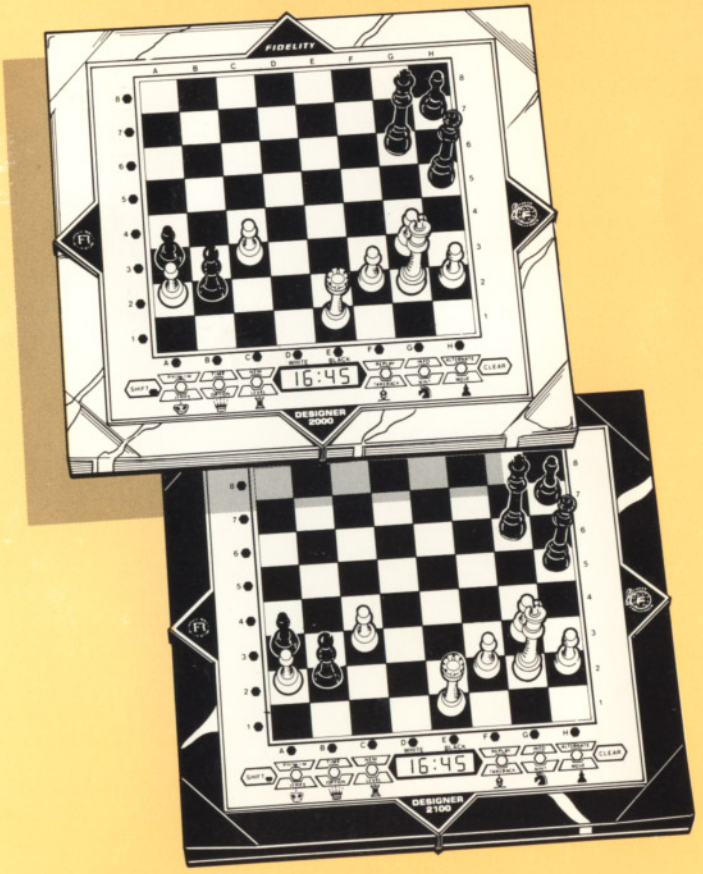
DESIGNER DISPLAY CHESS CHALLENGER

OWNER'S MANUAL
INSTRUCTION BOOKLET

MODEL 6105



MODEL 6106

THIS LIMITED WARRANTY APPLIES ONLY TO FIDELITY PRODUCTS PURCHASED IN THE UNITED STATES

LIMITED 90-DAY WARRANTY

Fidelity International warrants to the orginal consumer purchaser that its products are free from any electrical or mechanical defects for a period of ninety days from the date of purchase. If any such defect is discovered within the warranty period, Fidelity International, will repair or replace the unit free of charge upon receipt of the unit which has been sent insured and postage prepaid to the factory address shown below.

A PURCHASE RECEIPT OR OTHER PROOF OF DATE OF ORIGINAL CONSUMER PURCHASE WILL BE REQUIRED BEFORE WARRANTY PERFORMANCE IS RENDERED.

This warranty covers normal consumer use and does not cover damage which occurs in shipment or failure which results from alteration, accident, misuse, abuse, neglect, wear and tear, inadequate maintenance, commercial use, or unreasonable use of the unit. Removal of the top panel voids all warranties. This warranty does not cover cost of repairs made or attempted outside of the factory.

Any applicable implied warranties, including warranties of merchantability and fitness, are hereby limited to ninety days from date of purchase. Consequential or incidental damages resulting from a breach of any applicable express or implied warranties are hereby excluded. Some states do not allow limitations on the duration of implied warranties and do not allow exclusion of incidental or consequential damages, so the above limitations and exclusions in these instances may not apply.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

The only authorized service center in the United States:

Fidelity International
13900 N.W. 58th Court
Miami, Florida 33014
(305) 557-9800

If you ship the unit, carefully pack and send it prepaid, adequately insured and preferably in the original carton. Include a letter, detailing the complaint inside the shipping carton with a telephone number where you may be reached during business hours.

If your warranty has expired and you want a service fee quote, write to the above address specifying the model, and requesting a service quotation. DO NOT SEND YOUR GAME with your request for quotation, as Fidelity has no provisions of holding your game from service while waiting for your reply.

INSTRUCTION MANUAL
FOR
Fidelity Model 6105 - Designer 2000 Display
Fidelity Model 6106 - Designer 2100 Display

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INTRODUCTION

It has been our intention with this product to provide you with a value beyond comparison - a truly excellent chess program with sleek styling. We feel confident that this microprocessor-based chess opponent will challenge and delight you now and for years to come.

Fidelity's state-of-the art technology provides you with an amazing computerized opponent that plays chess with skill and cunning, yet allows you to control the level of difficulty. The sensory playing surface enables the computer to automatically sense all game moves. Battery operation allows you to play against this chess opponent wherever you desire. The built-in display provides additional features for you to select from and enables the computer to communicate more information to you than nondisplay models.

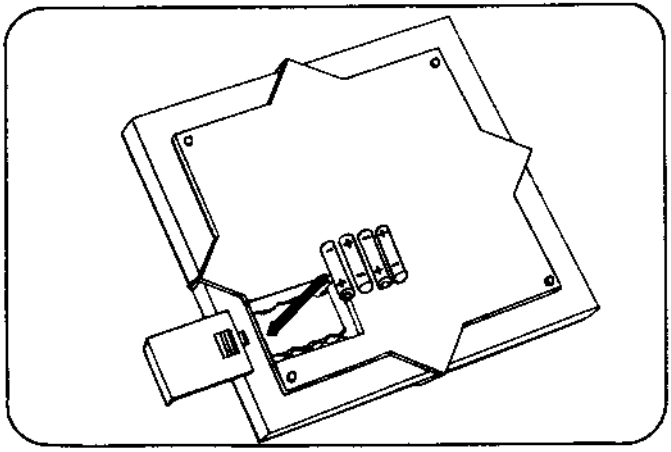
Your enjoyment of the computer will be greatly enhanced if you familiarize yourself with SECTION ONE of this Owner's Manual first before attempting to engage the special features or getting up board positions. The instructions which follow help you understand how to operate the computer and how to play your first game.

SECTION I–BASIC OPERATION

1.1 BATTERY INSTALLATION/REPLACEMENT

To install or replace batteries:

1. Be sure that the optional transformer (if applicable) is unplugged from the unit.
2. Locate the battery compartment on the underside of the unit and slide the battery cover clear of the guide notches in the case.
3. Remove and discard old batteries.
4. Ensure that the battery clips are clean and rust-free.
5. Install four (4) "AA" size alkaline batteries.
6. Replace battery cover.



1.2 LOW BATTERIES

If the computer appears to be behaving erratically or signalling impossible/illegal responses, this is a sign of low battery power and the batteries should be replaced.

1.3 AC OPERATION (OPTIONAL)

For AC operation, plug the transformer into an AC wall outlet and plug the transformer line cord into the game.

Depending upon how frequently you play, you may wish to purchase the optional AC transformer available for this product. DO NOT USE ANY OTHER TRANSFORMER THAN THE

FIDELITY TRANSFORMER DESIGNED SPECIFICALLY FOR THIS PRODUCT. FAILURE TO DO SO CAN CAUSE DAMAGE TO THIS PRODUCT WHICH WILL VOID THE WARRANTY. If you have difficulty locating a Fidelity transformer locally, an order form is provided in this manual for your convenience.

1.4 BOARD DIAGRAM

(1) BOARD LEDS (LIGHT EMITTING DIODES): ONE LED ADJACENT TO EACH NUMBER AND ONE LED ADJACENT TO EACH LETTER. COMPUTER WILL LIGHT ONE NUMBER LED AND ONE LETTER LED TO INDICATE COORDINATES OF SQUARE IT WANTS TO MOVE A PIECE FROM OR A PIECE TO.

(2) COLOR LEDS: NOT ONLY USED TO SHOW COMPUTER'S MOVE ON D AND E FILES, BUT ALSO TO INDICATE WHICH SIDE IS CURRENTLY AT PLAY (WHITE OR BLACK). IF YOU ARE WHITE AND IT IS YOUR TURN TO MOVE, THE WHITE (D) LED WILL FLASH. IF THE COMPUTER IS BLACK AND IT IS BLACK'S TURN TO MOVE, THE BLACK (E) LED WILL FLASH.

FUNCTION KEYS:

(3) SHIFT KEY: THIS KEY CONTAINS LED TO INDICATE IF SHIFT IS ACTIVATED. IF ACTIVATED, THE RED (OR UPPER) KEY FUNCTIONS MAY BE USED. TO USE THE BLACK (OR LOWER) KEY FUNCTIONS, PRESS CLEAR KEY TO DEACTIVATE SHIFT LED.

(4) KEY SENSOR LOCATED HERE: REGARDLESS OF WHICH KEY FUNCTION YOU ACTIVATE (RED OR BLACK), PRESS THE CENTER OF KEY TO ENGAGE THAT FUNCTION.

(5) VERIFY/PROBLEM KEY: PRESS CENTER OF KEY TO VERIFY POSITION OF CHESS PIECES. ACTIVATE SHIFT KEY (SHIFT LED IS LIT) AND PRESS CENTER OF KEY TO ENTER PROBLEM MODE. (FOR SETTING UP MIDGAME POSITONS OR PROBLEMS).

(6) OPTION/TIME KEY: PRESS CENTER OF KEY TO ENTER OPTION MODE. ACTIVATE SHIFT KEY (SHIFT LED IS LIT) AND PRESS CENTER OF KEY TO DISPLAY TOTAL TIME USED FOR THE PLAYER ON THE MOVE.

(7) LEVEL/NEW KEY: PRESS CENTER OF KEY TO SELECT AND CHANGE LEVELS OF PLAY. ACTIVATE SHIFT KEY (SHIFT LED IS LIT) AND PRESS CENTER OF KEY TO START A NEW GAME.

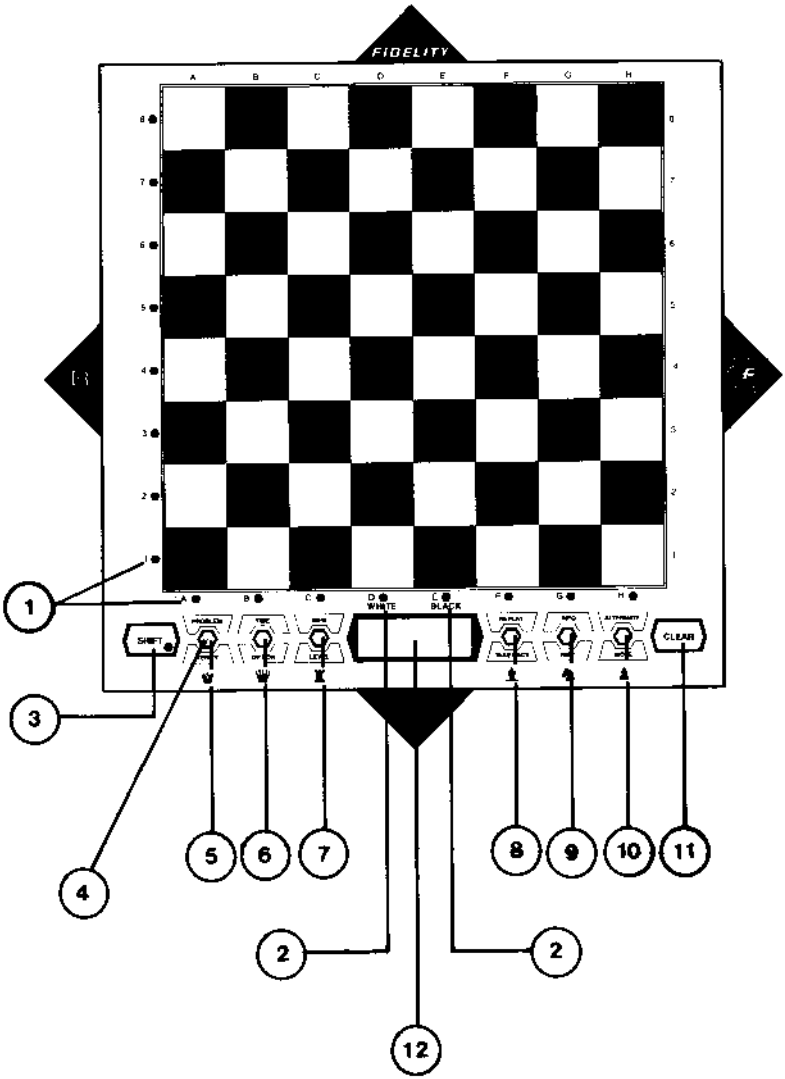
(8) TAKE BACK/REPLAY KEY: PRESS CENTER OF KEY TO ACTIVATE FEATURE USED TO TAKE BACK MOVES. ACTIVATE SHIFT KEY (SHIFT LED IS LIT) AND PRESS CENTER OF KEY TO REPLAY THE LAST GAME.

(9) HINT/INFO KEY: PRESS CENTER OF KEY TO DISPLAY A SUGGESTED MOVE. ACTIVATE SHIFT KEY (SHIFT LED IS LIT) AND PRESS CENTER OF KEY TO DISPLAY INFO CONCERNING COMPUTER'S LAST MOVE.

(10) MOVE/ALTERNATE: PRESS CENTER OF KEY TO CHANGE SIDES WITH THE COMPUTER, WATCH THE COMPUTER PLAY BOTH SIDES, OR FORCE THE COMPUTER TO STOP THINKING AND MAKE A MOVE. ACTIVATE SHIFT KEY (SHIFT LED IS LIT) AND PRESS CENTER OF KEY TO OBTAIN COMPUTER'S "NEXT BEST" MOVE.

(11) CLEAR KEY: PRESS TO DEACTIVATE SHIFT KEY; USED TO CANCEL ILLEGAL MOVE INDICATION OR TO CLEAR A "FROM" SQUARE BEFORE YOU MOVE TO THE "TO" SQUARE; USED TO EXIT FROM OPTION MODE AND PROBLEM MODE.

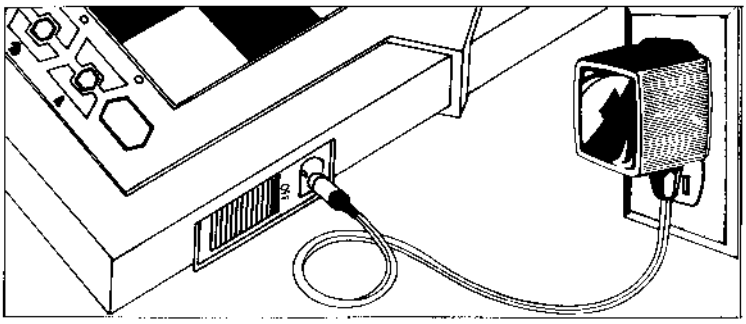
(12) 4-CHARACTER LCD (LIQUID CRYSTAL DISPLAY): USED TO DISPLAY A MYRIAD OF INFORMATION AT YOUR REQUEST.



1.5 POWER ON

Set the ON/OFF switch ON. If optional Fidelity transformer is being used, see 1.3.

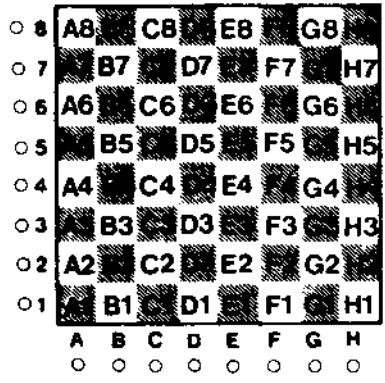
A new game is started when you first turn power on or when the NEW GAME Key is pressed.



When the game is first plugged in, the unit will beep a five-note scale, and the LED labeled WHITE will be flashing. As described in the board diagram, Section 1.4, this LED indicates that it is White's turn to move (in this case, to make the first move to start the game). At this point, none of the options or special features are in effect. A new game is always started when power is turned on, and turning the power off and on again resets the program to pre-game conditions and removes all previously selected options.

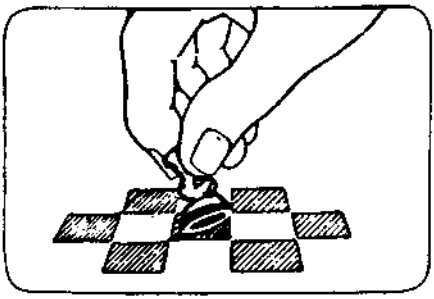
1.6 THE GAME BOARD

Set up the chess pieces with the White pieces at the bottom of the board. Each square on the chess board is designated, in accordance with international chess notation, by a letter of the alphabet designating the vertical rows (the files), and a number designating the horizontal rows (the ranks). At the beginning of a game the white King is on square E1, and the black King is on square E8.



1.7 HOW TO ENTER MOVES

Playing chess against your computer is like playing with a human opponent--you make your move and the computer responds with its move. The obvious difference, of course, is that you must make the actual physical move of the pieces for the computer.

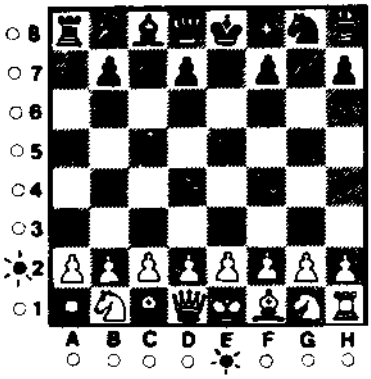


To make a move, tilt the piece and press gently on the center of the square using the edge of the piece. Press first on the FROM square, then on the TO square.

1.8 YOUR FIRST MOVE

The following example will help you to start your first game with the computer.

Let's say you have chosen to move your white pawn located on square E2 (at intersection of file E and rank 2) to the E4 square:

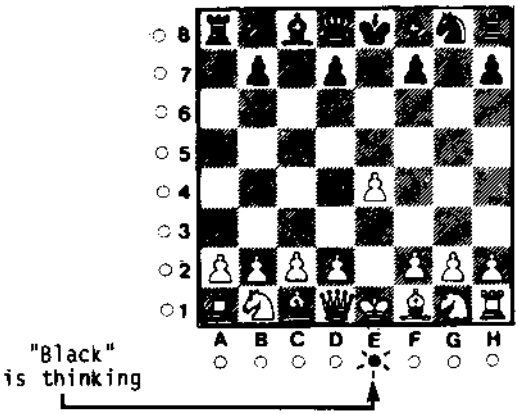


STEP #1

First tilt the pawn and press on square E2, LEDs for file E and rank 2 will light up as shown. Therefore, the E2 square is selected.

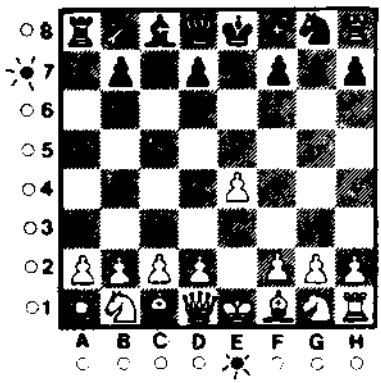
STEP #2

Pick up the pawn on E2, tilt the piece and press on square E4 (the E and 2 LEDs will go out). The computer, at that instant, has recorded the move you made, and has begun to think about its move. (In this example, the computer will respond instantly, so you may not even see the "BLACK" LED flashing.)



STEP #3

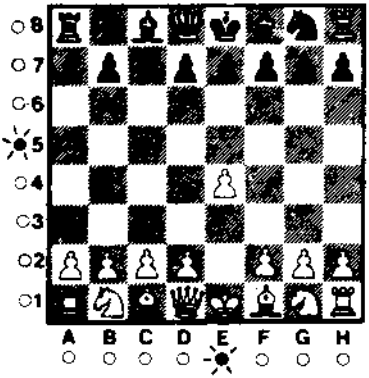
The computer will show you its move by lighting two LEDs for its FROM square. (We have selected the E7 square for



this example - you may get a different response). The file E and rank 7 LEDs are lit.

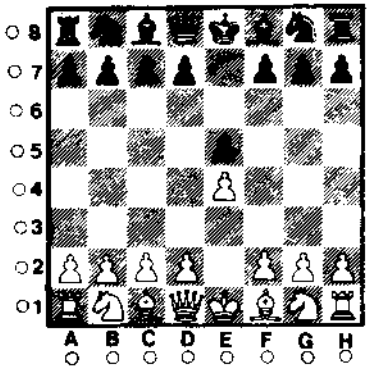
STEP #4

Press down on the black pawn at square E7. The FROM lights will go out and two different LEDs will show you the TO location for that pawn. (We have chosen the E5 square for this example.)



STEP #5

Pick up the black pawn on the E7 square, tilt the piece, and press down on the E5 square. The TO lights will go out, and it is time for your next move.



For each move, remember the three basic steps: PRESS, MOVE, AND PRESS AGAIN.

NOTE: You may notice that, when moving YOUR piece, the TO square LEDs DO NOT light, but when moving the

computer's piece, the LEDs for the TO square DO light. The reason for this is that once you have moved your piece to the TO location, the computer is instantly informed of your move, and there is no need for lights. On the computer's move, the TO square is lit to show you where to place the computer's piece.

1.9 ACCIDENTAL WRONG MOVE

If you press down on a piece and the FROM square is lit, but you decide not to make that move, press the CLEAR KEY, which will also turn the LEDs off, and allow you to enter another move of your choice.

If you change your mind after you have entered a whole move (FROM and TO squares) then the computer has accepted your move and is already considering its countermove. In this case, simply press the TAKE BACK key, and the computer will guide you through the takeback (See Section 2.9).

1.10 ILLEGAL MOVE

The computer will only allow moves that are in compliance with the rules of chess. Illegal moves are not accepted. The computer notifies you of an illegal move or error by beeping a double tone and flashing the LEDs corresponding to the FROM square which was pressed. To undo the error, you have several options:

1. Pick up that piece and press it down on the square you actually intended to move it to; or,

2. Press the piece back down on the flashing FROM square (the LEDs indicating that square will go out), and then enter another move; or,

3. Press the CLEAR KEY to turn the LEDs off and put the piece back down on its original FROM square. Then enter another move of your choice.

IMPORTANT NOTE: Method #3 does not insure that the incorrectly moved piece has been returned to its original location, but rather leaves it up to you to replace the piece correctly.

Please note the following circumstances, which will also cause the computer to beep an illegal move indication:

1. Pressing down on a piece of the wrong color (e.g., it is white's turn and you press down on a black piece).
2. Pressing down on the wrong square when making the computer's move on the board (e.g., the

computer lights the LEDs for square D8 and you inadvertently press down on square D7).

3. Pressing down on a empty square without having first pressed down on a piece which can move to that square.

1.11 EN PASSANT

The computer will capture a pawn 'en passant' whenever it determines that such a move is desirable, and it will also recognize when you choose to move 'en passant'. When performing an 'en passant' capture, the computer will first indicate the pawn move in the usual way, by lighting LEDs for the FROM square and then the TO square. Then it will light LEDs to indicate the square of the captured pawn, to remind you to remove the pawn from the board. Simply press down on the captured pawn and take it off the board.

1.12 CASTLING

The computer will castle by first performing a King move and then a Rook move. First, the King move must be acknowledged in the usual manner by pressing the FROM square and the TO square. Then the Rook move must be acknowledged by pressing its FROM and TO squares.

You may castle your King in a similar manner by first pressing down on the King's FROM square and then its TO square. At this point, the computer will recognize that you wish to castle, and will light the LEDs for the Rook's move to prompt you to move that piece.

Remember that castling is a King move. If you attempt to castle by moving your Rook first, the computer will acknowledge the Rook's move and immediately begin thinking. To recover from such a mistake, use the TAKE BACK feature to take the Rook move back (see Section 2.9).

1.13 PAWN PROMOTION

As in a normal game of chess, when a pawn reaches the eighth rank, it may be promoted to a higher-valued piece (usually a Queen). Once you have entered the pawn's move to the eighth rank, the LED for that square will flash (and [-Pr-] will appear in the display window) until you identify your promotion selection by pressing the key next to the picture of the piece you wish to promote to (i.e. to promote the pawn to a queen, press the OPTION key after the lights begin to flash awaiting your choice). As soon as you make your selection, the LEDs for that square will go out and the computer will start thinking about its next move.

If one of the computer's pawns reaches the eighth rank, the computer will evaluate its present position and will promote its pawn to the piece it feels will be of most

value. Since this will occur automatically, you may wish to use VERIFY mode to identify the promoted piece.

1.14 CHECK AND MATE

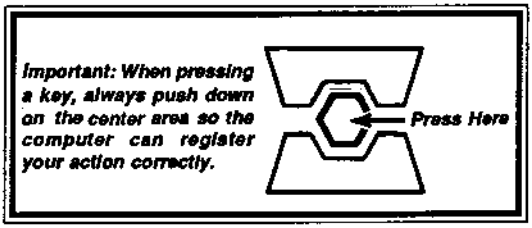
Any time there is a check situation on the board, the display will show a dot in its center (d 1.d 5) below the area where the colon sign (:) normally appears.
If the computer determines that you will soon be mated, it will show (n x) in the display window (X=number of moves until checkmate). Press CLEAR to see the computer's move. Once the computer's mating move is entered, the display window will read (n).

If you checkmate the computer, the display window will read (- n).

SECTION II–SPECIAL FEATURES

2.1 SHIFT

Just as a shift key on a typewriter will activate upper case letters, the SHIFT key on your computer will select the upper (or red) key functions. If the SHIFT LED is lit, any red key functions may be selected. If the SHIFT LED is unlit, any lower (black) key functions may be selected. WHETHER THE SHIFT LED IS LIT OR UNLIT, ALWAYS PRESS ON THE CENTER OF THE KEY TO SELECT THE DESIRED FUNCTION. See illustration below: IMPORTANT: When pressing a key, always push down the indicated area so the computer can register your action correctly.



2.2 PROBLEM (SHIFT LED LIT)

By activating the PROBLEM function (-Pb- will appear in the display), you will enter PROBLEM MODE. PROBLEM MODE is used to make changes--to remove or add pieces during a game; to relocate pieces from one square to another; or to set up problems for the computer to work out. Using PROBLEM MODE you can alter the board set-up at any time before or during a game You can, for example, change the direction of the game, strengthen your side or the computer's, resurrect lost pieces, or even move your King out of an imminent checkmate situation. You can also set up mate puzzles for the computer to solve using MATE-FINDER levels.

While you are in PROBLEM MODE, the function keys become chess piece selector keys. Each function key is used to select the type of chess piece that is pictured beneath it.

You may enter PROBLEM MODE whenever it is your turn to move. To learn how to use this feature, try the following drill:

1. Activate NEW (shift LED lit) and set up the pieces in their initial positions.

2. Activate PROBLEM (-Pb- appears in display) to

enter Problem Mode.

3. Now activate the key above the pawn (♟) symbol. Note that the 2 LED and the A-H LEDs are all lit steadily. This indicates that all White pawns occupy squares A2-H2. Press the key above the pawn symbol again, and the 7 LED will be lit, with the A-H LEDs flashing. This shows that all Black pawns occupy squares A7-H7.

4. Press square H7. Note that the H LED goes out. By pressing down on this flashing square, you have erased the Black pawn from that square. Pressing square H7 once more will turn the H LED on steadily. Now a White pawn occupies that square. Pressing square H7 a third time will cause the H LED to flash, indicating a Black pawn now occupies square H7.

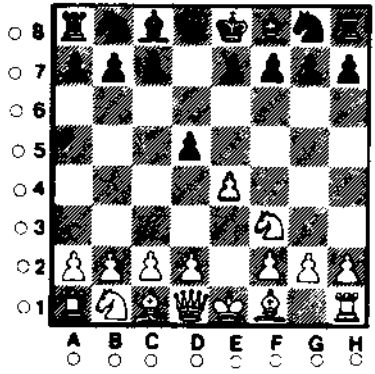
By the above illustrations, it can be seen that:

An unlit file LED means no piece of that type occupies the square in that rank.

A steadily lit file LED means a WHITE piece of that type occupies the square in that rank.

A flashing file LED means a BLACK piece of that type occupies the square in that rank.

Before using this feature to create your own positions, familiarize yourself with Problem Mode by performing the following steps to set up the sample board position picture below:



1. Repeat steps 1 and 2 above (-Pb-) appears in display.

2. Activate the key above the pawn ♟ symbol. Note that the 2 LED and the A-H LEDs are all lit steadily.

3. Press down on the White pawn located at square E2. (E LED will flash). Press the E2 square, again, and the LED will go out. You have now erased a pawn from the E2 square.

4. Move the White pawn to square E4 and press down. The 4 and E LEDs will light steadily. The computer has now recorded a White pawn on the E4 square.

5. Press the key above the pawn symbol again. (7 LED is lit and A-H LEDs are flashing). Press the Black pawn on square D7 (the flashing D LED will go off). You have now erased the pawn on D7. Move this Black pawn to square D5 and press down. (The D an 5 LEDs will light steadily). Press down on the D5 square again, and the D LED will flash. The computer has now recorded a Black pawn on square D5.

6. Press the key above the Knight (♞) symbol. Note that the 1, B and G LEDs are steadily lit to show the location of White Knights.

7. Press down on the White Knight located at square G1 (the G LED will flash). Press down on square G1 again (the G LED will go off). The computer has now recorded that square G1 is unoccupied.

8. Move the White Knight to square F3 and press down on that square. (The F and 3 LEDs will light steadily). The computer has recorded a White Knight located on the F3 square.

9. Press CLEAR to exit Problem Mode.

By completing the above steps, you have successfully entered the position pictured above into the computer's memory.

If you are to play the first move from the recorded position (regardless of which color is to move first), simply make the move after exiting Problem Mode. If the computer is to play the first move, activate MOVE.

If the position you want to record in the computer's memory involves only a few pieces (as opposed to a rather full board, as in our example) refer to the CLEAR BOARD option G1 in Section 3.

2.3 VERIFY (SHIFT LED UNLIT)

VERIFY enables you to verify the positions of all pieces--both white and black--at any time before or during a game, or whenever it is your turn to move. To verify the position of any piece type, first activate VERIFY (display window shows [Pb]) Press the key above the picture of the piece type you are interested in (e.g. to verify the position of rooks on the board, activate VERIFY and then the key above the ♜ symbol). Each time you press one of the piece symbol keys, a new row (rank) LED is lit and column (file) LED(s) light to show where a piece is located in that rank. If the piece is White, the file LED(s) lights steadily. If the piece is Black, the file LED(s) flashes. For any given piece symbol selected, the computer will automatically only show you the ranks which are occupied by one or more of those pieces you are looking for. Unoccupied ranks will be skipped over. If there are no pieces of that type on the board at all, only the 8 LED in the upper left-hand corner of the board will light to indicate this. By repeating this process for each piece type, every piece on the board can be correctly located. To return to normal play, press CLEAR.

2.4 TIME (SHIFT LED LIT)

By activating the TIME function, the display will show the total amount of game time taken by the player to move. If the computer is thinking and TIME is activated, the display shows the total amount of time used by the computer in the game thus far. If it is your turn to move and you activate TIME, the display will show total amount of time used by you in the game thus far. To differentiate between a display of minutes/seconds versus hours/minutes the computer will display a dot to the lower right of the window if hours/miutes is being shown. If minutes/seconds is being displayed, this is easily identified by the seconds portion of the display continuously changing.

2.5 OPTION (SHIFT LED UNLIT)

As the OPTION function is activated, the display will show [-0P-]. See Section III for an explanation of the various game options from which you may select.

2.6 NEW (SHIFT LED LIT)

Activating NEW returns all pieces back to their initial starting positions and the computer is ready to begin a new game of chess. Please note, however, that if you have just finished a game and you have made any level and/or

option selections, these selections WILL REMAIN IN EFFECT for the next game if you only activate NEW. This function is, therefore, especially handy for those of you who tend to select the same options for most games--in this respect, the NEW function will provide you with an easy shortcut.

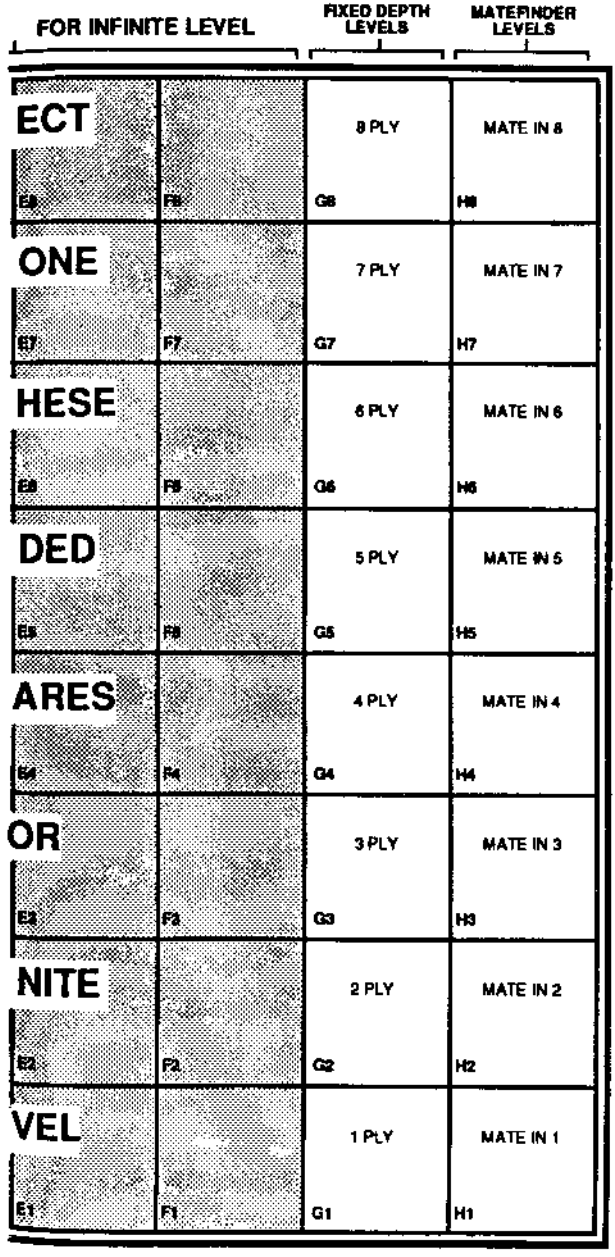
NOTE: To start a new game WITHOUT the previous level or game options selected (FULL RESET), activate OPTION (shift LED unlit) KEY AND THEN ACTIVATE NEW (shift LED lit). By doing this, you are erasing all previous entries and options and starting a completely new game (same as turning the computer off and turning it back on again). NOTE: Whether you are turning the computer on or using the Full Reset Option, the computer will always be set on Level A1, and the pieces will be returned to their initial starting positions.

2.7 LEVEL (SHIFT LED UNLIT)

Your computer has 24 levels of play for you to choose from. Level A1 is automatically selected when the computer is first turned on. The first time you activate LEVEL, (LEA1) will appear in the display to confirm this. To select an alternate level, activate LEVEL and press down on the appropriate board square. For your reference, a diagram of the board squares used to activate each level is shown with brief descriptions inside each square. A more detailed explanation of the various levels follows the diagram.

2.7.1 CHART OF PLAY LEVELS

PRESET LEVELS Avg. Time/Move Total Number Moves/Time	COUNTDOWN LEVELS	SELECT ANY SQUARE	
AVG. RESPONSE 3.5 MINUTES 40/2.5 HOURS A8	3 HOURS PER SIDE B8	C8	D8 SEL
AVG. RESPONSE 3 MINUTES 40/2 HOURS A7	2 HOURS PER SIDE B7	C7	D7 ANY
AVG. RESPONSE 2 MINUTES 30/60 MINUTES A6	1 HOUR PER SIDE B6	C6	D6 OF T
AVG. RESPONSE 1 MINUTE 60/60 MINUTES A5	30 MINUTES PER SIDE B5	C5	D5 SHA
AVG. RESPONSE 30 SECONDS 60/30 MINUTES A4	20 MINUTES PER SIDE B4	C4	D4 SQU
AVG. RESPONSE 15 SECONDS 60/15 MINUTES A3	15 MINUTES PER SIDE B3	C3	D3 F
AVG. RESPONSE 10 SECONDS 60/10 MINUTES A2	10 MINUTES PER SIDE B2	C2	D2 INF
AVG. RESPONSE 5 SECONDS 60/5 MINUTES A1	5 MINUTES PER SIDE B1	C1	D1 LE


FOR INFINITE LEVEL
FIXED DEPTH LEVELS
MATEFINDER LEVELS
ECT
E8
F8
8 PLY
G8
MATE IN 8
H8
ONE
E7
F7
7 PLY
G7
MATE IN 7
H7
HESE
E6
F6
6 PLY
G6
MATE IN 6
H6
DED
E5
F5
5 PLY
G5
MATE IN 5
H5
ARES
E4
F4
4 PLY
G4
MATE IN 4
H4
OR
E3
F3
3 PLY
G3
MATE IN 3
H3
NITE
E2
F2
2 PLY
G2
MATE IN 2
H2
VEL
E1
F1
1 PLY
G1
MATE IN 1
H1

2.7.2 PRESET LEVELS (A1-A8)

Playing levels with preset time controls may be selected by activating LEVEL, one of the A file (A1-A8) squares and CLEAR. For your convenience, the chart of playing levels shows the average response time for each of the preset levels within the appropriate square (i.e. select square A1 for an average response time of five seconds per move), and the overall time control the computer is using (i.e. square A1 will make 60 moves within five minutes).

2.7.3 COUNTDOWN LEVELS (B1-B8)

Playing levels with preset total times for each side may be selected by activating LEVEL, one of the B file (B1-B8) squares and CLEAR. These levels start at the total time for each player and count down to zero time. If either player should run out of time before checkmate is achieved, the display will flash to indicate time forfeit for the player with zero time remaining. While using one of these levels the computer's display will split into two 2-digit clocks so time for both sides may be viewed simultaneously (first minutes are counted down and then seconds will appear during last minute).

NOTE: If you activate Game Option H1 (Countdown Clock) while using one of these levels, the clock will show only one player's time remaining (while it is that player's turn to move) in a 4-digit format. This enables the player to see the more exact time that remains for his side, because seconds will also be shown. For more information, see Section 3.8.

2.7.4 FIXED DEPTH LEVELS (G1-G8)

Fixed depth levels may be selected by activating LEVEL, one of the G file (G1-G8) squares and CLEAR. On these levels the only preset condition is the computer's ability to look ahead. For example, level G2 restricts the computer's look ahead to two plies or two half-moves (one half move = one move for one player). As you utilize the fixed depth levels you will always know how far ahead your opponent is analyzing its next move. Using these levels can train you to improve your ability to see further into a game and you can measure your success by your number of wins!

2.7.5 MATE-FINDER LEVELS (H1-H8)

Mate-finder levels may be selected by activating LEVEL, one of the H file (H1-H8) squares and CLEAR. These levels allow you to set up mate problems for the computer to solve. For example, if you set up a problem and want the computer to search for a mate in 6 moves, set the computer to level H6. On this level the computer will search for a

mate in 6 moves. If a mate in 6 is found, the display will show (n 6). Press CLEAR to see the move and enter it. At this point 1) If you would like to see an alternate mate-in-6 solution, activate ALTERNATE (shift LED is lit) before entering the computer's move and it will search for an alternate solution, OR 2) if you want to see the computer's next move or the mate it has already found, activate level H5 (because the problem is now a mate in 5) enter the opponent's move and the computer will display the next move to mate, OR 3) if no mate is found, the display will show (- n n -).

2.7.6 INFINITE LEVEL

To select Infinite level, activate LEVEL and any board square in files C, D, E, or F. This level allows the computer unlimited time for each move. The computer will continue to search, looking deeper and deeper until it finds a forced mate or until the search is halted by you. When halted, the computer will make the best move it has found thus far in its search. You can halt the computer's thinking at any time by activating MOVE. If you would like to see how deep the computer is searching before you force it to respond, see Section 4.2.

2.8 REPLAY (SHIFT LED LIT)

At any point during a game or at the end of a game you may take back all moves played and see them replayed (unless NEW is activated, which will erase the computer's memory) by activating REPLAY. Once REPLAY is activated, the board LEDs will light up the FROM square of the first move in the game and the coordinates of that move will also appear in the display. Enter the move indicated and the second move of the game will be shown in the same fashion. As each move is entered, the computer will display the next move played. At the end of the move sequence, the computer will emit a series of beeps.

If you have taken back moves and decide you would like to see one or more of them replayed, see 2.11 HINT.

2.9 TAKE BACK (SHIFT LED UNLIT)

The Take Back function allows you to take back any move you make or any move made by the computer. The computer will allow you to take back up to 256 half moves (128 moves per side) in a single game! To use this feature, simply activate TAKE BACK when it is your turn to move, and the LEDs indicating the TO square of the last move will light. Press down on the indicated square, and the LEDs showing the FROM portion will light. Press that square, and the LEDs will go out. You have thus completed the take back of the computer's last move. At this point, you are permitted to enter an alternate move for the computer's side if you wish or take back your last move.

To enter an alternate move for the computer, enter the desired move as you normally would and proceed with your next move. To take back your last move, simply press the TAKE BACK key again and proceed as outlined above. You may effectively take back as many moves as you like using this procedure.

As you take back moves, the computer will remind you to return a captured piece to the board by lighting up the square LEDs of the previously captured piece. Return the captured piece to the board and press down on the indicated square. If you do not recall the identity of the captured piece, press down on the indicated square and use the VERIFY key to find out what type of piece belongs on that square.

To take back all moves played in a game thus far or an entire game, see 2.8 REPLAY.

2.10 INFO (SHIFT LED LIT)

As outlined in Section 4 ROTATING DISPLAY you may select specific information to be displayed while the computer is thinking. Whether you have selected display information or not, however, you may review all of this information after each of the computer's moves is displayed and entered on the board. Simply execute the computer's move and activate INFO. Each time you press INFO, the computer will indicate data concerning its last move. This information will appear in the order in which it is listed from left to right in Section 4 ROTATING DISPLAY (diagram). In this way, you can review the computer's calculations at the moment its move was decided on.

The only piece of information that you will not see that was available as part of the actual Rotating Display is the nodes per second display. This display of how many chess positions the computer is examining per second can obviously only be called up while the computer is actually thinking and examing moves.

2.11 HINT (SHIFT LED UNLIT)

If it is your turn to move and you would like the computer to suggest a move, activate HINT. The computer will indicate a suggested move in the display window. If you opt to make the suggested move, enter it as you normally would. If you decide to make a different move, simply make the move of your choice.

If you have taken back moves and decide that you would like to see them replayed, activating HINT key will cause the computer to indicate the last move taken back in the display window. Simply enter that move on the board and the computer will display the next move taken back. As you enter moves taken back, the computer will continue to display the next move until you have reached the last move

made in the game. At that point the computer will emit a series of beeps to signal that you have entered the last move played thus far.

If you decide to stop playing moves forward at some point before the last move made, stop entering moves at the desired position and press CLEAR to continue a regular game from that position. To see an entire game replayed, see 2.8 REPLAY.

2.12 ALTERNATE (SHIFT LED LIT)

If the computer has displayed its move and you would prefer to see it calculate an alternate move, DO NOT ENTER THE COMPUTER'S DISPLAYED MOVE. Instead, activate ALTERNATE. The computer will then calculate a different, or what it considers to be, the "next best" move. Keep in mind that it will make its alternate move calculation in accordance with the time or depth controls of the level selected. Even though the alternative move will replace the move displayed by the computer previously, the computer considers this an additional move for the purposes of internal timekeeping. If, therefore, the computer uses 1 minute to calculate its first move choice and an additional minute to calculate its second choice, it will record the use of 2 minutes for one move.

2.13 MOVE (SHIFT LED UNLIT)

If during a game you decide to change sides with the computer, activate MOVE when it is your turn to move. The computer will then take over your pieces and make a move. At this point you may enter a move for the computer's side and continue to play the same game. If you would like to watch the computer play against itself, activate MOVE, enter the move displayed and continue to repeat this procedure. Activating MOVE while the computer is thinking will force it to move instantly at any level.

2.14 CLEAR (SHIFT LED NOT APPLICABLE)

The CLEAR function has many uses:

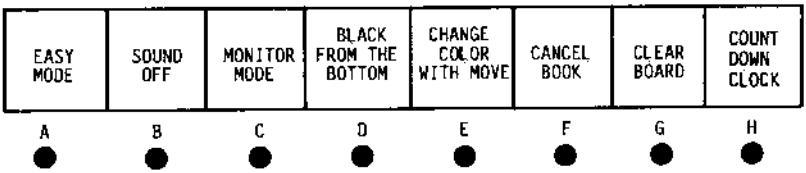
1. If you accidentally activate an unwanted FROM square, press CLEAR and you are free to activate the desired square.

2. Press CLEAR to erase illegal move indication.

3. Press CLEAR to exit Option Mode, HINT, Replay Mode, Problem Mode, Verify Mode, Level Select Mode and Time Display Mode.

SECTION III—GAME OPTIONS

In addition to the Keys and Special Features described previously, a number of additional options may be selected to enhance your enjoyment of the computer. The game options are user selectable (before the start of a new game or whenever it is your turn to move during a game), and can be activated by pressing various squares on the playing surface. When Option Select Mode is chosen by activating OPTION, normal game play is suspended and squares A1 through H1 are used to select options as illustrated below:



Activate OPTION to enter Option Select Mode. Whenever you are in this mode, the display window will read "-OP-". After activating OPTION, select the option(s) of your choice by PRESSING DOWN ON THE SQUARE DESIGNATED FOR THAT PARTICULAR OPTION. The LED below that square will light to confirm that you have selected that option. You may choose a number of options at the same time, as desired. After selecting your option(s), always press the CLEAR to exit Option Select Mode.

As each option is selected by pressing the desired square, the LED below that square will light to indicate the selected option. If you decide after selecting an option that you would rather not have that option in effect, simply press the option square again. The LED below it will go out to indicate that it is no longer in effect.

If you decide you want to cancel an option after you have already pressed CLEAR to exit Option Select Mode, simply activate OPTION again to get back into that mode. Note that the LEDs for OPTIONS A1, B1, C1, D1, or H1 are lit if they have been selected and are in effect. To cancel any of them, press the appropriate option square(s) and the LEDs in the square(s) will go out. Then press CLEAR to exit Option Select Mode. NOTE: This rule does not apply to Options E1,F1 and G1, because they represent either a one-time selection (Clear Board and Cancel Book) or an option which must be entered separately each time for it to take effect (Change Color). If either of these options was chosen by you, therefore, and you go back into Option Select Mode, their LEDs will NOT be on, even though they were selected.

3.1 SQUARE A1 - EASY MODE

Activate OPTION, Square A1 and CLEAR.
Easy Mode is an option which weakens all playing levels

without affecting the computer's time controls. This is accomplished by restricting the computer's use of its allotted time. Ordinarily, the computer will do some of its thinking on your time--while you are contemplating your next move. This feature is part of what makes your computer such a tough opponent. For example: If you set the computer on Level A1 to give it roughly five seconds per move, but you take two minutes to consider your move, and the computer guesses what you are going to play, the computer will have used the whole two minutes to think about its reply. You might as well have selected a higher level!

Selecting Easy Mode will prevent the computer from thinking on your time. Since this weakens all of the skill levels, you are thus given the option of having more playing levels to choose from.

3.2 SQUARE B1 - SOUND OFF

Activate OPTION, Square B1 and CLEAR.
For completely silent operation of the game, press Square B1 to select the Sound Off option. To turn the sound on again, go back into Option Select Mode and press Square B1 again. This option can be changed as often as desired during a game.

3.3 SQUARE C1 - MONITOR MODE

Activate OPTION, Square C1 and CLEAR.
This option allows humans to play both sides of the game, while the computer acts as referee checking each move for legality and keeping track of times taken per move by each player. Certain other features remain active during monitor mode as follows: TIME, REPLAY, TAKE BACK, and MOVE will also function, but after the computer makes the move, Monitor Mode will remain in effect. To exit Monitor Mode and continue playing the game against the computer, activate OPTION, SQUARE C1, and CLEAR. Then simply make your next move and the computer will respond as in a regular game.

3.4 SQUARE D1 - BLACK FROM THE BOTTOM

Activate OPTION, Square D1 and CLEAR.
Option D1 allows you to play with the black pieces set up at the bottom of the board. If you choose this option, be sure to set the pieces up correctly. Use VERIFY to be certain of where the pieces should be placed. Once you have verified proper piece locations, activate MOVE to make the computer start thinking. SWITCHING TO THIS OPTION DURING A GAME IS NOT ADVISED.

3.5 SQUARE E1 - CHANGE COLOR WITH MOVE

Activate OPTION, Square E1 and CLEAR.
This option is primarily used in conjunction with PROBLEM

Mode (see Section 2.2). After exiting Problem Mode, you may change the color to move by entering Option Select Mode and pressing Square E1.

3.6 SQUARE F1 - CANCEL TOURNAMENT BOOK

Activate OPTION, Square F1 and CLEAR.
Choosing option F1 locks out the computer's tournament opening book library. If this option is in effect, the computer will select from a greater variety of book opening lines. If this option is not activated, the computer will play only those opening lines it feels are best.

3.7 SQUARE G1 - CLEAR BOARD

Activate OPTION, Square G1 and CLEAR.
This option removes all the chess pieces from the board in the computer's internal memory, and is especially valuable for setting up problems that involve few pieces.

NOTE: After pressing CLEAR, the display window will show (d r) . You may now place the kings in their appropriate positions along with the other pieces of your choice using PROBLEM Mode (see section 2.2).

3.8 SQUARE H1 - CLOCK OPTION (FOR ALL LEVELS EXCEPT B1-B8)

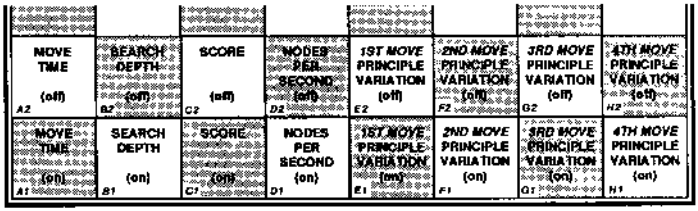
Activate OPTION, Square H1 and CLEAR.
This feature is especially handy if you play the computer at its higher levels and want to be able to walk away from the board for a few minutes. While this option is engaged, the computer will display the amount of total time it expects to take for the move, and COUNT DOWN the time instead of up. The computer knows the approximate amount of time it will allot itself based upon the level selected and, therefore, is able to tell you ahead of time approximately how long it will take to move. If the computer sees any major obstacles while searching for the best move, it may allot itself more time and the clock will change to reflect this.

Since levels B1-B8 are already countdown levels, activating H1 while using one of these levels will provide you a different option. Normally, the computer will display both players' time remaining using a "split clock" format (two-digit display for each player side by side) while using the countdown levels. If OPTION H1 is activated in conjunction with a countdown level, however, the clock will show only one player's time remaining (while it is that player's turn to move) in a four-digit format. In this way, the player can see the more exact time that remains for his side because seconds will also be shown.

SECTION IV: ROTATING DISPLAY

The built-in display window is provided to communicate additional information to you upon request. You will normally want to obtain this information while the computer is thinking, so that you can follow its thought and search processes as they take place. Therefore, in this section on the ROTATING DISPLAY, the phrase "while the computer is thinking" will be used over and over. This simply serves to remind you that this feature is only activated while the computer is thinking about its next move. If you wish to see the same information after the computer has made its move, you must use the INFO Key (see Section 2.10).

If you simply turn on the computer and begin to play, the display will automatically show time for the player to move while each side is thinking. To start up the Rotating Display during the computer's search, simply press down on one of the squares in the first rank while the computer is thinking. The following chart shows which squares to activate for the type of information which may interest you.



If, further into the game, you choose to deactivate a Rotating Display feature you selected earlier, simply press down on the appropriate square in the second rank (see chart) while the computer is thinking, and the Display will no longer show that particular information. If you have selected multiple display features, the information will be rotated in one-second increments. If you turn all of the display options off, the Display window will simply show two dots (. .), indicating that the computer is thinking, but none of the display options are currently on. The remainder of this section contains descriptions of each individual display feature.

4.1 DISPLAY MOVE TIME (SQUARES A1 - A2)

Since move time is automatically activated when the

computer is turned on, there is no need to activate A1 to select time initially. You may, however, wish to deactivate move time if you are using other display features and are not interested in the time display. To deactivate move time, press down on Square A2 while the computer is thinking. If you wish to reactivate this feature later in a game, press down on Square A1 while the computer is thinking.

4.2 DISPLAY SEARCH DEPTH (SQUARES B1 - B2)

If you would like to see how far ahead the computer is looking as it ponders a move, press down on Square B1 while the computer is thinking. The Display will show the ply (half-move) depth and the number of computer moves in that ply which have been examined thus far. For example, (12 3) means that the computer is currently examining the third ply and has reviewed 12 moves so far. To deactivate the search depth display, press down on Square B2 while the computer is thinking. If you wish to reactivate this feature later in a game, press down on Square B1 again while the computer is thinking.

4.3 DISPLAY SCORE (SQUARES C1 - C2)

If you would like to see the computer's opinion of the current board position, press down on Square C1 while the computer is thinking. The computer will display the current game score, with a positive number showing if the computer thinks it has the advantage, and a negative number showing if the computer feels that it is at a disadvantage. The numerical values indicate the extent of how good or how bad things are for the computer. Material scores are based roughly on the value scale of 100 points for a pawn, 300 points for a Knight or Bishop, 500 points for a Rook, and 900 points for a Queen. The score is also interpreted in terms of positional value-whether the computer considers its position good or bad. As an example, a display of (491) would indicate that the computer is up a Rook, and a display of (-103) indicates that the computer is down a pawn. To deactivate the score display, press down on Square C2 while the computer is thinking. If you wish to reactivate this feature later in a game, press down on Square C1 again while the computer is thinking.

4.4 DISPLAY NODES PER SECOND (SQUARES D1 - D2)

If you would like to see how many chess positions (nodes) the computer is examining per second, press down on Square D1 while the computer is thinking. The number displayed will usually be a four-digit number due to the speed at which the computer processes information. To distinguish this display from the score or other displays you may have activated, the nodes per second display is always shown with two dots. As an example, if the display is (2.25.6),

this means the computer is examining 2,256 nodes per second at that time. To deactivate the nodes per second display, press down on Square D2 while the computer is thinking. If you wish to reactivate this feature later in a game, press down on Square D1 again while the computer is thinking.

4.5 DISPLAY FIRST MOVE OF PRINCIPLE VARIATION (SQUARES E1 - E2)

If you would like to see the first move of the computer's principle variation (the line of play which the computer currently believes to be best), press down on Square E1 while the computer is thinking. To deactivate this display, press down on Square E2 while the computer is thinking. If you wish to reactivate this feature later in a game, press down on Square E1 again. NOTE: The first move of the principle variation is the move the computer is currently thinking of making.

4.6 DISPLAY SECOND MOVE OF PRINCIPLE VARIATION (SQUARES F1 - F2)

If you would like to see the second move of the computer's principle variation, press down on Square F1 while the computer is thinking. To deactivate this display, press down on Square F2 while the computer is thinking. If you wish to reactivate this feature later in a game, press down on Square F1 again.

4.7 DISPLAY THIRD MOVE OF PRINCIPLE VARIATION (SQUARES G1 - G2)

If you would like to see the third move of the computer's principle variation, press down on Square G1 while the computer is thinking. To deactivate this display, press down on Square G2 while the computer is thinking. If you wish to reactivate this feature later in a game, press down on Square G1 again.

4.8 DISPLAY FOURTH MOVE OF PRINCIPLE VARIATION (SQUARES H1 - H2)

If you would like to see the fourth move of the computer's principle variation, press down on Square H1 while the computer is thinking. To deactivate this display, press down on Square H2 while the computer is thinking. If you wish to reactivate this feature later in a game, press down on Square H1 again.

SECTION V
MATE AND DRAW ANNOUNCEMENT

The computer has the ability to announce forced mates against its opponent. In addition, the computer can recognize and claim three different types of draws: draw by stalemate, draw by the 50-move rule, and draw by three-time repetition. Please refer to the appropriate sections that follow for details regarding specific draw announcements.

5.1 DRAW BY STALEMATE

A game of chess is drawn by stalemate if the player whose turn it is to move has no legal moves, but his King is not in check. The computer claims this draw by displaying (d r) in the Display Window. If this occurs the game is over and cannot be continued. If desired, however, you may replay the game (see Section 2.8), take back moves (see Section 2.9), or change the position in Problem Mode (see Section 2.2).

5.2 DRAW BY THE 50-MOVE RULE

If 50 consecutive moves have been played in a game without either side having moved a pawn or captured a piece, a 50-move rule draw may be claimed by the side whose turn it is to move. If the computer detects that such moves have been made, it will claim a draw by displaying (d r 5 0) in the Display Window.

5.3 DRAW BY THREE - TIME REPETITION

If the same position occurs three times in a game of chess where the same side has the move each time, the game is drawn by repetition of position. If the computer is about to make a move that will result in the same position being repeated for the third time, it will display (d r C 3). If the computer recognizes that its opponent has made a move that results in a third repetition, it claims the draw by displaying (d r H 3).

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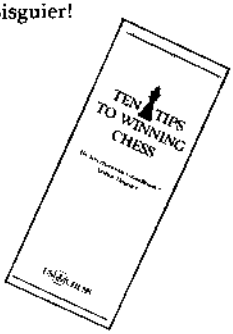

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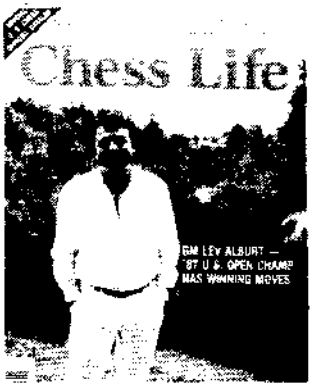

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