

The Kasparov-World Game

Article

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- vi) 12...Kc8?[-12] 13 Rh7
(Ka5/Ra2/h1/h3/h4/h6[+12])
- vii) 17...Kb8?[-5] 18 Sd7+
(Rb2+[7]) etc.
- viii) Against ...Qg3+. Two
lengthening duals: 18 Kc6[+2]
Qe8+, and 18 Kd5[+8], to which
the best response is Kb8 19 Kc6
Qe8+ 20 Kb6 Qg8 and we are back
at move 12, though Black may also
play 18...Qe8[-6].
- ix) 19...Kb8?[-2] 20 Sd7+
(Rb4/g4[+4]) Kc8 21 Rc4+ Kb7
22 Rb4+ Kc6 23 Rb6+ Kd5 24
Sf6+. But after White's next Black
is forced to play ...Kb8 after all.
- x) Or 21...Kb7?[-1], Ka7/a8?[-2]
reaching the same positions a move
or two sooner.
- xi) 23...Ka6?[-2] 24 Sb8+ and 25
Sc6+ explains why wR must be on
the 3rd or 4th rank. We already
saw 23...Kc6?[-2] 24 Rb6+.
- xii) Kb8[-5] 8 Sd7+

THE KASPAROV-WORLD GAME
Guy Haworth and Peter Karrer

Kasparov-World, initiated by
Microsoft and also sponsored by
First USA, was a novel correspon-
dence game played on the World
Wide Web at one ply per day. The
World Team was led by moderator
Danny King and four, talented
young coaches: GM Etienne Bacrot
(France, 16), FM Florin Felecan
(USA, 19), Irina Krush (USA, 15)
and WIM Elisabeth Pähtz
(Germany, 14). They each indepen-
dently nominated a move and the
World Team made its choice by

democratic vote.

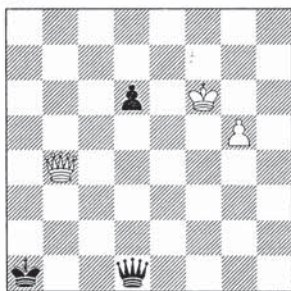
This was the first time that any
group had attempted to form on the
Web and then solve shared
problems against fixed, short-term
deadlines. The author first became
involved in his role as a Web con-
sultant, observing the dynamics and
effectiveness of the group. These
are fully described, together with
observations on the technology
contribution, in Marko *et al.*
To move swiftly to the endgame,
suffice it to say that the *World
Team* far exceeded initial expect-
ations and reached move 51 and
4000.12 position *K1* which is now
a computer target. Black is fighting
for a draw, and without the Black
Pawns *has* a draw. This had been
foreseen for three weeks, during
which time the *World Team* had
requested an **8000.00** endgame
table (EGT). To everyone's
surprise, two EGTs were created
within days, independently drawn
up to the Distance-to-Conversion
(DTC) and Mate (DTM) metrics
respectively (Nalimov *et al.*). Elkie
and Stiller provided information to
confirm that the two new EGTs
agreed with Stiller's EGT. *World
Team* thoughts turned to EGTs for
5000.01 and **4000.11**.

K1



g6b1 4000.12 after 50...d1=Q

K2



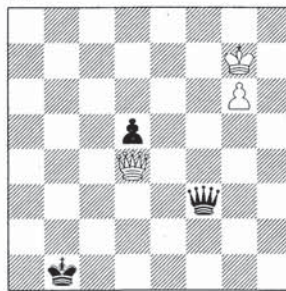
f6a1 4000.11 after 55.Qxb4

Serious analysts in the *World Team*, including FIDE World Champion Khalifman, had carried the vote thus far. However, the analysts' 51...Ka1 and 52...Kc1 lost out to 51...b5 and 52...Kb2, seriously increasing Black's difficulties. The game continued to **4000.11** positions *K2* and *K3*. At this point, the technology that had empowered suddenly depowered, a familiar risk in life today. Krush's essential recommendation of 58...Qf5, was delayed by e-mail glitches and then not displayed to the voters by

Microsoft. They saw only one coach for 58...Qf5 against two for 58...Qe4 which duly won. The *World Team* bulletin board already knew this was a loss and the rest is history.

To general consternation, Microsoft refused to rerun the vote, the media ran the story and the *World Team* soon resigned.

K3



g7b1 4000.11 after 58.g6

Post-hoc analysis proceeded by hand and by computer. Peter Karrer (2000), in a feat of programming, which the first author salutes, produced subset-EGTs for $KQKQP \approx$ and $KQPKQP \approx$, the ' \approx ' denoting a variant of chess with promotion option $P=Q$ only. Karrer (2000) shows that only 0.09% of $KQKQP(d2)$ positions change value if $P=S$ is allowed as well as $P=Q$. One might conjecture that the % is much less with the P on d3, d4.... Practical players, if not theorists, will accept information this close to perfection. Peter's *Distance to Mate* (DTM) $KQPKQP \approx$ lines are given here

with that caveat and in that spirit.

Below, we list and annotate:

a) the game as played,

b) an M-optimal line (minimaxing DTM) after Black's resignation,

c) a 58...Qf5 line, which Ken Regan believes, from Kasparov's immediate post-game analysis, was the most likely continuation, and

d) the 'endgame that got away': fitting, M-optimal but imaginary.

58...Qf5 still leads to a well deserved but much deeper win: **4000.10** arrives on move 84, not move 68. Kasparov described this game as "phenomenal ... the most complex in chess history."

This is an absorbing QP-finale for endgame enthusiasts. They will continue to benefit from the work of the web-enabled teams formed during the game. New 6-man tables and evaluation services are available from Nalimov, Thompson and Wirth as in the references. The author and others are contemplating ancillary projects and data-mining software to help find the finest gems to present in attractive problem and study settings.

Notation:

' *unique M-optimal move,*

" *literally-unique value-preserving move;*

[...] *equi-optimal move(s),*

ⁿ *one of n unlisted equi-optimal,*

^v *value changing move,*

-*d* *lost depth of d moves*
and {...} *commentary.*

a) with Krush/Regan annotation.

G. Kasparov -World: The World Wide Web, 21st June - 22nd October, 1999, ECO B52, 1-0.

1.e4 c5 2.Sf3 d6 3.Bb5+ Bd7

4.Bxd7+ Qxd7 5.c4 Sc6 6.Sc3 Sf6

7.0-0 g6 8.d4 cxd4 9.Sxd4 Bg7

10.Sde2 Qe6! 11.Sd5! Qxe4

12.Sc7+ Kd7 13.Sxa8 Qxc4

14.Sb6+ axb6 15.Sc3! Ra8 16.a4!

Se4! 17.Sxe4 Qxe4 18.Qb3 f5!

19.Bg5 Qb4! 20.Qf7 Be5 21.h3!

Rxa4! 22.Rxa4 Qxa4 23.Qxh7

Bxb2 24.Qxg6 Qe4 25.Qf7 Bd4

26.Qb3 f4! 27.Qf7 Be5 28.h4 b5

29.h5 Qc4! 30.Qf5+ Qe6 31.Qxe6+

Kxe6 32.g3 fxg3 33.fxg3 b4!

34.Bf4!? Bd4+ 35.Kh1! b3 36.g4

Kd5! 37.g5 e6! 38.h6!? Se7 39.Rd1

e5 40.Be3 Kc4 41.Bxd4 exd4

42.Kg2 b2 43.Kf3 Kc3 44.h7 Sg6

45.Ke4 Kc2 46.Rh1 d3 47.Kf5

b1=Q 48.Rxb1 Kxb1 49.Kxg6 d2

50.h8=Q d1=Q {K1, **4000.12**}

51.Qh7! b5? 52.Kf6+ Kb2?

53.Qh2+ Ka1 54.Qf4 b4?? {losing

in theory and in practice: Qd5

was required} 55.Qxb4 {K2, **4000.11**}

Qf3+ 56.Kg7" d5 57.Qd4+!" Kb1'

58.g6" {K3} Qe4? [Qf5'] -39

59.Qg1+' Kb2 60.Qf2+' Kc1

[Ka1'] -8 61.Kf6' d4' 62.g7' 1-0.

b) 62.g7' {and now} Qc6+'

63.Kg5' Qd5+' 64.Qf5' Qg2+'

65.Qg4' Qd5+' 66.Kf4' Qg8'

67.Qg1+' Kc2' 68.Qxd4'

{**4000.10**} 68...Qf7+' 69.Kg3'

Qb3+' 70.Kh4 [Kg2] Qg8' 71.Qf6

[Qg4] Kb1³ 72.Qg6+' Ka1⁴ 73.Kh3

[Kg3] Ka2 [Kb2] 74.Kh2 [Kg2]

Kb2³ 75.Qg4 [Kg1] Qb8+⁸ 76.Qg3'

Qg8' 77.Kg1' Kb1³ 78.Qg2' Ka1

[Kc1] 79.Qf1+ Kb2' 80.Qf8' Qa2⁶
 81. g8=Q [Qf2+] {5000} Qb1+'
 82.Qf1' Qxf1+' 83.Kxf1' {1000}
 Kc3' 84.Qe6⁴ Kb2⁵ 85.Qc6⁵ Ka1⁵
 86.Qb7⁵ Ka2° 87.Ke2' Ka1 [Ka3]
 88.Kd3³ Ka2° 89.Kc3² Ka1²
 90.Qb2# 1-0.

c) Ken Regan's conjectured 'most likely 58...Qf5 game continuation'.

58...Qf5' 59.Kh6' Qe6' 60.Qg1+'
 Kb2 [Ka2, Kc2] 61.Qf2+' Kb1'
 62.Qd4' Kc2! -6 (62...Ka2'
 63.Kg5' Qe7+' 64.Qf6' Qe3+'
 65.Qf4" Qg1+' 66.Kf6' Qb6+'
 67.Kg7! -7 Qe6' 68.Qf6! -10
seemed dangerous for Black)
 63.Kg5' Qe7+' 64.Qf6?! -12 {a-
 lready on the slippery slope} Qe3+'
 65.Kg4? (65. Qf4', 65. Kh5)
 Qg1+"! 66.Kf5⁵ d4" 67.g7¹⁸ d3"
 68.Qc6+¹⁵ Kd2" 69. Qg6¹⁷ Qc5+"
 70.Ke4⁵ Kc1"!! 71.g8=Q¹³ d2" {no
 checks and 72. Qg5/Qh6 leaves Bl.
 with a perpetual check} ½-½!

d) 58. g6" {and now} Qf5'
 59.Kh6' Qe6' 60.Qg1+' Ka2 [Kb2,
 Kc2] 61.Qf2+' Kb1' 62.Qd4' Ka2'
 63.Kg5' Qe7+' 64.Qf6' Qe3+'
 65.Qf4" Qg1+' 66.Kf6' Qb6+'
 67.Kf7' Qb7+' 68.Ke6' Qc8+'
 69.Kf6' Qd8+' 70.Kf5' Qc8+'
 71.Kg5' Qc3' 72.Qh2+' Ka1'
 73.Qe2' Kb1' 74.Qf2' Qc1+'
 75.Kg4' Qc3' 76.Qf1+' Kb2 [Kc2]
 77.Kf5' Qc7' 78.Qe2+' Kb1'
 79.Qd3+' Ka2' 80.Qa6+' Kb3'
 81.Qe6' Ka2' 82.Qf7' Qc2+'
 83.Ke6" Qe2+' 84.Kxd5'
 {4000.10} Ka3' 85.Qa7+' Kb3'
 86.Qb6+' Ka3' 87.Qd6+' Ka4'
 88.Qd7+ [Qc6+] Ka3' 89.g7'
 Qd1+' 90.Kc6' Qa4+' 91.Kc7'

Qa7+' 92.Kd8' Qb8+' 93.Ke7'
 Qe5+' 94.Kf7' Qf4+' 95.Kg6'
 Qg3+' 96.Kf6' Qh4+' 97.Ke5'
 Qg3+ [Qg5+] 98.Kd4' Qg1+'
 [Qf2+, Qf4+, Qh4+] 99.Kc4'
 Qc1+' 100.Kb5' Qb2+' 101.Kc6
 [Ka6] Qc2+ [Qc3+] 102.Kb7 [Kb6]
 Qb3+ [Qe4+] 103.Ka6' {a 14 move
 K-walk} Qg8' 104.Qd4' Ka2'
 105.Kb5' Qe8+' 106.Kb4' Qe1+'
 107.Kc4' Qe2+' 108.Kd5' Qb5+'
 109.Ke6' Qe8+' 110.Kf6' Qc6+'
 111.Ke5' Qe8+' 112.Kf4' Qf7+'
 113.Kg3 [Ke3] Qg6+' 114.Kh3³
 Qf5+⁵ 115.Kh4 [Kg2] {an 11 move
 K-walk} Qf7 [Qh7+] 116.Qd2+'
 Ka1³ 117.Qe1+ [Qd1+] Ka2'
 118.Qe2+' Kb3' 119.Qg4' Qg8'
 120.Kh3 [Kg3] Ka3 [Kc3]
 121.Kg3' Ka2³ 122.Kg2 [Kf2]
 Qd5+⁷ 123.Kg1' Qc5+ [Qg8]
 124.Kh1" Qc1+' 125.Qg1" Qh6+'
 126.Qh2+" Qxh2+' 127.Kxh2°
 {0000.10} Ka3² 128.g8=Q⁴ {1000}
 Kb4' 129.Qe8¹¹ Kb3⁴ 130.Qc6⁵
 Ka2⁴ 131.Qb7⁶ {and mate on
 m137} 1-0.

Acknowledgements

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References

- Hyatt, R. (2000). <ftp://ftp.cis.uab.edu/pub/hyatt/TB/> Server providing Nalimov's EGTs and statistics.
- Karrer, P. (2000). KQKQP[≈] and KQPKQP[≈]. *ICGA Journal*, v23.1.
- Krush, I. and Regan, K. (1999). Kasparov-World post-game analysis <http://www.smartchess.com/SmartChessOnline/SmartChessOnline/archiv/MSN-Karparov/>
- Marko, P. and Haworth, G.McC. (1999). The Kasparov-World Match. *ICCA Journal*, v22.4.
- Nalimov, E.V., Wirth, C. and Haworth, G.McC. (1999). KQKQKQ and the Kasparov-World Game. *ICCA Journal*, v22.4.
- Tamplin, J. (2000). <http://chess.liveonthenet.com/chess/endings/index.shtml> (Karrer, Nalimov, Thompson) EGT evaluations.
- Thompson, K. (2000). <http://cm.bell-labs.com/cm/cs/who/ken/chesseg.html> 6-man EGT maximals, mutual-zugs and statistics.

SIX-MAN ORACLE SURVEY, 1 Guy Haworth

This is a list in GBR order of existing 6-man endgame tables (EGTs) created by Nalimov (DTM, Distance to Mate) or Thompson (DTC, Distance to Conversion). An ^s indicates a past result by Stiller only. *max ww* denotes the maximum depth of wtm 1-0 positions in the endgame; *max bl* denotes the maximum depth of btm 1-0

positions. *max ww* and *max bl* are listed for both the DTM and DTC metrics.

Note the counter-intuitive relative values of DTM's *max ww* and *max bl* where these are in italics and the GBR code is marked ^{nb}. It is not always true that *bl* = *ww* or *ww*-1 as for DTC: these figures may not correspond to consecutive positions. For example, **1100** has DTM *max ww* = 6 but {Ka1 Qe6 Rf7 / Ke5 b}sets DTM *max bl* = 16: 1...Kxe6 **{0100}**. The first move converts to a maximal subgame position, always the case where the DTM figures are highlighted here.

References

- Hyatt, R. (2000). <ftp://ftp.cis.uab.edu/pub/hyatt/TB/> Server providing Nalimov's EGTs and statistics.
- Tamplin, J. (2000). <http://chess.liveonthenet.com/chess/endings/index.shtml> EGT evaluations.
- Thompson, K. (2000). <http://cm.bell-labs.com/cm/cs/who/ken/chesseg.html> 6-man EGTs.