116.00 e6e8f7g6 3/3. $=/-060$ c8e8 0116.00 a7e7a6c4 3/3. $=/-051$ c6g8 0116.00 h 4 h 8 g 7 c 3 3/3. $=/-049$ d7b6 $0116.00 \mathrm{c} 8 \mathrm{c} 6 \mathrm{~b} 7 \mathrm{e} 43 / 3 .=1-049$ c6b8 $0116.00 \mathrm{a} 6 a 8 \mathrm{~b} 7 \mathrm{c} 43 / 3 .=/-046$ d6f7 $0116.00 \mathrm{~h} 8 f 8 \mathrm{~d} 8 \mathrm{c} 63 / 3 .=/-042$ $\mathrm{d} 8 \mathrm{~g} 80116.00 \mathrm{f7e8f6d5} 3 / 3 .=/-031$ d7f8 $0116.00 \mathrm{a} 7 \mathrm{a} 4 \mathrm{~d} 4 \mathrm{~b} 23 / 3 .=/-029$ c7e8 $0116.00 \mathrm{~g} 7 \mathrm{~d} 8 \mathrm{~g} 8 \mathrm{e} 7 \mathrm{3} / 3 .=/-028$ d6a2 $0116.00 \mathrm{c} 3 \mathrm{a} 3 \mathrm{~d} 3 \mathrm{e} 3 \mathrm{3} / 3 .=/-023$ d8f8 $0116.00 \mathrm{a} 7 \mathrm{~h} 8 \mathrm{~g} 7 \mathrm{~h} 53 / 3 .=1-023$ d7g7 0116.00 e8g8d8f7 3/3. $=/-019$ d7f8 $0116.00 \mathrm{~h} 7 \mathrm{e} 8 \mathrm{~h} 8 \mathrm{f} 73 / 3 .=/-015$ $\mathrm{c} 6 \mathrm{~d} 80116.00 \mathrm{~b} 7 \mathrm{~d} 7 \mathrm{c} 8 \mathrm{f} 53 / 3 .=/-012$ d6b5 $0116.00 \mathrm{c} 6 \mathrm{c} 7 \mathrm{~d} 7 \mathrm{c} 53 / 3$. $=/-011$ d8a8 $0116.00 \mathrm{~b} 7 \mathrm{c} 8 \mathrm{~b} 6 \mathrm{~d} 53 / 3 .=/-009$ d7b6 0116.00 d8c8e8d6 3/3. $=/-008$ c7a8 $0116.00 \mathrm{~g} 8 \mathrm{~b} 8 \mathrm{f8g6} 3 / 3 .=/-007$ c7a8 $0116.00 \mathrm{~h} 8 \mathrm{~b} 8 \mathrm{~g} 8 \mathrm{f6} 3 / 3 .=/-007$ d7f5 $0116.00 \mathrm{~b} 7 \mathrm{a} 8 \mathrm{e} 8 \mathrm{c} 73 / 3 .=/-007$ d8f8 $0116.00 \mathrm{~b} 7 \mathrm{a} 8 \mathrm{~d} 7 \mathrm{~b} 63 / 3 .=/-007$ c6f8 0116.00 b7b6a6c4 3/3. $=/-006$ c7a6 0116.00 c8b8d8c6 3/3. $=/-006$ d7b6 $0116.00 \mathrm{c} 7 \mathrm{c} 8 \mathrm{~d} 8 \mathrm{c} 63 / 3 .=/-006$ c7a8 0116.00 b5b8c6b4 3/3. $=/-005$ c7a8 0116.00 c8b8c6a5 3/3. $=/-005$ c8b6 $0116.00 \mathrm{a} 8 \mathrm{~d} 8 \mathrm{c} 7 \mathrm{a6} 3 / 3 .=1-003$ $\mathrm{d} 6 \mathrm{~d} 40116.00 \mathrm{c} 5 \mathrm{~d} 5 \mathrm{~d} 8 \mathrm{a} 33 / 3 .=/-003$ d6d4 0116.00 e5d5d8g3 3/3. $=/-003$ d8c6 $0116.00 \mathrm{~b} 8 \mathrm{e} 8 \mathrm{~d} 7 \mathrm{b6} 3 / 3$. $=/-003$ a8d5 $0116.00 \mathrm{d7b7c} 6 \mathrm{~d} 63 / 3 .=/-002$ b8e7 0116.00 a6b4d6b5 3/3. $=/-002$ c6b8 $0116.00 \mathrm{c} 3 \mathrm{~b} 7 \mathrm{c} 5 \mathrm{~d} 33 / 3 .=/-002$ d8f8 $0116.00 \mathrm{c} 7 \mathrm{~h} 8 \mathrm{~d} 7 \mathrm{e} 53 / 3 .=/-002$ a8c7 $0116.00 \mathrm{a} 64 \mathrm{a} 5 \mathrm{c} 63 / 3$. $=/-001$ a8c7 0116.00 a6a4a7c6 3/3. $=/-001$ a8c7 0116.00 a6e8a5c6 3/3. $=/-001$ $\mathrm{a} 8 \mathrm{c} 70116.00 \mathrm{a} 6 \mathrm{e} 8 \mathrm{a} 7 \mathrm{c} 63 / 3 .=/-001$ a8c8 $0116.00 \mathrm{~d} 4 \mathrm{~d} 8 \mathrm{a} 5 \mathrm{c} 43 / 3 .=/-001$ b8c6 $0116.00 \mathrm{~d} 8 \mathrm{~b} 4 \mathrm{~d} 6 \mathrm{e} 83 / 3 .=/-001$ b8c6 0116.00 d8f8d6e8 3/3. $=/-001$ b8d7 $0116.00 \mathrm{~b} 6 \mathrm{~b} 4 \mathrm{~d} 6 \mathrm{~b} 53 / 3 .=1-001$ c7a6 0116.00 c5b8c6e5 3/3. $=/-001$ c7a6 0116.00 d5b8d8c6 3/3. $=/-001$ c7a8 $0116.00 \mathrm{c} 8 \mathrm{~b} 8 \mathrm{~d} 8 \mathrm{c} 63 / 3 .=1-001$ c7a8 0116.00 f7b8d7f6 3/3. $=/-001$ d8e6 0116.00 f8h8e8f6 3/3. $=/-001$
*C* the same list of 203 sorted by Kpositions
$\mathrm{a} c 60116.00 \mathrm{~b} 7 \mathrm{c} 8 \mathrm{~b} 8 \mathrm{~d} 7 \mathrm{3} / 3 .=/-187$ a8c6 0116.00 b8a4b5d4 3/3. $=/-202$ a8c6 0116.00 e7b8e8d6 3/3. $=/-202$ a8c6 0116.00 e7h8b5c5 3/3. $=/-213$ a8c6 $0116.00 \mathrm{~h} 7 \mathrm{~h} 8 \mathrm{~d} 7 \mathrm{~b} 53 / 3 .=/-210$ $\mathrm{a} 8 \mathrm{c} 70116.00 \mathrm{a} 4 \mathrm{~g} 8 \mathrm{c} 6 \mathrm{~b} 43 / 3 .=/-206$ a8c7 $0116.00 \mathrm{a} 5 \mathrm{a} 4 \mathrm{c} 8 \mathrm{a} 63 / 3$. $=/-195$ a8c7 0116.00 a6a4a5c6 3/3. $=/-001$ a8c7 0116.00 a6a4a7c6 3/3. $=/-001$ а8c7 0116.00 a6a4e7c6 3/3. $=/-204$ a8c7 0116.00 a6e8a5c6 3/3. $=/-001$ a8c7 0116.00 a6e8a7c6 3/3. $=/-001$ а8с7 0116.00 а6е8е7c6 3/3. $=/-202$ a8c7 0116.00 b1a7c5a4 3/3. $=/-203$ $\mathrm{a} 8 \mathrm{c} 70116.00 \mathrm{~b} 3 \mathrm{~g} 7 \mathrm{~d} 7 \mathrm{e} 53 / 3 .=/-205$ a8c7 0116.00 b5a6d8d3 3/3. $=/-204$ а8c7 0116.00 b5e6c6e5 3/3. $=/-200$ a8c7 0116.00 b8a6d8f3 3/3. $=/-201$ a8c7 $0116.00 \mathrm{~b} 8 \mathrm{~d} 5 \mathrm{~d} 6 \mathrm{~d} 43 / 3 .=/-201$ a8c7 0116.00 c1a4c6d4 3/3. $=/-204$ a8c7 0116.00 c5h3c6e3 3/3. $=/-202$ a8c7 $0116.00 \mathrm{~d} 2 \mathrm{~b} 5 \mathrm{c} 6 \mathrm{e} 3 \mathrm{3} / 3 .=1-204$ a8c7 $0116.00 \mathrm{~d} 2 \mathrm{cle} 7 \mathrm{~d} 53 / 3 .=/-210$ a8c7 0116.00 d5b7e5d3 3/3. $=/-178$ a8c7 0116.00 d5d7e6d4 3/3. $=/-199$ a8c7 0116.00 d6c5d5b4 3/3. $=/-133$ a8c7 0116.00 d6c5e7d5 3/3. $=/-196$ a8c7 0116.00 d6f8c6f4 3/3. $=/-195$ a8c7 0116.00 eldlc6d4 3/3. $=/-206$ a8c7 0116.00 e 4 a 4 c 6 d 4 3/3. $=/-206$ a8c7 0116.00 e8e6e7c6 3/3. $=/-207$ а8c7 0116.00 f4h3c6e5 3/3. $=/-193$ $\mathrm{a} 8 \mathrm{c} 80116.00 \mathrm{a} 5 \mathrm{~b} 6 \mathrm{~b} 5 \mathrm{c} 33 / 3 .=/-207$ a8c8 $0116.00 \mathrm{~d} 4 \mathrm{~d} 8 \mathrm{a} 5 \mathrm{c} 43 / 3 .=/-001$ a8d5 0116.00 c 8 b 7 c 6 e 5 3/3. $=/-204$ a8d5 0116.00 d7b7c6d6 3/3. $=/-002$ a8d5 $0116.00 \mathrm{~g} 8 \mathrm{~b} 7 \mathrm{f} 7 \mathrm{c} 6 \mathrm{3} / 3 .=/-199$ a8d6 $0116.00 \mathrm{a} 7 \mathrm{c} 8 \mathrm{~b} 8 \mathrm{~d} 7 \mathrm{3} / 3 .=/-186$ a8d6 $0116.00 \mathrm{~b} 5 \mathrm{a} 7 \mathrm{c} 5 \mathrm{a} 43 / 3 .=/-210$ a8d6 0116.00 c 2 h 7 c 6 c 5 3/3. $=/-203$ a8d7 0116.00 a5f8f5d4 3/3. $=1-208$ a8d7 0116.00 b6f8d6f5 3/3. $=/-210$ a8d7 0116.00 e6g8e5d3 3/3. $=1-201$ a8e6 0116.00 d8f8d6f5 3/3. $=1-210$ a8e8 $0116.00 \mathrm{c} 7 \mathrm{~b} 8 \mathrm{e} 7 \mathrm{~d} 63 / 3 .=/-210$ a8f7 $0116.00 \mathrm{~b} 888 \mathrm{~d} 6 \mathrm{f} 5 \mathrm{3} / 3 .=/-206$
a8f8 0116.00 a7f7e6f4 3/3. $=/-150$ a8g7 0116.00 b8g8e6b5 3/3. $=/-196$ a8g7 0116.00 b8g8e6d5 3/3. $=/-200$ b7d6 0116.00 c7a2e7c6 3/3. $=/-203$ b7d6 0116.00 d8c8d7e5 3/3. $=/-148$ b7d7 0116.00 a8d8e7d5 3/3. $=/-204$ b7d7 $0116.00 \mathrm{~b} 8 \mathrm{a} 8 \mathrm{~b} 5 \mathrm{c} 83 / 3 .=1-177$ b7d7 0116.00 b8a8c8e8 3/3. $=/-177$ b7d7 0116.00 c8c7c6d5 3/3. $=/-190$ b7d8 0116.00 c7a8e7c6 3/3. $=/-186$ b7d8 $0116.00 \mathrm{c} 7 \mathrm{c} 8 \mathrm{~d} 7 \mathrm{f6} 3 / 3 .=/-110$ b7d8 $0116.00 \mathrm{f7c} 8 \mathrm{~d} 7 \mathrm{ff} 3 / 3 .=/-151$ b7d8 $0116.00 \mathrm{f7c} 8 \mathrm{f} 8 \mathrm{~d} 73 / 3 .=/-072$ b7d8 $0116.00 \mathrm{f7c} 8 \mathrm{f8e6} 3 / 3 .=/-101$ b7d8 $0116.00 \mathrm{~g} 5 \mathrm{c} 8 \mathrm{~d} 7 \mathrm{f} 63 / 3 .=/-149$ b7d8 $0116.00 \mathrm{~h} 8 \mathrm{c} 8 \mathrm{e} 8 \mathrm{~d} 73 / 3 .=/-132$ b8a6 0116.00 b4a7b6a4 3/3. $=/-123$ $\mathrm{b} 8 \mathrm{a} 60116.00 \mathrm{~b} 7 \mathrm{a} 7 \mathrm{~b} 6 \mathrm{c} 43 / 3$. $=/-137$ b8a6 0116.00 c7a7b6b4 3/3. $=/-152$ b8b6 0116.00 a7d7e8d6 3/3. $=/-199$ $\mathrm{b} 8 \mathrm{~b} 60116.00 \mathrm{c} 4 \mathrm{~d} 7 \mathrm{~b} 5 \mathrm{~d} 43 / 3 .=/-181$ b8b6 0116.00 c4e4b5d4 3/3. $=/-199$ b8b6 0116.00 d5c4a7e4 3/3. $=/-202$ b8b6 0116.00 e8a2a5e7 3/3. $=/-207$ b8b6 0116.00 e8a2d8e7 3/3. $=/-207$ b8b6 0116.00 e8a2e7e5 3/3. $=/-208$ b8c6 0116.00 a6a7b6d5 3/3. $=/-169$ b8c6 0116.00 a8a7e3c2 3/3. $=/-198$ b8c6 0116.00 a8a7f5e3 3/3. $=/-203$ b8c6 0116.00 a8a7f5h3 3/3. $=/-201$ $\mathrm{b} 8 \mathrm{c} 60116.00 \mathrm{~d} 8 \mathrm{~b} 4 \mathrm{~d} 6 \mathrm{e} 83 / 3 .=/-001$ b8c6 0116.00 d8f8d $6 \mathrm{c} 43 / 3 .=/-204$ b8c6 0116.00 d8f8d6e8 3/3. $=/-001$ b8c6 0116.00 e6f8d6f5 3/3. $=/-204$ b8c6 0116.00 f6c7d6f5 3/3. $=1-209$ b8d6 0116.00 c7b5e7c5 3/3. $=/-198$ b8d7 0116.00 a6b4b5e4 3/3. $=/-198$ b8d7 0116.00 a6c5d6b5 3/3. $=/-204$ b8d7 0116.00 a8a2b5c5 3/3. $=/-207$ b8d7 $0116.00 \mathrm{a} 8 \mathrm{a} 7 \mathrm{c} 5 \mathrm{~b} 33 / 3$. $=/-211$ b8d7 0116.00 b6b4d6b5 3/3. $=/-001$ b8d7 0116.00 b6e1a7d6 3/3. $=/-211$ b8d7 0116.00 b6e1c7d6 3/3. $=/-199$ b8d7 0116.00 b6e1d6d4 3/3. $=/-211$ b8d7 0116.00 c8b7e8c7 3/3. $=/-176$ b8d7 0116.00 f6c7f7e5 3/3. $=/-200$ b8d8 0116.00 a7d7a4e7 3/3. $=/-195$ b8d8 0116.00 a7d7e4e7 3/3. $=/-195$ b8e7 $0116.00 \mathrm{a} 6 \mathrm{~b} 4 \mathrm{~d} 6 \mathrm{~b} 53 / 3 .=/-002$
b8f8 0116.00 d7f7e6f4 3/3. $=/-165$ b8g7 0116.00 c8g8c7e6 3/3. $=/-185$ c6b8 $0116.00 \mathrm{a} 6 \mathrm{a} 8 \mathrm{~b} 7 \mathrm{c} 43 / 3 .=1-046$ c6b8 0116.00 c3b7c5d3 3/3. $=/-002$ c6d8 $0116.00 \mathrm{~b} 7 \mathrm{~d} 7 \mathrm{c} 8 \mathrm{f} 53 / 3 .=/-012$ c6e5 0116.00 a4a8d5b3 3/3. $=/-199$ c6e5 0116.00 c4a2d5e4 3/3. $=/-201$ c6e5 0116.00 c4a6d5e4 3/3. $=/-199$ c6e7 0116.00 b8d7d6e6 3/3. $=/-172$ c6f8 $0116.00 \mathrm{~b} 7 \mathrm{~b} 6 \mathrm{a} 6 \mathrm{c} 43 / 3 .=/-006$ c6g8 $0116.00 \mathrm{~h} 4 \mathrm{~h} 8 \mathrm{~g} 7 \mathrm{c} 33 / 3 .=1-049$ c7a6 0116.00 c5b8c6e5 3/3. $=/-001$ c7a6 0116.00 c8b8d8c6 3/3. $=/-006$ c7a6 0116.00 d5b8d8c6 3/3. $=/-001$ c7a8 0116.00 b5b8c6b4 3/3. $=/-005$ c7a8 0116.00 c8b8c6a5 3/3. $=/-005$ c7a8 0116.00 c8b8d8c6 3/3. $=/-001$ c7a8 0116.00 f7b8d7f6 3/3. $=/-001$ c7a8 $0116.00 \mathrm{~g} 8 \mathrm{~b} 8 \mathrm{f8g} 63 / 3 .=/-007$ c7a8 $0116.00 \mathrm{~h} 8 \mathrm{~b} 8 \mathrm{~g} 8 \mathrm{f} 63 / 3 .=/-007$ c7b5 0116.00 a3b6d4b3 3/3. $=/-200$ c7b5 $0116.00 \mathrm{a} 8 \mathrm{~b} 6 \mathrm{c} 6 \mathrm{c} 53 / 3$. $=/-193$ c7b5 0116.00 c3b6d4b3 3/3. $=/-179$ c7c5 0116.00 f6c6d6c4 3/3. $=/-180$ c7e6 0116.00 c5a3d6e5 3/3. $=/-207$ c7e6 $0116.00 \mathrm{~d} 7 \mathrm{~b} 8 \mathrm{f7d6} 3 / 3 .=/-207$ c7e8 0116.00 a8d8e7c4 3/3. $=/-192$ c7e8 0116.00 d6d8e7f6 3/3. $=/-153$ c7e8 $0116.00 \mathrm{~g} 7 \mathrm{~d} 8 \mathrm{e} 7 \mathrm{~g} 63 / 3 .=1-074$ c7e8 $0116.00 \mathrm{~g} 7 \mathrm{~d} 8 \mathrm{~g} 8 \mathrm{e} 73 / 3 .=1-028$ c7e8 $0116.00 \mathrm{~h} 5 \mathrm{~d} 8 \mathrm{e} 7 \mathrm{~g} 63 / 3 .=/-072$ c7f4 0116.00 e5c3c5b4 3/3. $=/-166$ c8a6 0116.00 b7e7e6c4 3/3. $=/-204$ c8a6 0116.00 b8b6e6c5 3/3. $=/-208$ c8b2 $0116.00 \mathrm{a} 7 \mathrm{a} 2 \mathrm{~d} 5 \mathrm{c} 43 / 3 .=/-196$ c8b3 0116.00 d4b1c5e4 3/3. $=/-201$ c8b4 0116.00 a8a6f7b5 3/3. $=/-189$ c8b6 0116.00 a8d8c7a6 3/3. $=/-003$ c8c6 $0116.00 \mathrm{~b} 8 \mathrm{~b} 4 \mathrm{~b} 7 \mathrm{a} 53 / 3 .=/-191$ c8d5 0116.00 a8a7c4d4 3/3. $=/-202$ c8d5 0116.00 b8b6c5b4 3/3. $=/-210$ c8d6 0116.00 c7b5c5f5 3/3. $=/-200$ c8e8 0116.00 a7e7a6c4 3/3. $=/-051$ c8f5 0116.00 e6c4c6b5 3/3. $=/-194$ c8f6 $0116.00 \mathrm{~b} 7 \mathrm{~h} 7 \mathrm{~g} 6 \mathrm{e} 5 \mathrm{3} / \mathrm{3} .=/-202$ c8f7 0116.00 e8a4f8e6 3/3. $=/-198$ c8h7 0116.00 d8h8d7f6 3/3. $=/-171$ d6a2 0116.00 c3a3d3e3 3/3. $=/-023$ d6a4 0116.00 c3a3f4d3 3/3. $=/-190$
d6b5 0116.00 c6c7d7c5 3/3. $=/-011$ d6b5 0116.00 c7a7b6a5 3/3. $=/-112$ d6b7 0116.00 f8b8b6d5 3/3. $=/-113$ d6c4 0116.00 b6a7c5b4 3/3. $=/-162$ d6c4 0116.00 b7c5d5d4 3/3. $=/-189$ d6c4 0116.00 d5a5d3g3 3/3. $=/-189$ d6c4 0116.00 e5c5d4e3 3/3. $=/-186$ d6d4 0116.00 c5d5d8a3 3/3. $=/-003$ d6d4 0116.00 c6e8b6d5 3/3. $=/-200$ d6d4 0116.00 e5d5d8g3 3/3. $=/-003$ d6d4 0116.00 e6c8f6d5 3/3. $=/-200$ d6e4 $0116.00 \mathrm{f} 6 \mathrm{~d} 8 \mathrm{e} 5 \mathrm{f4} 3 / 3 .=/-194$ d6e4 0116.00 f6h8e5f4 3/3. $=/-190$ d6f7 0116.00 c8e7e6f6 3/3. $=/-083$ d6f7 $0116.00 \mathrm{c} 8 f 8 \mathrm{a} 4 \mathrm{~d} 43 / 3 .=/-174$ d6f7 0116.00 g4h7g6f4 3/3. $=/-127$ d6f7 $0116.00 \mathrm{~h} 8 \mathrm{f} 8 \mathrm{~b} 6 \mathrm{~d} 43 / 3 .=/-088$ d6f7 $0116.00 \mathrm{~h} 8 \mathrm{f} 8 \mathrm{~d} 8 \mathrm{c} 63 / 3 .=/-042$ d6g3 $0116.00 \mathrm{f} 4 \mathrm{~h} 6 \mathrm{~g} 7 \mathrm{f} 63 / 3 .=/-072$ d7a4 0116.00 b5d3d5e4 3/3. $=/-076$ d7b4 0116.00 e5c8d6e4 3/3. $=/-186$ d7b6 0116.00 c7c8d8c6 3/3. $=/-006$ d7b6 0116.00 c7e8a7c6 3/3. $=/-082$ d7b6 0116.00 c8c6b7e4 3/3. $=/-049$ d7b6 0116.00 d8c8e8d6 3/3. $=/-008$ d7c5 0116.00 b7a8c6b5 3/3. $=/-176$ d7c5 0116.00 b8a6d6b5 3/3. $=/-177$ d7c5 0116.00 b8c6d6d5 3/3. $=/-186$ d7c5 0116.00 e6c6d5e4 3/3. $=/-200$ d7f5 0116.00 b7a8e8c7 3/3. $=/-007$ d7f6 $0116.00 \mathrm{~b} 8 \mathrm{~g} 8 \mathrm{f} 7 \mathrm{~g} 53 / 3 .=/-195$ d7f6 0116.00 e7c8e6g5 3/3. $=/-198$ d7f6 0116.00 e7c8g7e6 3/3. $=/-165$ d7f8 0116.00 a7a4d4b2 3/3. $=/-029$ d7f8 0116.00 a7a4d4c3 3/3. $=/-198$ d7f8 0116.00 e6e8f7g6 3/3. $=/-060$ d7f8 0116.00 h7e8h8f7 3/3. $=/-015$ d7g4 0116.00 f5d3d5c4 3/3. $=/-125$ d7g5 0116.00 b6e8b7d6 3/3. $=/-190$ d7g7 0116.00 e8g8d8f7 3/3. $=/-019$ d8a8 0116.00 b7c8b6d5 3/3. $=/-009$ d8b2 0116.00 a6a2b6d5 3/3. $=/-197$ d8b2 $0116.00 \mathrm{a} 8 \mathrm{a} 2 \mathrm{~d} 5 \mathrm{e} 33 / 3 .=/-198$ d8b5 0116.00 a8a5d5c3 3/3. $=/-195$ d8c6 0116.00 b8a6b5d4 3/3. $=/-198$ d8c6 0116.00 b8a7a8b6 3/3. $=/-139$ d8c6 0116.00 b8a7b6c4 3/3. $=/-133$ d8c6 0116.00 b8a7b6d5 3/3. $=/-179$ d8c6 0116.00 b8e8d7b6 3/3. $=/-003$
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REVIEWS
editor: John Roycroft

*C* ELECTRONIA
It was as recently as in EG138 that AJR wrote that the electronic medium could not be résuméd in EG's pages because it was proliferating and diversifying so fast. This has not changed except that two more or less simultaneous events have imposed force majeure exceptions. The first is Harold van der Heijden's 50,000 studies on CD, which can now be purchased widely at around £39.95 (DM99.90) - ISBN 3-932466-88-8. The second is IM Attila Schneider's new web-site which hits all others, and there may be a thousand by now, globally for six. ['To hit for six' is an English metaphor from the national game of cricket, with the meaning of to pulverise, to demolish.] It might be preferable to introduce the convention ${ }^{*} W^{*}$ for the world-wideweb, keeping *C* for odb's and chess-analysing hardware or software, but for the moment we'll restrict ourselves to ${ }^{*} \mathrm{C}^{*}$, implying that at least a computer is needed.

## 1. ENDGAME STUDY DATABASE 2000 *C*

This database is not standalone. It is recommended that ChessBase 7.0 or later be installed but this reviewer used only Fritz6, which is adequate. We assume that the reader is unfamiliar with Fritz but is familiar with a computer keyboard and function keys.
With the CD saved to hard disk invoke Fritz and mouse-click on the right-most mini-icon of the eight displayed top-left above the diagram, namely:

Load... Book... Board... Default... Fullscreen... User... Options...
DATABASE...
We assume that no other 'database' is installed - 'Studybase2000.cbh' should be present (ie, highlight-selected if it is not present) in the exiguous 'letter-box' at the top. Warning: what Fritz pompously calls a 'database' could be very small and which a user has created. There should now display the first screen listing of the 50,000 positions from the CD. An item consists of a name, such as Philidor, a GBR code preceded by $=$ or + , a coded source, a 'date', and something else (which we ourselves don't understand anyway). You may need to scroll right/left and up/down. Each can be displayed by a click-highlight and a second click (ie double-click after the cursor is placed on the line that you select).
Preceding the serially numbered (but not consistently sequenced) studies are five fairly small files which can and should be opened for reading or inspection: there is a brief - too brief-Introduction, and four files expanding the codes used throughout to indicate sources. There are four of these files rather than one because a file in ChessBase has a size ceiling. The sequencing here is almost, but not strictly, alphabetic, by a code that is arbitrarily assigned. The remainder of this review is for adventurous and ham-fisted newcomers, to which band your reviewer belongs.
Your reviewer is ignorant of any appropriate printed guide to Fritz (which came to him as a prize, without documentation) or the studies CD, so cannot recommend any. He does not in general find screen 'Help' facilities helpful though there are bright exceptions: hitting F1 (or a double click on Help) is certainly worth a try - you might find a photo of Eugene Nalimov. In short, experts tend to be bad teachers, so you could be best on your own: my advice is randomly to explore keyboard and mouse and screen, with frequent repetition and taking mental or written notes. When in trouble - and there is plenty lying in ambush - try the ESC button, a RESTORE option (if there is one), or click on BACK or the magic ' $x$ ' in the top-right corner. There are some culs-de-sac, while your last resort is the $\mathrm{Ctl}+\mathrm{Alt}+\mathrm{Del}$ combination. The shortcut for entering a (study) position is to display game-start ('New Game') and then hit S, then E, a mnemonic for this being the first two letters of SEtup, after which you can
mouse-drag the figurine pieces at will - at least you can when you have discovered how to blank out a square.
Fritz offers presentation options for language, board orientation, and suchlike cosmetics, but no option for 'studies'. As a result keywords are $100 \%$ player orientated. This is a deterrent to study enthusiasts, most of whom do not play chess as a game and who follow otb chess with desultory interest, if at all. We shall consider some of the implications of this regrettable omission - a missed opportunity if ever there was one - by taking the reader through the story of a 'search'.
For 'search' the Fritz-word is filter (look for the miscroscopic funnel in one of the mini-icons); for 'composer' the F-word is White; for 'GBR code' it is Black; for 'source' it is Tournament; and there may be more such linguistic-cum-psychological hurdles. This is not all. The search dialogue box has many other fields: you should leave them severely alone, whatever they appear to be saying - they refer to Elo, ECO, moves, text, date, mate, stalemate and so on. If you find a use for them please e-mail this reviewer. Hitting ' $\mathrm{Ctl}+\mathrm{W}$ ' at this point displays the database's stored source details (coded). It is reputedly possible to use the playing-power of Fritz to analyse, as it were, online and in mid-solution - 'infinite' analysis. Somehow I also accidentally added a full solution to the primary listing screen - it disappeared 'off the map' to the right for up to 21 moves and had to be scrolled to and fro.
The better news, the really impressive feature of the studies CD, is the flexibility, power and speed of a search. It does not matter that a search on 'Troitzky' retrieves zero, because a search on 'Troit' retrieves the lot; it does not matter that a 'GBR' search on 00, hoping to retrieve studies with no queens or rooks, retrieves also (i.a.) studies with no pawns, because a slight refinement of the search argument, namely to $00^{* *} .{ }^{* *}$ retrieves exactly what one wanted the asterisk (or '?') 'wild card' is brilliant (though ancient in computer history, and superfluous here for names). The quantitative result of a search seems to appear at the bottom left of the screen, which is useful, though it soon disappears. It is also important, in a search, to bear in mind that the database distinguishes most of the time between draws and wins, so a general retrieval may need to be performed twice. One must be both patient and inventive: the database is case sensitive - van_der_Heijden retrieves zero, while Van_der_H retrieves 14; Yakimchik fails while Jakimtsjik succeeds, so it may (or may not) be wise not to search on what you think the complete name is. Distinguishing among composers of the same name (Kuznetsov, Kubbel, Katsnelson) seems not possible, as does the retrieval of joint compositions when the search argument happens not to be the first family name stored.
Enough! Daring reader, it's all in the learning curve - may yours be steeper than mine.

The quantity of the material on the CD is plain. When the first version came on the market there were 20,000 positions. The expansion is an extraordinary tribute to Harold van der Heijden's enthusiasm, expertise and persistence. Nevertheless, what of the quality? We are not talking of the quality of the studies but rather of the criteria used for selection and the scholarship of the detail. Here there is room for criticism and for suggested improvements, both of which we are sure our good friend and editorial colleague Harold will not take amiss.
There is a 'grand total' of over 58,000 positions $-58,796$ to be precise. This includes twins (counting as 2), versions and corrections, but not, of course duplications. (We are not sure how genuine duplicate creation, as distinct from demonstrated plagiarism, is handled.) A search on Nunn retrieves 345, but the IGM himself claims no more than half-a-dozen studies composed by himself: the word 'original' placed above so many diagrams of his 'Secrets' series was intended to signify only, so the IGM tells us, the first appearance in print of the computer-sourced position in question. There are also some inevitable examples of duff detail in a database of such a size, but Harold will work to put these right. Dates can mislead, and no search on date seems possible - perhaps not even desirable, for some dates, such as those where the study has been abstracted from an anthology, refer to the date of the anthology. Sources and the source coding are interesting. There is no bibliographic detail and the user is expected to know to what ' 1234 ' refers. This could lead to a problem with copyright. There is no acknowledgement - probably because the list would be so large - but this has at least one wry consequence: if one wishes to know how many of the 50,000 studies were lifted from EG's pages, a search on te03, which is the relevant code, fails to answer the question because it retrieves only 646. Why? Because the sources that EG gives are the sources that the database has taken over. There are also unexplained discrepancies. A search on any source will not necessaritly retrieve anything. Why? The retrieval result was zero from b001, which is listed as ' 1000 endgames' (though Tattersall has a different code. Similarly it is not easy to identify a source with which one is familiar in order to perform a search on it.
But make no mistake - history has been made in our little world.

## 2.www.tar.hu/chessclinic * $\mathbf{C}$ *

This is an instantly attention-grabbing site for any chess enthusiast. It caters for all such, is available in three languages (English, German and Hungarian), and addresses high levels of chess skill. The only drawbacks we have noticed are that it may be slow to load - certainly in its non-English versions - and seems at present not to cater for beginners - but both of these will surely be overcome. The site balances chess matter with appeal to personalities and invitations to get involved. There is even an informal tourney for study composers, with
announced cash prizes in deutschmarks (DM300 for first) and a closing date of 1vii01. There is no entrance fee, and no set theme, but we have found no mention of a judge. The e-mail address for entries:
attila.schneider@matavnet.hu
In early February 2001 there are already eight entries.
The site needs a Cyrillic Russian version, we suggest, for optimum distribution. We also would like to see EG, ARVES taking the lead, taking wings and flying alongside, when we'll all be well and truly launched into the 21 st century. Two words of caution: this site and the skills behind need some guarantee of permanence; and our hugely talented Russian/Ukrainian/ Georgian etc friends need better web-access than the $2 \%$ of the populations of those countries that we understand can afford it at present. The corresponding figure for Britain: 49\%.
3. Jan 2001FIDE PCCC president Bedrich Formánek wished all his many email contacts a happy and prosperous true millennium, and my reply, while wishing the energetic, popular, good-humoured and all. What a future awaits us all.embracing composer president the same, was that I'll give the millennium a chance if it will give me one. The PCCC site, which is informal and not official, but no less valuable for that since it is managed by Hannu Harkola, Finnish stalwart supporter of the Commission over several decades, contains, for instance, the Guidelines for Organisers of Formal International Study Tourneys. These were agreed by the studies sub-committee at Bratislava in 1993. In our opinion there is no excuse for ignorance of these guidelines on the part of the organiser of any major study tourney. The site:
www.sci.fi/~stniekat/pccc
4. For the time being 64oracle databases (odb's) for the 6 -man pawnless endgames generated by Ken Thompson may be accessed from the Bell Laboratories site in Murray Hill, New Jersey, in a very user-friendly manner using a 24 -character string as position indicator as in the following example (note the lower case throughout, the irrelevance of the order, and the absence of spaces):
wkc8bkf6bqf7wqa1 wnd3wnf1.
The string must be placed immediately following this, which is invariable:
plan9.bell-labs.com/magic/eg/
Output is in the form of a diagram and a list of all legal moves and the result in every case in the form of a 4-digit number, the last two digits of which denote the depth to checkmate (depth zero). If the number is 9999 the result is not a win. The word 'pass' indicates the result (for White) with the other side to move.
Ken has also provided a 3-column table for the 64 pawnless 6 -man odb's. A click on the entry in col. 1 starts a max-length win, a click in col. 2 displays a max-depth recizug, and a click in col. 3 displays a two-curve graph purporting
to show frequency distribution, but we have yet to fathom how to interpret it. The table's address:
cm.bell-labs.com/cm/cs/who/ken/chesseg

Unfortunately for us, on 1st Dec 2000 Ken left Bell Labs after a brilliant career there. His new career is as a full-time flying instructor. Somewhere on the web is his account of his (second) visit to Russia to experience flying (in) a Russian fighter. There is no guarantee that the odb site facility will remain.
We repeat our minority moan that the GBR code is not used.

## SNIPPETS

1. Of the 95 or so current composing tourneys listed in INFOBLATT 29, 7 were for studies. The remaining 88 were for assorted problem genres.
2. Of the 950 or so English language chess book titles (electronic media items excepted) listed in the London-based Spring 2001 Chess \& Bridge catalogue, 63 might interest endgame enthusiasts.
3. EG138, the one with the floppy disk containing $22 *{ }^{*} *$ complete reci-zug lists, failed to reach all of its intended FSU addressees. We do not think that ARVES will raise copyright objections if those who did receive it will make copies and pass them on to those unfortunate enough to have missed out. We think - but we cannot prove - that officious customs apparatchiks on the eastern side are responsible. Of course, in any use made of the material, acknowledgement should, as always, be made to EG. This courtesy is not always observed.

## GBR code

(after Guy/Blandford/Roycroft) concisely denotes chessboard force in at most 6 digits. Examples: two white knights and one black pawn codes into 0002.01; wQ bQ wR codes as 4100; wBB vs bN codes as 0023 ; the full complement of 32 chessmen codes as $\mathbf{4 8 8 8 . 8 8}$. The key to encoding is to compute the sum ' 1 -for- $W$-and-3-for- $B l$ ' for each piece type in QRBN sequence, with white pawns and black pawns uncoded following the 'decimal point'. The key for decoding is to divide each QRBN digit by 3, when the quotient and remainder are in each of the 4 cases the numbers of Bl and W pieces respectively.
The $G B R$ code permits unique sequencing, which, together with the fact that a computer sort of several thousand codes and the reference attached to each is a matter of a second or two, enormously facilitates the construction of look-up directories. A consequence of the foregoing is the code's greatest overall advantage: its user-friendliness. The GBR code has the unique characteristic of equally suiting humans and computers. No special skill or translation process is required whether the code is encountered on a computer printout or whether it is to be created (for any purpose, including input to a computer) from a chess diagram.
A natural extension of the $G B R$ code is to use it to represent a complete position. A good convention is to precede the $G B R$ code with the squares of the kings, and follow the code with the squares of the pieces, in W-before-Bl within code digit sequence, preserving the 'decimal point' to separate the pieces from the pawns, if any (where all W pawns precede all Bl ). The 223-move optimal play solution position in the endgame wR wB bN bN would be represented: a7d3 $\mathbf{0 1 1 6 . 0 0}$ b2b3c6d6 $3 / 3+$. The $3 / 3$ ' is a control
indicating 3 W and 3 Bl men, with ' + ' meaning $W$ wins, while ' $=$ ' would mean White draws. The win/draw indicators are optional. Note that although in this example there are no pawns the $G B R$ code decimal point and immediately following pair of zeroes are obligatory (enabling a scan of a text file searching for encoded chess positions) but the absence of a decimal point in the list of squares confirms that there are no pawns. A position with pawns but no pieces would be coded in this manner: a2c4 0000.32 .d4e3f2e4f3 4/3 WTM. To indicate Black to move (but still with the implied win or draw for White) it is suggested that '-+' and '- $=$ =' be employed. Where the position result is unknown or undecided or unknowable it is suggested that the computer chess convention 'WTM' (White to move) and 'BTM' be followed. The redundancy check piece-count (including the '/' separator) and terminating full stop are both obligatory.


Nicolai Kralin, ${ }^{\text {st }}$ prize winner of the Pushkin 200MT (see page 300)

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