

CLOCK CHESS 89

PCW SERIES

SPECTRUM PLUS 3 DISC

SPECTRUM 48K CASSETTE

CP SOFTWARE

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If you experience difficulty loading Clock Chess 89, please return your disc to CP Software for our immediate attention.

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CLOCK CHESS 89

AMSTRAD PCW, SPECTRUM 48K, SPECTRUM PLUS 3

The descriptions that follow apply specifically to the PCW versions. Modifications to the Spectrum versions are detailed at the end of this manual.

INTRODUCTION

1. GENERAL

CLOCK CHESS 89 is the strongest and most versatile chess program yet, with the most advanced 3-D graphics and the widest range of features available, many of which have never been implemented before on a home computer.

CLOCK CHESS 89 has a massive 44,000 byte library of opening moves, and the unique feature of allowing the user to extend this library with extra opening moves.

CLOCK CHESS 89 does not use the usual "brute force" method of searching for its best move, but instead is packed with chess knowledge which uniquely allows it to search only those moves which are "sensible" or "interesting" and not to waste time alysing lines of play which it regards as "trivial". It has a variable search depth which results in a deeper search of active lines, thus reaching those parts that other chess programs cannot.

CLOCK CHESS 89 is incredibly fast, and you can determine the level of play by setting its response time in many different modes to give literally thousands of possible levels. A special "easy" level is provided for beginners.

CLOCK CHESS 89 will even predict your next move and then use your move time to consider its response.

CLOCK CHESS 89 has been tested against a wide range of other chess programs and has shown itself able to beat them all.

CLOCK CHESS 89 has a full display of its thought processes giving you an exclusive insight into its search mechanism.

CLOCK CHESS 89 perfectly understands all the rules of chess, including underpromotion, draw by repetition and draw by fifty move rule. It can also achieve all the standard mates, in particular those occuring with minor pieces in the endgame and is well able to handle difficult pawn promotions.

With simple cursor controlled move input and every possible

feature, Clock Chess 89 is the ideal program for beginner and expert alike.

CLOCK CHESS 89 was written after the release of the PCW 9512 and is fully compatible with this version of the PCW as well as the PCW 8256 and PCW 8512.

2. LOADING INSTRUCTIONS

PCW VERSION. Switch your PCW off then on again. Insert the CP/M master disc (side 2 of the system discs). After CP/M has loaded you will see the prompt A> Remove the CP/M master disc and insert the "chess" disc Type: CHESS (RETURN) Type "N" when you see the query "Do you want to use your own Openings Library (Y/N) ?"

SPECTRUM PLUS 3 VERSION. Press the RESET switch, insert the chess master disc and press ENTER.

SPECTRUM 48K VERSION. After switching the computer on, insert the cassette, type LOAD "" ENTER.

3. COPY PROTECTION

Like most commercial software CLOCK CHESS 89 has been protected against un-authorized copying. You are strongly advised never to write to the original master disc as this may interfere with the copy-protection scheme used. Any files that you wish to save should be written to another back-up disc.

4. QUICK GUIDE TO PLAYING A GAME

CLOCK CHESS 89 has such an extensive range of features that we recommend you begin by using the simple mode of operation described in this section.

From the main menu, select option (1) - new game.

To the query "Enter time:" type a number between 5 and 999, this will be the approximate time (in seconds) that CLOCK CHESS 89 will think before making its move.

To the query "Play Black or White:" type either B or W for your choice of colour. The computer will play the other side.

You will now see displayed the chess board and chess clock set

up as if you were playing in a chess tournament.

Entering your move can be done in two ways:

a. By cursor control - use the arrow keys to move the cursor arrow onto the desired 'origin' square and press the (ENTER) key, then move the cursor arrow onto the desired 'destination' square and press the (ENTER) key to execute your move. In case a. you can edit your entry by using the (DELETE) key.

b. Type in your move using the conventional algebraic system, e.g. E2E4 or G1F3 etc. If your entered move is illegal a short beep will be heard, and you will be invited to re-enter a correct move. Beginners will find this feature invaluable.

The game continues until one side is checkmated or stalemated.

CLOCK CHESS 89 IN DETAIL

1. THE MAIN MENU

OPTION 1. "NEW GAME"

This starts a new game and prompts you to set the levels, by giving the computer a time limit to play to (which does not affect the time you have to think in - unless you so choose)

If you type: a number from 5-999 (RETURN) this will give the computer a time limit in seconds to which it must keep its average length of move. The greater the time you allow, the stronger will be its level of play. The computer will average each move over time over twenty move intervals, sometimes exceeding the time limit and sometimes playing faster, but its average time will be as you have entered. This is the mode that should be used for tournament play or for testing the program, as in this mode the program makes the most effective use of the time available.

You can interrupt the program's search and force it to move immediately by holding down the STOP key (BREAK key on Spectrum).

E - is for beginners and will select "easy mode" where the program is deliberately handicapped.

M - will tell the computer to make its average move time match yours, thus if you take a minute to move, so will the computer, if your game slows down (or speeds up) CLOCK CHESS 89 will adjust its playing time accordingly.

A- (followed by a number from 5-999) will give the computer a fixed time limit for each move it plays. It differs from the first entry above in that averaging over each twenty moves is not used.

P (followed by 1,2,3 or 4) - sets the program into problem mode to find mates in 1,2,3 or 4. CLOCK CHESS 89 is extremely fast in this mode and has been able to show several standard chess problems to be "cooks" or faulty in that several mating lines were possible. Use "analyse mode" to set up a problem position, (see OPTION 2).

This option has been deleted from the 48K Spectrum version.

C- "Play against the clock" is an unique option that allows for five minute blitz games with true tournament realism - you will be asked a time limit in seconds for (1) the program and (2) yourself to play an entire game. Overstepping this limit will lose the game.

I- Infinite mode, the program will think until either:

- a. you tell it to stop (hold down the STOP key)
- b. it completes its search at maximum depth
- c. it runs out of memory to store the tree of moves

This mode would be useful for playing correspondence games by leaving the program overnight (or longer) to find the best move.

S- Supervisor mode, allows you to play against a human opponent, the program will supervise and not allow any illegal moves.

OPTION 2. "ANALYSE POSITION"

This is used to set up positions or to handicap a game by removing a piece for example. Follow the program prompts to add or remove pieces from the board.

During the query "Which square:" you could, instead of entering

the algebraic square co-ordinate (E2 or F6, for example), enter:

Z (RETURN) to clear the entire board

I (RETURN) to reset the full board

X (RETURN) to return to the main menu.

The game will now start again, unless you have created an illegal position, in which case you will remain in analyse mode until a legal position has been restored.

OPTION 3. "SPECIAL OPTIONS MENU"

1. Blindfold game

If you feel confident enough this option allows you to play the old game of "Kriegspiel" where either side's pieces are invisible.

1. Display all pieces
2. Display white pieces only
3. Display black pieces only
4. Display no pieces
5. return to main menu

2. Desirability of drawn game

Often one only needs a draw to win a series of games. This feature allows you to select the desirability of a draw from the point of view of the program. On loading, Clock Chess defaults to Case 4, playing for a draw if it senses it is more than half a pawn down. You may select the following alternatives:

1. Draw almost as bad as a loss
2. Play for draw if two pawns down
3. Play for draw if one pawn down
4. Play for draw if half a pawn down
5. Play for draw if position is level
6. Play for draw even if half a pawn up
7. Play for draw even if one pawn up
8. Play for draw even if two pawns up
9. Draw almost as good as a win
0. Exit to main menu

3. Exit to main menu

OPTION 4. "LIST OPTIONS AT YOUR MOVE"

Entering your move can be done in two ways:

a. By cursor control - use the arrow keys to move the cursor arrow onto the desired "origin" square and press the (ENTER) key, then move the cursor arrow onto the desired "destination" square and press the (ENTER) key to execute your move. In case a. you can edit your entry by using the (DELETE) key.

b. Type in your move using the conventional algebraic system, e.g. E2E4 or G1F3 etc.

To castle, enter the king's move only.

For en passant, enter your pawn's move.

To resign or quit, press X.

Check will be indicated by the + sign after the move description.

Promotion - moving a pawn to the back rank will cause the program to query whether you wish to promote to a queen, rook, bishop or knight.

Instead of moving you can choose any of the following options:

Y - Turn ON/OFF program thinking during your move

K - Turn ON/OFF display of predicted moves

L - Reset the time (level) of play

X - Return to main menu

P - Make program play next move, this has the effect of swapping sides

R - Program will recommend your next move (but not during the opening)

V - Display up to 62 previous moves, either on the printer (PCW only) or the screen

O - Inverts board orientation (if playing black, for example)

S - Self play (program plays itself) until STOP key is pressed

I - Inverts the screen colour such that the dot matrix printer screen dump comes out the "right" way round (PCW only)

Z - Displays the board co-ordinates in algebraic notation

Q - Disables the beeper signal, Q again will re-enable it

T - Will take back one move - note: obviously, this also swaps sides

This menu is not displayed on 48K Spectrum.

OPTION 5.

With this option you can save your current game to disc, or load a saved game from disc.

IMPORTANT: you should not use the write-protected program master disc for this purpose as this may cause the disc copy protection to fail.

This option is not valid for the 48K Spectrum version.

OPTION 6.

Takes you back to the current game after using another option.

OPTION 7.

Lists the previous 62 moves of the game to the screen or printer.

PCW VERSION PROGRAM INFORMATION

CLOCK CHESS 89 is packed with chess knowledge which uniquely allows it to search only those moves which are "sensible" or "interesting" and not to waste time analysing lines of play which it regards as "trivial". As a result Clock Chess 89 is able to extend its search depth more rapidly than other programs using the old-fashioned and wasteful brute-force method. Additionally, Clock Chess has a variable search depth which results in a deeper search of active lines, *thus reaching those parts that other chess programs cannot.*

Author: Chris Whittington BA

Language: Z80 assembler

Development system: Atari ST, Memotech SM1

Chess code size: 48K

Graphics code size: 12K

Move storage: 5K

Lookup tables: 48K

Opening book: 44K

Middle game tournament search depth: 5-11 ply (average)

Nodes examined per second: 1000 (average)

Estimated rating: 2000+ ELO (170+ BCF)

SCREEN INFORMATION

CLOCK CHESS 89 has a comprehensive factual display to enhance your enjoyment and study of the game.

For the PCW versions at the top left of the screen is the 3-D Chess Clock that tells you the elapsed time of both sides during the game. This can also be set so you can "Play against the clock" (see OPTION 1).

The digital clock displays both the elapsed time and the current move time for both black and white.

The Spectrum Plus 3 version has both 3D and 2D screen display options. You can flip between these using the key '9'.

The Spectrum 48K version uses a 2D screen with digital clock.

I like ... is the program telling you of the current best move it has found during the search.

Score ... is how the computer thinks it is doing, based on its evaluation of the position. A positive score indicates that it is winning. The scale used values a pawn at 32 points.

Nodes ... is the count of positions so far evaluated.

My move ... is the programs move.

Move ... is the move number so far reached in the game.

Plymax ... is the current average depth of search, the number of moves ahead that the program is looking. Beneath that is the current best line of play which the program predicts. (To disable, see OPTION 4).

Set at ... is the time you have selected for the program to play its moves.

Trying ... is the time the program has decided it will work to on this particular move.

Your last move remains displayed at the bottom of the screen while the program thinks.

RESULTS

CLOCK CHESS 89 has been tested against a wide range of other chess programs and has shown itself able to beat them all.

During program development, games were played against other programs, on various levels, with an equal number of whites and blacks for each program. One point was awarded for a win, half a point for a draw and no points for a loss.

CLOCK CHESS 89 beat the following programs:-

Program	Publisher	Hardware	Result
Clock Chess 88	CP Software	PCW	6-4
Cyrus 2 Chess	Amsoft	PCW/CPC	8-2
3D Clock Chess	CP Software	PCW	9-1
Superchess 3.5	CP Software	Spectrum	9-1
Colossus 4 Chess	CDS	PCW/CPC/Spec	9-1
Psi Chess	The Edge	Spectrum	10-0
Grandmaster	Audiogenic	CBM64	10-0
Psion Chess	Psion	Spectrum	10-0
MasterChess	Amsoft	CPC Amstrad	10-0
MasterChess	Microgen	CPC Amstrad	10-0
Spectrum Chess	Artic	Spectrum	10-0
Chess - the Turk	OCP	Spectrum	10-0

Of course, the results cannot be guaranteed precisely in every set of games. In practice they are bound to vary either way, but they do give a very good guide to the relative strength of the programs.

EXTENDING THE OPENINGS LIBRARY - VALID FOR PCW VERSIONS ONLY.

CLOCK CHESS 89 for PCW already has a massive 44K byte openings library, but for those users who wish to experiment in this field, we have included a feature to allow this library to be extended, perhaps to include the latest opening lines from championship matches. We recommend that you only make use of this feature if you have some knowledge of word-processor usage and ideally of copying files using the CP/M program PIP.COM, (refer to your Amstrad manuals).

On the program disc you will find the text file USERBOOK.TXT, this contains some example opening lines. These openings are read in by CLOCK CHESS 89 and added to the 44K openings library already in the program.

You may have noted the query "Do you want to use your own Openings Library (Y/N) ?" when loading the program. If you answer 'Y' to this prompt, the program will wait for you to insert your own disc containing the file USERBOOK.TXT which you have created yourself. These openings are then added to the openings library normally used by the program.

You should not edit the text file on the original master disc, as this may cause the disc copy protection to fail. Instead PIP the file USERBOOK.TXT onto a back-up disc and work from that. Alternatively, you could create a new text file USERBOOK.TXT using your word-processor.

You can edit this text file using a standard editor (ED.COM on the CP/M master disc or WordStar in non-document mode, for example. Note that Locoscript will not do, unless you can use it to produce an ascii file).

It is very important that you stick to the rules below when editing the opening book file.

CLOCK CHESS 89 expects to find opening data in the format:
E2E4 G8F6 E4E5 F6D5 C2C4 D5B6 D2D4
E2E4 G8F6 E4E5 F6D5 C2C4 D5B6 C4C5 etc. etc.

Note: Algebraic notation

- Upper case

- Space character between moves

- Each line terminated by CR-LF (RETURN)

- No other characters or data permitted

- No leading CR-LF characters (first line must be algebraic data)

- There is a twenty-five ply (half-move) limit to the size of each line

- CR-LF stands for Carriage Return-Line Feed and is simply the result of pressing the RETURN/ENTER key

If you don't follow these rules, we don't vouch for the result.

If you have entered illegal moves, the program will simply ignore them.

The maximum size of your text file is 16K bytes, any more will be ignored. Please refer to CP Software if you wish to include a library in excess of this memory limit.

DIFFERENCES BETWEEN PCW AND SPECTRUM VERSIONS.

Clock Chess 89 was written originally for the Amstrad PCW which has at least 256K memory available. The program has been converted for the Spectrum Plus 3 (128K memory and smaller screen) and Spectrum 48K. Modifications forced by the reduced memory available have been chosen so as to maintain the playing strength of the program at all times.

Spectrum Plus 3 modifications.

1. The opening library has been changed to 32K (still ten times larger than competing programs!) and the option to load a user library deleted.
2. In order to display the large amount of on-screen information a 2D screen is added together with a flip 2D to 3D facility.

Spectrum 48K modifications.

1. The opening library has been reduced (although it is still larger than competing programs) and a 2D display substituted.
2. The menu options remain the same but various text menus have been shortened and you are advised to refer carefully to the manual for full information about the options.
3. The special problem solve facility has been deleted. However, problems can still be run through using the normal move search facility.
4. Features relating to disc save and load operations have been deleted.
5. The 'Take back move' history has been limited to ten moves.

INSTRUCTIONS

CLOCK CHESS 89 en 3-D
PCW 8256, 8512, 9512

INSTRUCTIONS DE CHARGEMENT

Remettez à zéro la mémoire de votre PCW.

Insérez la disquette CP/M.

Lorsque le CP/M est chargé, vous devez voir s'afficher l'invite A>

Retirez la disquette CP/M et insérez dans le lecteur la disquette CLOCK CHESS 89.

Tapez ECHECS (RETURN)

Tapez "N" lorsque vous voyez s'afficher le message: "Voulez-vous utiliser vos propres ouvertures ?"

GUIDE RAPIDE POUR JOUER UNE PARTIE

CLOCK CHESS 89 a tellement de possibilités que nous vous recommandons, au début, de suivre les indications données ci-dessous:

Lorsque vous êtes dans le Menu Principal, sélectionnez l'option (1) "Nouvelle partie".

A la question "Mise à l'heure", tapez un chiffre entre 5 et 999 (c'est le temps approximatif, en secondes que CLOCK CHESS 89 utilisera pour jouer son coup). A la question "Jouez Blanc ou Noirs ?" tapez "B" ou "N" pour choisir votre couleur, l'ordinateur jouera avec l'autre couleur.

Vous verrez alors s'afficher un échiquier en 3 dimensions, ainsi que les horloges, comme si vous participiez à un véritable tournoi.

Vous avez deux possibilités pour entrer un coup:

a) par les touches de déplacement: déplacez le curseur jusqu'à la case "d'origine" puis appuyez sur la touche ENTER. Déplacez à nouveau le curseur grâce aux touches fléchées jusqu'à la case "destination" et appuyez sur ENTER. La pièce se déplace. Vous pouvez faire afficher votre coup en utilisant la touche DEL.

b) par la notation algébrique conventionnelle, par ex. E2E4 ou G1F3.

Si vous jouez un coup illégal, vous entendrez un bip et le programme vous invitera à entrer un coup correct.

La partie continue jusqu'à ce que une des couleurs soit échec et mat ou que l'on aboutisse à un pat.