

QUEENING IN MASTER CHESS TOURNAMENTS: 1867-1970

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Introductory Remarks

According to the Oxford Universal Dictionary, "queening" in chess was in force as early as 1440.^{1/} Currently, chess rules require that a pawn be promoted, when it has reached the eighth rank, to one of four pieces, i.e., a queen, a rook, a bishop or a knight.^{2/} For over a century this manner of queening has been adopted in master chess play.^{3/}

The purpose of this essay is to describe tentative answers to certain questions regarding queening in master chess tournaments. Fourteen chess competitions, covering the period 1867 to 1970, were studied. Over 1,200 games were examined in detail and 89 queenings were identified in 70 games.^{4/} The following results are based on this sample.

Frequency of Queening

Table 1 provides information on each tournament, it indicates total games played and the games in which one or more queenings occurred. Somewhat less than 6 percent of total games involve queening. The lowest percentage, 1.5 percent, occurred in the U. S. Championship Tournament of 1969; the highest percentage, 10 percent, took place in two tournaments, that of Hastings, 1922 and New York, 1924.

The data, viewed as a time series, suggest a decline, since 1935, in the relative frequency of queenings in master chess tournaments. Many more tournaments, however, must be studied before definitive trends of queening in master chess can be established.^{5/}

Outcome After Queening

What is the relation between queening and the outcome of a game? The answer to this question is shown in Table 2. For the sample of 70 games, draws occurred 13 times or 18.6 percent while white won 29 times or 41.4 percent and black 28 times or 40 percent.^{6/}

It will be noted that of the 14 tournaments studied, the Vienna 1903 and Baden 1914 competitions were gambit tournaments. The conditions specified in the Vienna 1903 tournament required white, the first player, to open with the King's Gambit (i.e., P-K4 and then P-KB4); and black, the second player, to accept the King's Bishop Pawn, by responding, respectively, to white by P-K4 and PxP.^{7/} The Baden 1914 tournament conditions were less stringent than those of Vienna 1903. Only Gambit openings were allowed, but the acceptance of the Gambit was not mandatory; a player had to obtain permission from the tournament committee, specifying the variation he would play in declining the Gambit.^{8/}

Separating the sample of 70 queening games by type of tournament origin, there were 58 queening games in 12 regular tournaments and 12 such games in 2 Gambit tournaments. In the "regular" tournaments white won 27 games, black 21 games and 10 games were drawn; the corresponding percentages are white .47, black .36 and drawn .17. In Table 3, comparable data are provided for total games played in the 14 tournaments. For the total of 1,049 regular tournament games the white won 35 percent, black 30 percent and 35 percent were drawn. In the two gambit tournaments of 179 games, the corresponding percentages are white 31 percent, black 36 percent and 33 percent drawn. The data for the Gambit tournaments suggest a substantial advantage for Black, both as to queening and as to winning.

Methods of Queening and Nature of Pawn Promotion

Two ways determine pawn promotion. A pawn may reach a square on the eighth rank by advancement or by capture of an enemy piece occupying that equal.

Of the 89 queenings that occurred in the 14 tournaments under investigation, 83 (or about 93 percent), were the result of pawn advancement. Only six queenings came about when an enemy piece was captured. (Table 4). In the 12 regular tournaments, white pawns queened 42 times and black pawns 34 times. Queening after capture occurred twice for white and for black. For the two gambit tournaments, there were only two queenings by white and eleven by black. In this group only two queenings, by black, occurred following capture.

Since the queen is the most valuable piece, it is no surprise that pawn promotion to queen is the overwhelming choice. For the 89 pawn promotions that occurred in 70 games, 87 were to queens and only 2 pawn promotions were to knights. In this sample not a single pawn was promoted to rook or bishop.

Distribution of Queening Events and Their Outcomes

In theory, eight pawns on each side have the potential of becoming queens. I know of no game ever played in which one side had nine queens and I would conjecture this result to be impossible. Chernev refers to a game with five games, 3 white and 2 black, and to a world championship game with four queens, 2 white and 2 black.^{9/}

Table 5 provides the distribution of queening events in 70 games, with a breakdown for color and type of tournament. In 55 of these games, only one side queened, i.e., white 28 and black 27. If we consider regular tournaments, there were 58 games with queening events in which only white queened, 27 times, and only black queened, 19 times. For the two gambit tournaments in which there were 12

queening events, only black queened, 9 times, only white, 2 times; in one game each side queened once. Thus, the number of queenings in master play is predominantly of the singular type. There were only four games in which three pawns were queened.

Of interest is the relationship between queening, color, game outcome and type of tournament. This information is provided in Table 6. When only white queened once or more, in 29 games, white won 23, lost 1 and drew 5. The comparable information for black in 28 games is 22 wins, 4 losses and 2 draws, indicating a slight advantage to white. In 9 games, white and black queened once, with the results that 5 games were drawn, white won once and black three times.

Somewhat modified results obtain by considering the type of tournament. In Table 6 consider the 58 results for the twelve regular tournaments. White performance appears appreciably better in regular tournament competition with regard to queening. In 27 games only white queened once or more, resulting for white in 22 wins, 1 loss and 4 draws (a score of .889). When only black queened once or more in 19 games, black won 15, lost 3 and drew 1 (a score of .816).

Queening Pawns and Queening Squares

Which pawns queen most frequently in tournament competition? Table 7 provides the data based on 89 queenings in the 70 game sample. For white and for black, the queen rook pawns queened most frequently, followed by the king rook pawn. Together the queen and king rook pawns accounted for 31 queenings out of a total of 89 queenings or better than 34 percent. Second in importance are the knight pawns, with 23 queenings or somewhat over 25 percent of total queenings. Tied for lowest were the king and king bishop.^{10/} Pawns with 16 queenings or around 18 percent.

These findings are consistent with chess practice and theory. On a priori grounds the expectation is that the center pawns would queen relatively infrequently because these pawns are most often captured or exchanged.^{11/} Pawns on the flanks, i.e., the rook pawns, however, are usually the survivors of openings and of early middle games. On the average, queenings occurred on the 51st move for white and the 46th move for black.^{12/}

On which squares do queenings occur? The results (Table 7), for the 89 queenings were somewhat unexpected in view of the distribution of the queening pawns. On the high side were the queen knight and king knight squares. These squares accounted for 28 queening sites, followed closely by the corresponding rook squares. The king and queen squares were of minimal significance, constituting the site of only 12 queenings.

The correspondence between the original position of the queening pawns and their queening squares, using rank correlation, was 80 per-

cent. The knight, as well as bishop, queen, and king, squares provide three ways of pawn access (by capture of an enemy piece from two adjacent columns or by advancement); the rook squares permit only two ways of pawn access. It is possible for a king rook pawn to queen on the queen knight square, in effect, a shift of seven columns. In practice, however, the moves of a queening pawn are at most two columns from the original column position; and most queening pawns remain in the original column.

Queening and Castling

The data provided in Table 8 relate queening and castling in the 70 game sample. In 29 games only white queened and in 28 games only black queened; in 13 games white and black queened. Of the 57 games in which queening was accomplished by either white or black, castling took place 46 times. Thus, in 11 games the queening player did not castle (5 white and 6 black). For the 13 games in which both sides queened, the castling move was completed 26 times, i.e., 13 times by white and 13 times by black.

As indicated in Table 8, castling on the king's side predominated, 62 times, compared with 10 times on the queen's side and 11 times in which the castling did not occur.

The distribution of queening by side of board is much more balanced than the distribution of castling. Queening and castling on the king side occurred 30 times and on the queen side 32 times. When castling occurred on the queen side, queening was equally divided, 5 on the king and 5 on the queen side. In the 11 games in which castling did not occur, 4 queenings took place on the king side and 7 queenings occurred on the queen side.

While the preponderance of castling on the king side was to be expected, it seems rather unusual that queening should occur almost equally on both sides of the board. Further samples will have to be examined, however, before any conclusions of the relationship between queening and castling sides can be asserted with any statistical reliability. The results obtained in this paper are not based on a random sample and a sample of 70 "queening" games is not large enough for the number of variables under discussion. These findings are, perhaps, suggestive or indicative of what may possibly be expected from a more extensive sample.

Summary of Principal Findings

The principal results of this analysis suggest that queenings in master chess between 1867 and 1970 occurred in about 5½ percent of the games played. There is an indication, however, that in master tournaments since 1935 the percentage of queenings in tournaments has fallen below 4 percent.

In general, the side to queen first won but it should be noted that 13 of 70 "queening" games resulted in draws, and in two games the queening side lost. Of interest is the result that under-

promotion, to knight, was made twice while the remaining 87 promotions were to queens. For both the white and black sides, the queen rook pawn queened most frequently, followed by the king rook pawn and the king and queen knight pawns.

This study should be regarded as a preliminary investigation into the phenomenon of queening in master chess tournaments. Of interest would be a comparable examination of queening in world chess championship matches. A considerably larger sample would enable us to relate chess openings to queening as well as to establish statistically defensible conclusions.

In terms of queening, it becomes very obvious that there is a variation in the value of the pawns and perhaps further study should be made of pawn evaluation in terms of their initial position.^{10/}

Finally, we must reiterate that the results of this study are subject to the strictions that (a) the sample is not random, and (b) the sample is small in terms of the number of considered variables. It is hoped, however, that this study will be a spur to further work on this problem.

Sources:

- a. Dundee Centenary Tournament, 1967 and British Chess Association Congress, Dundee 1867 by R. G. Wade (The Chess Player, Nottingham, England, 1967)
- b. The Hastings Chess Tournament, 1895, edited by Horace F. Cheshire, (Dover Publications, N. Y., 1962)
- c. Vienna Gambit 1903, annotations by George Marco (The Chess Player, Omaha, Nebraska, 1967)
- d. The International Chess Congress, St. Petersburg, 1909, by Dr. Emanuel Lasker, (Dover Publications, N. Y., 1971)
- e. Baden 1914 Chess Gambit Tournament, (James R. Schroeder, Cleveland, Ohio. 1972)
- f. Hastings International Masters' Chess Tournament 1922, ed. by W. H. Watts (Dover Publications, N. Y., 1968)
- g. London International Chess Congress 1922, ed. by W. H. Watts (Dover Publications, N. Y., 1968)
- h. New York International Chess Tournament 1924, ed. by Hermann Helms (Dover Publications, N. Y., 1961)
- i. Nottingham International Chess Tournament, 1936, ed. by W. H. Watts (Dover Publications, N. Y., 1962)
- j. Soviet Chess Championship 1941, by M. M. Botvinnik (Dover Publications, N. Y., 1973)

- k. Canadian Centennial Grand Masters Chess Tournament 1967, ed. Ken Smith (Chess Digest, Dallas, Texas, 1968)
1. 1969 United States Chess Championship and World Championship Zonal Qualifier, by Morton Siegel (United States Chess Federation, Newburgh, N. Y., 1970)
- m. The Match of the Century: U.S.S.R. v. Rest of the World, by David N. L. Levy (The Chess Player, Nottingham, England, 1970)

Notes and References

1. "Queen...8. In games a. Chess...the positions on the board attained by a pawn, when it is queened .1440," The Oxford Universal Dictionary on Historical Principles, 3rd ed., revised (Clarendon Press, Oxford, 1955), p. 1638.
2. Harkness, Kenneth, Official Chess Rulebook, (David McKay, N. Y., 1970): "On reaching the last rank a pawn must be immediately exchanged, as part of the same move, for a queen, a rook, a bishop, or a knight of the same color as the pawn, at the player's choice...", p. 26.
3. The precise evolution of the queening rule is difficult to establish. For a brief discussion of this point see "Pawn Promotion" in The Encyclopedia of Chess compiled by Anne Sunnucks (St. Martin's Press, N. Y., 1970), pp. 348-349. Also of interest is Sunnucks' entry "Queen, The" at pp. 394-395. In Volume VIII A New English Dictionary on Historical Principles, ed. by James A. H. Murray (Oxford Clarendon Press, 1914), the following comment appears at page 41 with reference to queening: "1789 Twiss Chess II. 155 Damer le Pion, literally to queen the Pawn, is a French expression. 1797 Encycl. Brit. (ed. 3) IV. 640 notes, To queen is to make a queen." I believe that the current rule on queening was generally established in the first half of the nineteenth century.
4. In this survey of 1,228 games, the score of each game, as given in the sources, was read at least three times. It cannot be claimed, however, that this survey is error-free, in that a few games involving queening may have been missed.
5. Changing styles of chess play between 1867 to 1970, primarily from open to close games, may account for relative changes in the queening phenomenon. Another factor for consideration in this connection is that of the selective basis for player tournament participation. In the last fifty years selection has become successively differentiated because of the improved methods of rating masters, international masters and grandmasters.
6. In Chess Life and Review, May 1976, p. 277, reference is made to an article "White or Black?" by J. Alonso which appeared in Ajedrez Canario (Spain) October 1974. Alonso sampled chess games for the period 1951 to 1970

and found that "...the expectation is 31% for White, 22% for Black, and 47% Drawn."

7. Vienna Gambit 1903 (Spence Tournament Classics, The Chess Player, Omaha, Nebraska, 1967), p. 54.
8. Baden 1914 Chess Gambit Tournament (J. R. Schroeder, Cleveland, Ohio, 1972), p. 4.
9. Irving Chernev, Wonders and Curiosities of Chess (Dover Publications, Inc., N. Y. 1974), pp. 127-128 and p. 148.
10. Encyclopedia Britannica (1st Edition Bell and MacFarquhar, Edinburgh, 1771), entry

"Chess" "...The difference of the worth of pawns is not as great as that of noblemen; only, it must be observed, that the king's bishop's pawn is the best in the field..." Vol. 2, p. 182.

11. Ernest Rubin, "Life and Death of a Chess Piece," The American Statistician, April 1963, pp. 20-21.
12. In the games that only white queened, the average length of the game was 61 moves compared with the average length when only black queened of 51 moves.

Table 1. Queening in Selected Master Chess Tournaments: 1867-1970

<u>Date</u>	<u>Competition</u>	<u>Total Games Played</u>	<u>Games with one or more queenings</u>	<u>Percent</u>
1867	Brit. Chess. Cong. Dundee ^{a/}	30	1	.033
1895	Hastings ^{b/}	230	13	.057
1903	Vienna Gambit ^{c/}	89	8	.090
1909	St. Petersburg, International ^{d/}	175	11	.063
1914	Baden Gambite ^{e/}	90	4	.044
1922	Hastings, International ^{f/}	30	3	.100
1922	London, International ^{g/}	120	9	.075
1924	New York, International ^{h/}	110	11	.100
1936	Nottingham, International ^{i/}	105	2	.019
1941	Soviet Chess Championship ^{j/}	60	3	.050
1967	Centenary Tourn. Dundee ^{a/}	38	1	.028
1967	Canadian Centennial ^{k/}	45	2	.044
1969	U.S. Championship ^{l/}	66	1	.015
1970	U.S.S.R. v Rest of World ^{m/}	40	1	.025
Total (14 tournaments)		1,228	70	.057
Subtotal (12 Regular Tournaments)		1,049	58	.055
Subtotal (2 Gambit Tournaments)		179	12	.067

Table 2. Outcome After Queening in 70 Master Chess Games, by Competition: 1867-1970

Date	Competition	Games with 1 or more queening	Won by		Drawn
			White	Black	
1867	Dundee	1	0	1	0
1895	Hastings	13	5	6	2
1903	Vienna Gambit	8	2 ^{a/}	4	2
1909	St. Petersburg	11	7	3	1
1914	Baden Gambit	4	0	3	1
1922	Hastings	3	1	1	1
1922	London	9	1 ^{a/}	4	4
1924	New York	11	7 ^{a/}	2	2
1936	Nottingham	2	2 ^{a/}	0	0
1941	Soviet Champion	3	1	2	0
1967	Dundee Cent.	1	1	0	0
1967	Canadian Cent.	2	1 ^{b/}	1	0
1969	U.S. Champion	1	1	0	0
1970	U.S.S.R. v World	1	0	1	0
Total	-	70	29	28	13

a/ In one game, only black queened and lost.

b/ In one game, only white queened and lost.

Table 3. Outcomes of 1,228 Games in 14 Selected Masters' Chess Tournaments, by Color: 1867-1970

Date	Competition	Total Games	Games Won by		
			White	Black	Draws
1867	Dundee	30	14	15	1
1895	Hastings	230 ^{a/}	85	87	58
1903	Vienna Gambit	89 ^{a/}	32	37	20
1909	St. Petersburg	175	65	55	55
1914	Baden Gambit	90	24	27	39
1922	Hastings	30	8	10	12
1922	London	120	51	37	32
1924	New York	110	31	41	38
1936	Nottingham	105	39	24	42
1941	Soviet Champion	60	18	13	29
1967	Dundee, Cent.	38	12	12	14
1967	Canadian Cent.	45	8	9	28
1969	U.S. Champion.	66	19	11	36
1970	U.S.S.R. v World	40	13	6	21
Totals, 14 tournaments		1,228	419	384	425
Totals, 12 Regular tournaments		1,049	363	320	366
Totals, 2 Gambit tournaments		179	56	64	59

a/ Does not include 1 game forfeited because of illness.

Table 4. Methods of Queening, by Type of Tournament and by Color, in 70 Master Chess Games: 1867-1970

Method of Queening	Queening		Total
	White	Black	
<u>12 Regular Tournaments</u>			
By Advancing Pawn to 8th Rank	40	32	72
By Pawn Capture on 8th Rank	2	2	4
Sub-total.....	42	34	76
<u>2 Gambit Tournaments</u>			
By Advancing Pawn to 8th Rank	2	9	11
By Pawn Captive on 8th Rank	0	2	2
Sub-total.....	2	11	13
<u>14 Tournaments</u>			
By Advancing Pawn to 8th Rank	42	41	83
By Pawn Capture on 8th Rank	2	4	6
Total.....	44	45	89

Table 5. Queening Events, by Type of Tournament and by Color, in 70 Master Chess Games: 1867-1970

Queening Events (per Game)	Number of Games	Queenings		Total
		White	Black	
<u>12 Regular Tournaments</u>				
1 White, 0 Black.....	26	26	0	26
2 White, 0 Black.....	1	2	0	2
0 White, 1 Black.....	18	0	18	18
0 White, 2 Black.....	1	0	2	2
1 White, 1 Black.....	8	8	8	16
1 White, 2 Black.....	3	3	6	9
2 White, 1 Black.....	1	2	1	3
Sub-Total.....	58	41	35	76
<u>2 Gambit Tournaments</u>				
1 White, 0 Black.....	2	2	0	2
2 White, 0 Black.....	0	0	0	0
0 White, 1 Black.....	9	0	9	9
0 White, 2 Black.....	0	0	0	0
1 White, 1 Black.....	1	1	1	2
1 White, 2 Black.....	0	0	0	0
2 White, 1 Black.....	0	0	0	0
Sub-Total.....	12	3	10	13
<u>14 Tournaments</u>				
1 White, 0 Black.....	28	28	0	28
2 White, 0 Black.....	1	2	0	2
0 White, 1 Black.....	27	0	27	27
0 White, 2 Black.....	1	0	2	2
1 White, 1 Black.....	9	9	9	18
1 White, 2 Black.....	3	3	6	9
2 White, 1 Black.....	1	2	1	3
Total.....	70	44	45	89

Table 6. Outcome in 70 Master Chess Games, by Color, Queening Event, and Type of Tournament: 1867-1970

12 Regular Tournaments: Queening Event	White				Black			
	Won	Lost	Drew	Total	Won	Lost	Drew	Total
1 White, 0 Black.....	21	1	4	26	1	21	4	26
2 White, 0 Black.....	1	0	0	1	0	1	0	1
0 White, 1 Black.....	3	14	1	18	14	3	1	18
0 White, 2 Black.....	0	1	0	1	1	0	0	1
1 White, 1 Black.....	1	3	4	8	3	1	4	8
1 White, 2 Black.....	0	2	1	3	2	0	1	3
2 White, 1 Black.....	1	0	0	1	0	1	0	1
Sub-total.....	27	21	10	58	21	27	10	58
2 Gambit Tournaments:								
1 White, 0 Black.....	1	0	1	2	0	1	1	2
2 White, 0 Black.....	0	0	0	0	0	0	0	0
0 White, 1 Black.....	1	7	1	9	7	1	1	9
0 White, 2 Black.....	0	0	0	0	0	0	0	0
1 White, 1 Black.....	0	0	1	1	0	0	1	1
1 White, 2 Black.....	0	0	0	0	0	0	0	0
2 White, 1 Black.....	0	0	0	0	0	0	0	0
Sub-total.....	2	7	3	12	7	2	3	12
All Tournaments:								
1 White, 0 Black.....	22	1	5	28	1	22	5	28
2 White, 0 Black.....	1	0	0	1	0	1	0	1
0 White, 1 Black.....	4	21	2	27	21	4	2	27
0 White, 2 Black.....	0	1	0	1	1	0	0	1
1 White, 1 Black.....	1	3	5	9	3	1	5	9
1 White, 2 Black.....	0	2	1	3	2	0	1	3
2 White, 1 Black.....	1	0	0	1	0	1	0	1
Total.....	29	28	13	70	28	29	13	70

Table 7

Table 7. Queening Pawns and Squares in 70 Master Chess Games, by Color and Type of Tournament: 1867-1970

Original Pawn Position	White Tournaments			Queening Square	Tournament:		
	All Regular	Gambit	--		All	Regular	Gambit
Queen Rook 8	9	9	0	Queen Rook 8	8	8	0
Queen Knight 8	4	4	0	Queen Knight 8	4	4	0
Queen Bishop 8	5	4	1	Queen Bishop 8	7	5	2
Queen 8	4	3	1	Queen 8	1	1	0
King 8	2	1	1	King 8	4	4	0
King Bishop 8	5	5	0	King Bishop 8	5	5	0
King Knight 8	8	8	0	King Knight 8	9	9	0
King Rook 8	7	7	0	King Rook 8	6	6	0
Total White....	44	41	3	--	44	42	2
Black							
Queen Rook 8	9	8	1	Queen Rook 8	9	6	3
Queen Knight 8	7	4	3	Queen Knight 8	7	6	1
Queen Bishop 8	5	3	2	Queen Bishop 8	7	5	2
Queen 8	5	5	0	Queen 8	6	6	0
King 8	6	5	1	King 8	1	1	0
King Bishop 8	3	3	0	King Bishop 8	4	4	0
King Knight 8	4	2	2	King Knight 8	8	5	3
King Rook 8	6	5	1	King Rook 8	3	2	1
Total Black....	45	35	10	--	45	35	10
Total							
Queen Rook 8	18	17	1	Queen Rook 8	17	14	3
Queen Knight 8	11	8	3	Queen Knight 8	11	10	1
Queen Bishop 8	10	7	3	Queen Bishop 8	14	9	5
Queen 8	9	8	1	Queen 8	7	7	0
King 8	8	6	2	King 8	5	5	0
King Bishop 8	8	8	0	King Bishop 8	9	9	0
King Knight 8	12	10	2	King Knight 8	17	14	3
King Rook 8	13	12	1	King Rook 8	9	8	1
Total.....	89	76	13	--	89	76	13

Table 8. Queening and Castling, by Color and by Side of Board, in 70 Master Chess Games: 1867-1970^{a/}

Queening Games	Castling King	Side Queen	Did Not Castle	Game Total
<u>Only by White</u>				
On King Side.....	11	2	3	16
On Queen Side.....	10	1	2	13
Total.....	21	3	5	29
<u>Only by Black</u>				
On King Side.....	7	3	1	11
On Queen Side.....	11	1	5	17
Total.....	18	4	6	28
<u>By White and by Black</u>				
On King Side.....	12	0	0	12
On Queen Side.....	11	3	0	14
Total.....	23	3	0	26 ^{b/}

a/ In 6 games, queening by the same side occurred twice. The scored queening (2 by white and 4 by black) has been omitted from this table.

b/ The total of 26 queenings represents 13 games because white and black queened in the same game.