MASTER SERIES

OWNER'S MANUAL
INSTRUCTION BOOKLET

MODEL 6113

MODEL 6129

FIDELITY

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AVG.RESPONSE 3.5 MIN (40/2.5 HR) A8	3 HOURS PER SIDE B8	# MOVES REMAINING UNTIL TIME CONTROL C8	SELECT D8	E8	F8	8 PLY G8	MATE IN 8 H8
AVG.RESPONSE 3 MIN (40/2 HR) A7	2 HOURS PER SIDE B7	TIME REMAINING UNTIL TIME CONTROL C7	ANY ONE D7	E7	F7	7 PLY G7	MATE IN 7 H7
AVG.RESPONSE 2 MIN (30/60 MIN) A6	1 HOUR PER SIDE B6	SET TERTIARY # MOVES C6	OF THESE D6	E6	F6	6 PLY G6	MATE IN 6 H6
AVG.RESPONSE 1 MIN (60/60 MIN) A5	30 MIN PER SIDE B5	SET TERTIARY TIME C5	SHADED D5	E5	F5	5 PLY G5	MATE IN 5 H5
AVG.RESPONSE 30 SEC (60/30 MIN) A4	20 MIN PER SIDE B4	SET SECONDARY # MOVES C4	SQUARES D4	E4	F4	4 PLY G4	MATE IN 4 H4
AVG.RESPONSE 15 SEC (60/15 MIN) A3	15 MIN PER SIDE B3	SET SECONDARY TIME C3	FOR D3	E3	F3	3 PLY G3	MATE IN 3 H3
AVG.RESPONSE 10 SEC (60/10 MIN) A2	10 MIN PER SIDE B2	SET PRIMARY # MOVES C2	INFINITE D2	E2	F2	2 PLY G2	MATE IN 2 H2
AVG.RESPONSE 5 SEC (60/5 MIN) A1	5 MIN PER SIDE B1	SET PRIMARY TIME C1	LEVEL D1	E1	F1	1 PLY G1	MATE IN 1 H1

CHART OF PLAYING LEVELS

MOVE TIME A2	SEARCH DEPTH B2	SCORE C2	CURRENT MOVE BEING SEARCHED D2	1ST MOVE PRINCIPLE VARIATION E2	2ND MOVE PRINCIPLE VARIATION F2	3RD MOVE PRINCIPLE VARIATION G2	4TH MOVE PRINCIPLE VARIATION H2
EASY MODE A1	SOUND OFF B1	MONITOR MODE C1	BLACK FROM THE BOTTOM D1	CHANGE COLOR WITH MOVE E1	ALL OPENINGS F1	CLEAR BOARD G1	COUNT DOWN CLOCK H1

GAME OPTIONS (Squares A1 through H1)
and
ROTATING DISPLAY OPTIONS (Squares A2 through H2)

INTRODUCTION

Congratulations on your new chess playing partner. We at Fidelity Electronics, are extremely proud to bring you this chess computer, a unit which represents a giant step in today's computer chess technology. In July, 1988, at the World Open in Philadelphia, Pennsylvania, chess history was made when a microcomputer chess game earned a Master Rating. As the owner of the very same program which achieved this rating, you now have the opportunity to observe for yourself the knowledge, skill, and cunning inherent in the *Master*.

This chess computer is also loaded with features! The sensory playing surface enables the computer to sense and recognize each and every move you make, and it communicates its moves to you via a large, clear Display Window and LEDs which reference the board squares. Imagine being able to observe the computer's thought process—see the line of play it is considering, the score it gives any particular position, how deep it is searching. *How often have you wished that you could read your opponent's mind while he was thinking about his move—now you can!* And just think—in this case, you're reading the mind of a master!

And another thing—don't be afraid of it! Although your chess computer has a master rating, you need not be worried that you will never win a game. The *Master* allows you to set the level of play to that which is most comfortable for you. Thus, you can learn from your mistakes when you play against the *Master* on its tournament level, or you can delight in your own victories when you play against your computer opponent on a lower level! No matter what, though, you can be sure that the *Master* will turn out to be the most superb chess computer you have ever come up against!

Before you go on, a note regarding this manual: Although you might be tempted to delve right into exploring the *Master's* many special features and playing options, we recommend that you first familiarize yourself with SECTION ONE. Reading Section One first will help you understand how to operate the computer and how to play your first game. After that, go on to the other sections to explore all of the *Master's* other intriguing features.

And now, have fun!!

SECTION ONE: BASIC OPERATION

1.1 BATTERY INSTALLATION/REPLACEMENT
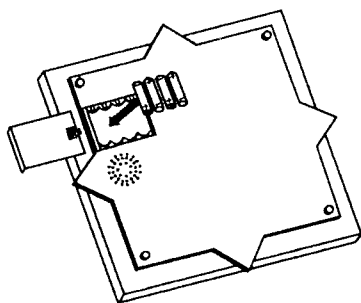
To install or replace batteries:

1. Be sure that the optional transformer is unplugged from the unit.
2. Locate the battery compartment on the underside of the unit, and gently slide the battery cover clear of the guide notches in the case, exposing the inner compartment.
3. Remove and discard old batteries.
4. Insure 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)

Depending on how frequently you play, you may wish to purchase the optional AC transformer available for this product. *Do not use any transformer other 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.

For AC operation, plug the transformer into an AC wall outlet and plug the transformer line cord into the game. Turn the unit on as described in Section 1.5.
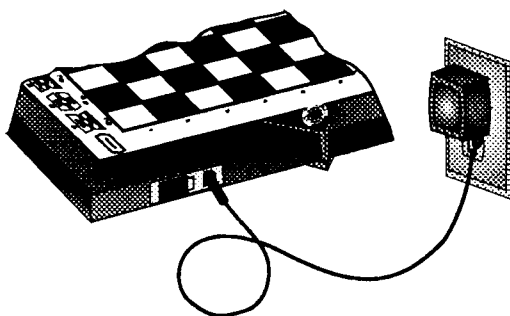
1.4 BOARD DIAGRAM

(1) **BOARD LEDS (LIGHT EMITTING DIODES):** One LED adjacent to each number and one LED adjacent to each letter. The computer will light one number LED and one letter LED to indicate the coordinates of the square it wants to move a piece *from* or move a piece *to*.

(2) **COLOR LEDS:** Used to indicate which side is currently at play (White or Black). Whenever it is your turn to move, the LED for your color will *light solidly*. Whenever it is the computer's turn to move, the LED for the computer's color will *flash* while the computer is thinking.

(3) **SHIFT KEY:** This key contains the LED to indicate whether or not the

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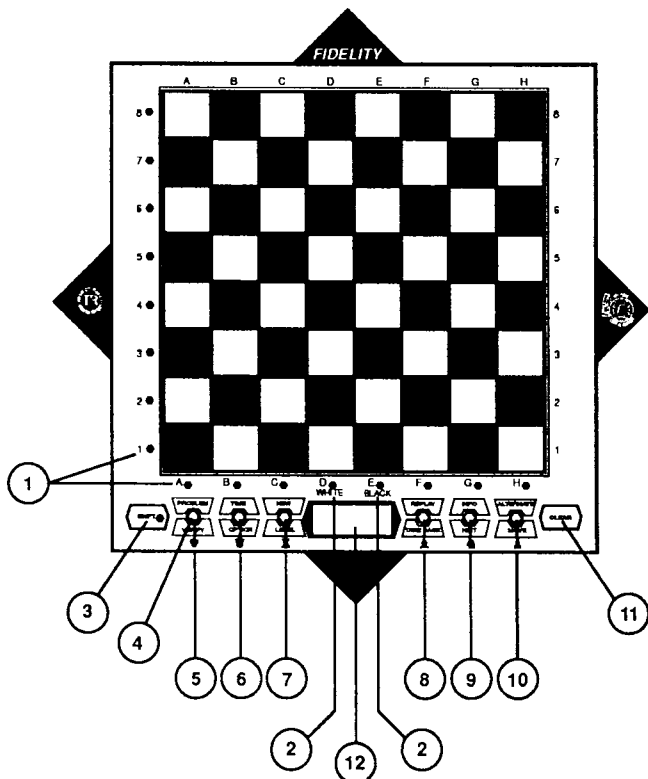
Shift function is activated. Pressing the **Shift** Key toggles the Shift LED on and off (pressing the **Clear** Key will also turn the Shift LED off). If the Shift LED is on, the Red (or upper) key functions may be used. If the Shift LED is off, the Black (or lower) key functions may be used.

(4) **KEY SENSOR** located here: Regardless of which key function you choose (Red or Black), always press the **center** of the key to engage the function.

(5) **PROBLEM/VERIFY KEY:** When the Shift LED is *on*, press the center of this key to enter **Problem Mode** (used for setting up midgame positions or problems). When the Shift LED is *off*, press the center of this key to **verify** the position of the chess pieces.

(6) **TIME/OPTION KEY:** When the Shift LED is *on,* press the center of this key to display **total time** used. When the Shift LED is *off*, press the center of this key to enter **Option Select Mode**.

(7) **NEW/LEVEL KEY:** When the Shift LED is *on*, press the center of this key to start a **new game**. When the Shift LED is *off*, press the center of this key to select and change **levels of play**.

(8) **REPLAY/TAKE BACK KEY:** When the Shift LED is *on*, press the center of this key to **replay** the last game. When the Shift LED is *off*, press the center of this key to activate the feature used to **take back** moves.

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(9) **INFO/HINT KEY:** When the Shift LED is *on*, press the center of this key to display **information** about the computer's last move. When the Shift LED is *off*, press the center of this key to display a **suggested move**.

(10) **ALTERNATE/MOVE:** When the Shift LED is *on*, press the center of this key to obtain the computer's **"next best" move**. When the Shift LED is *off*, press the center of this key to **change sides** with the computer, to **watch the computer play both sides**, or to **force the computer to stop thinking and make a move**.

(11) **CLEAR KEY:** Press to deactivate the **Shift** Key. Also used to cancel illegal move indication or to clear a *from* square before you move to the *to* square. Used to exit from Problem Mode, Verify Mode, Time Mode, Option Select Mode, and after choosing your playing level. Used to clear the display after the computer's mate and draw announcements.

(12) **FOUR-CHARACTER LCD (LIQUID CRYSTAL DISPLAY):** Used to display a myriad of information at your request.

1.5 POWER ON

Set the ON/OFF switch to ON. If the optional Fidelity transformer is being used, see Section 1.3, *AC Operation*.

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

When the game is first plugged in, the unit will beep, and the LED labeled WHITE will light (see 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. As you become more familiar with the operation of the computer, you will find that using the FULL RESET feature (see Section 2.6) is exactly the same as unplugging the unit and plugging it back in again, whereas using the **New** Key will start a new game but will retain 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 described, 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.

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To make a move, pick up the desired piece, tilt it, and use the edge of the piece to press down gently on the center of the square (see diagram). This tells the computer where you want to move the piece *from*. Now move the piece to its destination square (the *to* square), and press down on the center of that square in the same manner. The computer has now registered your full move.
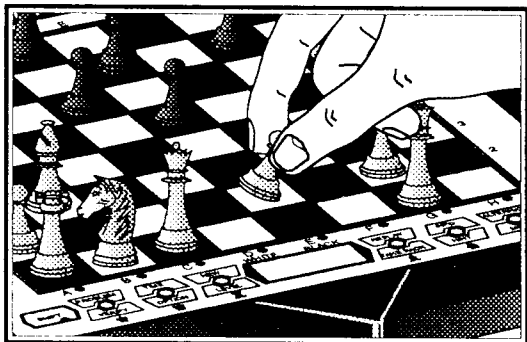
1.8 YOUR FIRST MOVE

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

Let's say that you have chosen to move your White pawn located on Square E2 (the intersection of File E and Rank 2) to Square E4 :

Step #1. First, tilt the pawn and press down on Square E2. The LEDs for File E and Rank 2 will light up as shown, indicating that Square E2 is selected.
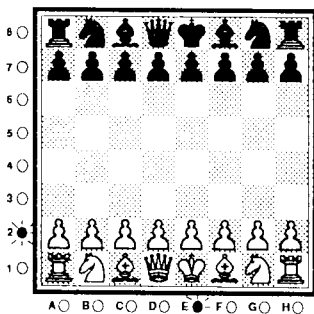
Step #2. Pick up the pawn on E2, tilt the piece, and press down on square E4 (the E and 2 LEDs will go out). The computer, at that instant, has recorded the move that you made, and has begun to think about its own move, flashing the BLACK (E1) LED to indicate that it is thinking. (In this example, however, the computer will respond instantly because it is playing from its opening book, so you may not even see the BLACK LED flashing.)

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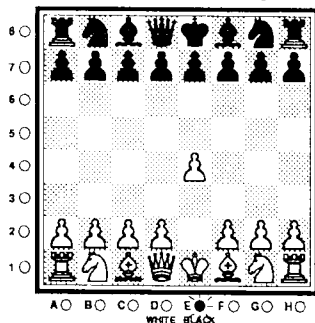
Step #3. The computer will show you its move by lighting two LEDs for its *from* square. *(We have selected the Square E7 for this example—you may get a different response.)* The File E and Rank 7 LEDs are lit.
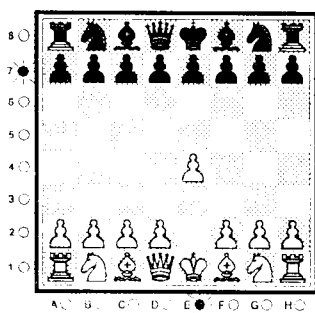
Step #4. Press down on the Black pawn on Square E7. The *from* lights will go out and two different LEDs will show you the *to* location for that pawn. *(We have chosen Square E5 for this example.)*
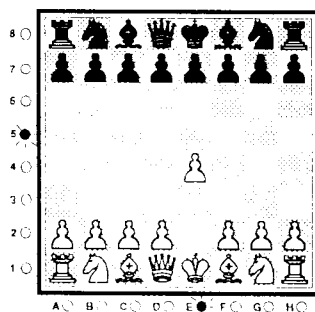
Step #5. Pick up the Black pawn on Square E7, tilt the piece, and press down on Square E5. The *to* lights will go out, and it is time for your next move as White (as indicated by the solidly lit WHITE LED).
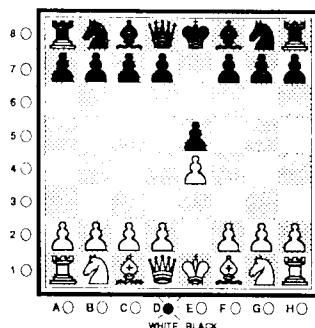
For each move, remember the three basic steps: PRESS, MOVE, and PRESS AGAIN.

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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 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 take back (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 and keeping the LEDs lit for 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 **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 an 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. After you have moved the pawn, LEDs will light 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.

Then press square and remove captured pawn

Move your pawn

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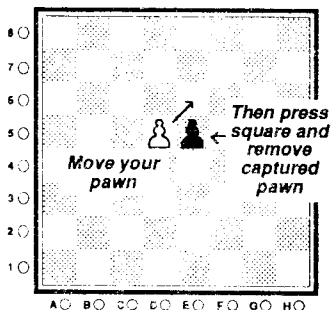
1.12 CASTLING

The computer will castle by first performing a King move and then a Rook move. To carry this move out on the board, first acknowledge the King move by pressing the indicated *from* square and *to* square. Then make the Rook's move by again pressing the indicated *from* and *to* squares.

You may castle *your* King in the same 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 make that move on the board.
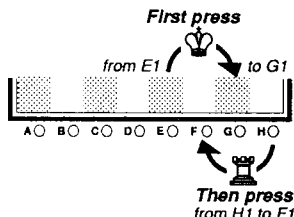
Caution: Remember that castling

First press

from E1 *to* G1

AO BO CO DO EO FO GO HO

Then press
from H1 to F1

is a King move. If you attempt to castle by moving your Rook first, the computer will accept the Rook's move and immediately begin thinking. To recover from such a mistake, use the **Take Back** feature to take the Rook's 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 LEDs for that square will flash (and (P r) will appear in the Display Window) until you identify your promotion selection by pressing the key above the picture of the piece you wish to promote to (i.e., to promote a 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** to identify the promoted piece (see Section 2.3).

1.14 CHECK AND MATE

Any time there is a check situation on the board, the Display will show a dot in the center below the area where the colon (:) normally appears.

If the computer determines that you will soon be mated, it will show (n x) in the Display Window (where x = the number of moves until checkmate). Press the **Clear** Key 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 will show (- n).

Note: Whenever the computer indicates a mate in the Display Window as described above, always press the **Clear** Key to clear the display.

1.15 BOOK OPENINGS

A *book opening* is a specialized series of moves that is used at the beginning of any chess game. If you have noticed that the computer seems to move very quickly at the beginning of the game, this is because the *Master* contains an Opening Book Library of over 28,000 opening positions from Grandmaster play. If the current board set-up is contained in the computer's library, it will play one of the proper responses to that position from its collection of moves and will not have to think about that move choice.

The computer will normally play only from its *Tournament Opening Book*—that is, it will play only those opening lines it feels are best. However, if you want

the computer to select from a *greater variety of book opening lines,* you may select the **All Openings** Game Option (see Section 3.6), which expands the Tournament Opening Book.

If you wish to cancel the computer's opening book, you may do so by following this procedure:

1. Press the **Level** Key and then press down on one of the Mate Finder Level squares (any square from H1 to H8).
2. Press the **Clear** Key.
3. Press **Level** again and press a square to select your desired playing level (for information on the computer's many playing levels, see Section 2.7).
4. Press **Clear** once more.

After following these steps, you will have effectively locked out the computer's opening book. When this occurs, the computer will have no opening library from which to draw its moves, so it will be forced to take time to think in order to determine its own best move from the beginning of the game.

1.16 THINKING ON THE OPPONENT'S TIME

The *Master* has the ability to think on its opponent's time, a function which improves playing strength on all levels. While the computer is making its move, you are able to use that time to analyze the position and think of a countermove to the move the computer might make. Similarly, the computer also thinks ahead while you are deciding which move to make. The computer does this automatically, whenever you are thinking about your move.

You may cancel thinking on the opponent's time by selecting the **Easy Mode** Option (see Section 3.1).

SECTION TWO: SPECIAL FEATURES

Many of the *Master's* special features are activated by the keys on either side of the Display Window. Each of these keys is dealt with in detail in this section of your manual. It is important to remember that, when pressing a key, **you should always push down on the hexagonal area in the middle of the key** so that the computer can register your action correctly.
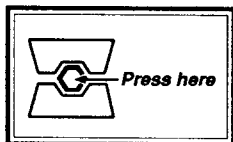
IMPORTANT NOTE: Before you begin using the *Master's* special features, you must understand how to correctly use the Shift Key. Since the Shift Key is used to access other keys, PLEASE BE SURE TO READ SECTION 2.1 BEFORE ATTEMPTING TO USE ANY OF THE FUNCTION KEYS.

2.1 SHIFT

The **Shift** Key is unique, in that its sole purpose is to allow you to access other keys in order to select their designated options. Just as a Shift Key on a typewriter will activate upper case letters, pressing the **Shift** Key on your computer will enable you to select the upper (red) key functions (the LED inside the **Shift** Key will be lit to indicate this). If the Shift LED is unlit, any of the lower (black) functions may be selected.

Important: Whether the Shift LED is lit or unlit, always press down on the *center* of the key to select the desired function.
Remember:
- A) If you want to use a key in the top row and the **Shift** light is **off,** you must press the **Shift** Key first.
- B) If you want to use a key in the top row and the **Shift** light is **on,** simply press the desired key.
- C) If you want to use a key in the bottom row and the **Shift** light is **on,** you must press the **Shift** Key first.
- D) If you want to use a key in the bottom row and the **Shift** light is **off,** simply press the desired key.

2.2 PROBLEM *(SHIFT LED should be LIT when using Problem Key)*

Pressing the **Problem** Key (⌐ P b ⌐) will appear in the Display), enables you to enter **Problem Mode**. **Problem Mode** is a feature which allows you to change the current board position or set up special board positions. You can alter the board set-up at any time before or during a game. This mode enables you to remove or add pieces, relocate pieces from one square to another; set up problems such as mate puzzles for the computer to work out; or start up (or continue) a game from a certain position. You can use these features to change the direction of a game, to strengthen your side or the computer's, to resurrect lost pieces, or even to move your King out of an imminent checkmate situation. To accomplish any of the above, you must enter **Problem Mode** by pressing the **Problem** Key.

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. With the Shift LED lit, press **New** for a new game, and set up the pieces on the board in their initial positions.
2. Press the Shift LED to turn the Shift light on, and press **Problem** (`-Pb-` appears in the Display) to enter **Problem Mode**.
3. Now, press 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 that 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 pictured below:

1. Repeat Steps 1 and 2 above (`-Pb-` will show in the Display Window).
2. Press 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 (the E LED will flash). Press Square E2 again, and the E LED will go out. You have now erased a pawn from Square E2.
4. Move the White pawn to square E4 and press down. The E and 4 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 (the 7 LED is lit and the A-H LEDs are flashing). Press the Black pawn on Square D7 (the flashing D LED will turn off). You have now erased the pawn on D7. Move this Black pawn to Square D5 and press down (the D and 5 LEDs will light steadily). Press down on Square D5 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 locations of the White Knights.

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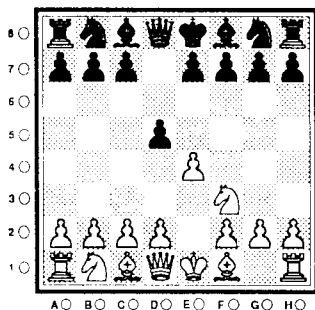
7. Press down on the White Knight located at Square G1 (the G LED will flash). Press down on Square G1 again (the G LED will turn off). The computer has now recorded that Square G1 is unoccupied.

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 now recorded a White Knight located on Square F3.

9. Press the **Clear** Key to exit **Problem Mode**.

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

If you want to change the color to move after exiting **Problem Mode** (e.g., the Black LED is lit, indicating that it is Black's turn to move, but you want to play a move for White), you must activate the *Change Color with Move* option (see Section 3.5).

Note: 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), you will probably want to clear the board of all pieces before you set up your position. To accomplish this, see Section 3.7 for details on Option G1, *Clear Board*. Also, for complicated positions, it is a good idea to verify piece locations after you have exited **Problem Mode**. For details on verifying positions, see Section 2.3.

2.3 VERIFY *(SHIFT LED should be UNLIT when using Verify Key)*

Verify enables you to verify the positions of all pieces—both White and Black—at any time before or during a game, whenever it is your turn to move. Thus, if you should accidentally knock some or all of the pieces off the board and you don't remember where they belong, the *Master* will be able to tell you where they were. To verify the position of any piece type, first press **Verify** (the Display Window will show ⟨ P b ⟩). Press the key above the picture of the piece type you are interested in (e.g., to verify the positions of Rooks on the board, press **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 LEDs light steadily. If the piece is Black, the file LEDs flash. For any given piece symbol selected, the computer will automatically only show you the ranks which are occupied by one or more of the pieces you are looking for. Unoccupied ranks will be skipped over. If there are no pieces of that type on the board at all, none of the LEDs will light.

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 should be LIT when using Time Key)*

Whenever the **Time** Key is pressed, the Display will show the total amount of game time taken by the player to move. Pressing **Time** again will show the total amount of game time taken so far by the player who is not currently moving.

Whenever you have the Time function activated, the colon in the display will flash to indicate this. To differentiate between a display of minutes/seconds versus hours/minutes, the computer will display a dot in between the third and fourth digits of the display if hours/minutes is being shown. If minutes/seconds is being displayed, this is easily identified by the seconds portion of the display continuously changing.

If you continue with your game after the **Time** Key is pressed without pressing **Clear** to end the Time display, the computer will continue to automatically show the total time in between each move. The total time displayed will switch back and forth between moves, always defaulting to show the total time of the player

who is currently moving. Pressing the **Time** Key will toggle between the times for the two sides. You may press the **Clear** Key at any time to cancel the total time display.

If you have any of the Rotating Display features selected, and you then choose the total time display with the **Time** Key, the total time display will override the Rotating Display function. The Rotating Display information will not show again until the **Clear** Key has been pressed at some point to turn the total time function off.

When using Playing Levels B1-B8 (the Countdown Levels), the **Time** Key display will show the time taken so far for the current move.

2.5 OPTION *(SHIFT LED should be UNLIT when using Option Key)*

The *Master* has many special Game and Display options which may be selected to enhance your enjoyment of the computer. These special options are user-selectable at any time during the game, and can be activated by pressing various squares on the playing surface.

When you press the **Option** Key, you enter **Option Select Mode**. You may now choose from two distinctly different sets of options. Pressing the **Option** Key will toggle between these two sets of options:

1. When the Display shows (0 P N S) , you may choose from various **Game Options** on Squares A1 through H1.
2. When the Display shows (d S P L) , you may choose from various **Rotating Display Options** on Squares A2 through H2.

After you have chosen your desired Game and/or Rotating Display options as described in Section Three, pressing the **Clear** Key will enter your choices into the computer and exit **Option Select Mode**. Whenever you go back into this mode again, the Display will default to the last set of options you were selecting from (e.g., if you were last selecting Rotating Display options, the next time you press **Option**, the Display will automatically show (d S P L)).

For a detailed description of the Master's Game and Rotating Display Options, see Section Three.

2.6 NEW *(SHIFT LED should be LIT when using New Key)*

A new game of chess may be started at any time—your current game may be over, or you may simply wish to abandon the current game and start another one. Pressing **New** returns all pieces back to their initial starting positions and the computer is ready to begin a new game of chess.

Note: When the **New** Key is pressed, any memory of a previous game is erased, but **all Level and Game/Rotating Display Option selections are retained and will remain *in effect* for the next game.** This feature 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/Rotating Display Options selected (**FULL RESET**), do the following:

1. *(Make sure the Shift LED is unlit)*   Press the **Option** Key.
2. *(Press the Shift LED to turn it on)*   Press the **New** Key.

By using the **Option/New** combination, 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 that whenever you turn the computer on or use **Full Reset**, the computer will always initially be set on Level A1, and the pieces will be returned to their original starting positions.

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2.7 LEVEL *(SHIFT LED should be UNLIT when using Level Key)*

Your computer has 33 levels of play from which you may choose. Level A1 is automatically selected when the computer is first turned on. The first time you press **Level**, ⟨L E A 1⟩ will appear in the Display to confirm this. To select a different level, press **Level** and press down on the appropriate board square. Press **Clear** to enter your level choice into the computer.

For your reference, a diagram of the board squares used to activate each level is shown, with brief level descriptions inside each square.

2.7.1 PRESET LEVELS *(Squares A1-A8)*

Playing levels with **preset time controls** may be selected by pressing **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).

2.7.2 COUNTDOWN LEVELS *(Squares B1-B8)*

Playing levels with **preset total times** for each side may be selected by pressing **Level**, one of the B file (B1-B8) squares and **Clear**. These levels start with the total time for each player and count down to zero time. While using one of these levels, the computer's Display Window will split into two 2-digit clocks so that time for both sides may be viewed simultaneously (first minutes are counted down, and then seconds appear during the last minute). 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. At this point, you may continue the same game at the same level (note that the Display will continue to flash for the side which time forfeited), or you may press **Level** to choose a new playing level (this will allow you to continue the game on another level, and the Display will no longer flash).

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 on the Countdown Clock option, see Section 3.8.

2.7.3 USER SELECTABLE TIME CONTROL *(Squares C1-C8)*

The **User Selectable Time Control** function allows you to set your own specific time controls, wherein a certain number of moves must be completed within a certain time limit (e.g., 40 moves in two hours). The selected time limitations apply for both you and the computer—that is, if you have two hours for 40 moves, then the computer also has two hours for 40 moves.

As in typical tournament play, if the specified number of moves is completed before the end of the allotted time, a second time limit is set if the game is not yet over and, if needed, a third block of time is allowed. These time blocks are referred to as **Primary Time, Secondary Time**, and **Tertiary Time**. Whereas a typical Primary Time may allow 40 moves in two hours, the corresponding Secondary Time may allow ten moves in 30 minutes. In most tournaments, the Tertiary Time is the same as the Secondary Time.

The squares in the C file allow you to set any combination of time/number of moves for all three time blocks—Primary, Secondary, and Tertiary. Each square has a different function, but they all work together to set up the desired

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PRESET LEVELS Avg.Time/Move (Total Number Moves/Time)	COUNT-DOWN LEVELS	USER-SELECTABLE TIME CONTROL	SELECT ANY SQUARE FOR INFINITE LEVEL			FIXED DEPTH LEVELS	MATE FINDER LEVELS
AVG.RESPONSE 3.5 MIN (40/2.5 HR)	3 HOURS PER SIDE	# MOVES REMAINING UNTIL TIME CONTROL	SELECT			8 PLY	MATE IN 8
A8	**B8**	**C8**	**D8**	**E8**	**F8**	**G8**	**H8**
AVG.RESPONSE 3 MIN (40/2 HR)	2 HOURS PER SIDE	TIME REMAINING UNTIL TIME CONTROL	ANY ONE			7 PLY	MATE IN 7
A7	**B7**	**C7**	**D7**	**E7**	**F7**	**G7**	**H7**
AVG.RESPONSE 2 MIN (30/60 MIN)	1 HOUR PER SIDE	SET TERTIARY # MOVES	OF THESE			6 PLY	MATE IN 6
A6	**B6**	**C6**	**D6**	**E6**	**F6**	**G6**	**H6**
AVG.RESPONSE 1 MIN (60/60 MIN)	30 MIN PER SIDE	SET TERTIARY TIME	SHADED			5 PLY	MATE IN 5
A5	**B5**	**C5**	**D5**	**E5**	**F5**	**G5**	**H5**
AVG.RESPONSE 30 SEC (60/30 MIN)	20 MIN PER SIDE	SET SECONDARY # MOVES	SQUARES			4 PLY	MATE IN 4
A4	**B4**	**C4**	**D4**	**E4**	**F4**	**G4**	**H4**
AVG.RESPONSE 15 SEC (60/15 MIN)	15 MIN PER SIDE	SET SECONDARY TIME	FOR			3 PLY	MATE IN 3
A3	**B3**	**C3**	**D3**	**E3**	**F3**	**G3**	**H3**
AVG.RESPONSE 10 SEC (60/10 MIN)	10 MIN PER SIDE	SET PRIMARY # MOVES	INFINITE			2 PLY	MATE IN 2
A2	**B2**	**C2**	**D2**	**E2**	**F2**	**G2**	**H2**
AVG.RESPONSE 5 SEC (60/5 MIN)	5 MIN PER SIDE	SET PRIMARY TIME	LEVEL			1 PLY	MATE IN 1
A1	**B1**	**C1**	**D1**	**E1**	**F1**	**G1**	**H1**

CHART OF PLAYING LEVELS

time controls. As you read this description, refer to the diagram of the board squares for an overview of the function of each of these squares.

The following is an example of how to go about setting time controls. For the sake of this example, in order that the displays match as you follow the steps, please be sure that your computer has either just been turned on, or you have just activated the **Full Reset** feature. Then proceed as follows:

1. Press the Level Key and then press down on Square C1 to set the amount of time allowed for the Primary time control. The amount of time is displayed in hours and minutes. The Display will show (P 0 : 0 5) , indicating P for primary, with 0 hours and 0 5 minutes. Note that the first 0 is flashing at this point. This indicates that this is the digit that you may set first—the digit representing hours.
In order to set the flashing digit, certain squares are used to enter the desired numbers. As shown in the following diagram, Square B1 is used for 0, Squares A1–A8 are used for 1–8, and Square B8 is used for 9. The same arrangement of squares is set up on the other side of the board, in a mirror image—with Square G1 used for 0, Squares

PRESS TO ENTER 8	PRESS TO ENTER 9		PRESS TO ENTER 9	PRESS TO ENTER 8
A8	B8		G8	H8
PRESS TO ENTER 7				PRESS TO ENTER 7
A7				H7
PRESS TO ENTER 6				PRESS TO ENTER 6
A6				H6
PRESS TO ENTER 5				PRESS TO ENTER 5
A5				H5
PRESS TO ENTER 4				PRESS TO ENTER 4
A4				H4
PRESS TO ENTER 3				PRESS TO ENTER 3
A3				H3
PRESS TO ENTER 2				PRESS TO ENTER 2
A2				H2
PRESS TO ENTER 1	PRESS TO ENTER 0		PRESS TO ENTER 0	PRESS TO ENTER 1
A1	B1		G1	H1

Press these squares to enter numerical values for the
User Selectable Time Control
(Squares are mirror images—use either set)

H1–H8 used for 1–8, and Square G8 used for 9. It doesn't matter which set of squares you use to enter your numbers—they both function in exactly the same way.

2. Press down on Square A1 to enter 1 hour.
   As soon as you press down on one of the setting squares to enter a number into the hours portion of the Primary time control, the first minutes digit will flash.

3. Press down on Square A3 to enter 3 for 30 minutes.
   After the number has been entered for minutes, the second minutes digit will flash.

4. Press down on Square B1 to enter 0.
   After the last number has been entered for minutes, the Display will again flash the hours digit. This gives you a chance to go back and change any of the settings, if desired. You have now set the Primary time control for 1 hour and 30 minutes.

5. Next, set the Primary number of moves. Do so by pressing down on Square C2. The Display will show (Pn 60), indicating P for primary, n for number of moves, and 6 0 for 60 moves. Note that the 6 is flashing. As above, this indicates the digit you may now set.

6. Using the same method as above, enter digits to set the desired number of moves for the Primary time control.
   Note: If you enter 0 for the number of moves, the computer will assume that you want to play the whole game in the amount of time you have specified.
7. Now press Square C3. The Display will show (S0 : 00) , indicating s for Secondary, and 0 : 0 0 for the time. Using the above method, enter digits for the Secondary time control.
8. Press Square C4, and the Display will show (Sn 00), indicating that you may now set the number of moves for the Secondary time control. Do so, as shown above.
   Note: If you enter 0 for the number of moves, the computer will assume that you want to play the rest of the game in the amount of time you have specified.
9. Now press Square C5. The Display will show (T0 : 00) , indicating T for Tertiary, and 0 : 0 0 for the time. Using the above method, enter digits for the Tertiary time control. *Note that the T which designates Tertiary Time in the Display actually looks like an inverted letter L (Γ) since the display segments do not lend themselves to a T configuration.*
10. Press Square C6, and the Display will show (Tn 00), indicating that you may now set the number of moves for the Tertiary time control.
    Note: If you enter 0 for the number of moves, the computer will assume that you want to play the rest of the game in the amount of time you have specified.
11. Press **Clear** to exit Level Mode, and you may now begin play using the time controls you have set up.

Squares C7 and C8 serve two functions in the User Selectable Time Control. In one respect, they can be considered "information squares" for the current level setting. Whenever you press **Level** and Square C7 during a game, the Display will show (Ax : xx) , where x is the amount of time remaining in the current time control. Similarly, pressing Square C8 will show (An xx) , where x is the number of moves remaining in the current time control. After pressing C7 and/or C8 to display this information, press **Clear** to return to normal game play.

These two squares can also be used if you are already in a game and you want to adjust the time, but you don't want to reset the entire time control. In such a case, simply press **Level**, Square C7 (or C8), and then change the desired digit in the Display to adjust the current time and/or moves.

The squares in the C-file can also serve another function—they can give you information about the Preset Levels and the Countdown Levels. Whenever you enter one of these levels, Level A2 for example, the computer is pre-set for a certain time control. In order to verify the setting of that particular level, do the following:
1. Press **Level**, Square A2, and **Clear** to enter Playing Level A2 into the computer.
2. Press **Level** again, and now press Square C1. Note that the Display shows (P0 : 10) , indicating that Level A2 has a default Primary time control setting of 10 minutes.
3. Press Square C2 and note a Display of (Pn 60) , which indicates that Level A2 has 60 as its default Primary number of moves.
4. When you have finished checking all desired time controls, always

remember to press the **Clear** Key to return to normal game play. Note that this method can also be used to simply review the Time Control you have already set up. By pressing **Level** and any of the C file squares, the settings you have entered for those squares will be shown in the Display.

Please note the following additional rules which apply to the User Selectable Time Control settings:
The maximum allowable settings are 9:59 for time and 99 for the number of moves. If you attempt to enter a number which exceeds the maximum, the computer will beep and will not allow entry of that digit.

If you enter 0 time for the Secondary time control, the Primary time control will simply repeat after it has run out. Similarly, if you enter 0 for the Tertiary time control, the Secondary time control will repeat after it has run out.

2.7.4 FIXED DEPTH LEVELS *(Squares G1-G8)*
Fixed Depth Levels may be selected by pressing **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 lookahead to two ply or two half-moves (one half-move or one ply=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.

2.7.5 MATE FINDER LEVELS *(Squares H1-H8)*
Mate Finder Levels may be selected by pressing **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. If the computer finds a mate in 6, the Display will show $\boxed{n\ 6}$. Press **Clear** to see the move, but do not enter it on the board yet. At this point, you may do either of the following:
1. If you would like to see a different mate in 6 solution, *do not make the computer's move on the board.* Instead, make sure the Shift LED is lit and press **Alternate**. The computer will then begin to search for an alternate solution to the same problem; *or,*
2. If you would like to see the computer's next move, simply enter the indicated move on the board. Then enter your move, and the computer will automatically decrement the Mate Finder Level for you and announce the next mating move—in this case, it would display $\boxed{n\ 5}$. Again, press **Clear** and then make the indicated move on the board. Continue this procedure to see the whole mating line.

Note: If no mate is found, the Display Window will show $\boxed{-n\,n-}$.
Since the computer automatically decrements the Mate Finder Level when it has found a mate, care must be taken not to get confused if you are using **Problem Mode** along with the Mate Finder Levels. For example, if you set up a mate in 5 problem in **Problem Mode** and get a solution, and you then go back into **Problem Mode** to set up another mate in 5 problem, the computer will now be set on Level H4, waiting to announce a mate in 4 for the last solution. You will need to set it back on Level H5 in order for it to search for the mate in 5 moves.

2.7.6 INFINITE LEVEL *(Squares D1-D8, E1-E8, or F1-F8)*

To select Infinite Level, press **Level** and any board square in files D, E, or F. The Infinite Level allows the computer unlimited search 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 pressing the **Move** Key.

2.8 REPLAY *(SHIFT LED should be LIT when using Replay Key)*

At any point during a game or at the end of a game, you may have the computer replay the entire game by pressing the **Replay** Key (unless you have pressed **New** for a New Game, which will erase the computer's memory). Once **Replay** is pressed, the coordinates of the first move that was made will appear in the Display. Enter the indicated move on the board, and the second move of the game will be shown in the same fashion. Note that moves for the computer's side are also indicated by the board LEDs. After each move is entered, the computer will display the next move played. At the end of the entire move sequence, the computer will go back to displaying the time.

One advantage of the **Replay** function is that it allows you to double check your notation (if you have been writing down the moves during the game), thus allowing you to correct any errors. Or, if you prefer, you can take notation during the replay itself if you have decided that it is a game you wish to keep. This is a nice option for a new player, since sometimes taking notation during an actual game can disturb one's concentration.

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

2.9 TAKE BACK *(SHIFT LED should be UNLIT when using Take Back Key)*

The **Take Back** function enables 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 press **Take Back** when it is your turn to move, and the LEDs indicating the *to* square of the last move will light. The move will also be shown in the Display Window (in take-back order). Press down on the indicated square, and the LEDs showing the *from* portion of the move 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 you may 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 **Take Back** 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 LEDs to indicate the square of the previously captured piece and showing that square location in the Display. Return the captured piece to the board and press down on that piece. If you do not recall the identity of the captured piece, press down on the indicated square to turn the LEDs and Display off and then use the Verify function to find out what type of piece belongs on that square.

If you have taken back moves and decide that you would like to see them replayed, see Section 2.11. *Hint.* To take back all moves played in a game thus far for a entire game, see Section 2.8. *Replay.*

2.10 INFO *(SHIFT LED should be LIT when using Info Key)*

As outlined in Section Three, the Rotating Display feature allows you to select various pieces of information to be displayed while the computer is thinking, so that you can follow its thought and search processes as they take place. By using the **Info** Key, you also have the option of calling up this information *after* the computer has already made its move. Pressing **Info** after the computer has announced its move or after executing the computer's move on the board will get you into a *static* Rotating Display Mode which gives you information on the computer's last move and allows you to review the computer's calculations at the moment its move was decided upon. With each press of the **Info** Key, the Display will show *the current move number, the amount of time it took for the move, the search depth, the game score,* and *the computer's entire principle variation (the line of play the computer currently believes to be best),* in that order.

After you have obtained the desired move information, press **Clear** to return to the game.

2.11 HINT *(SHIFT LED should be UNLIT when using Hint Key)*

If it is your turn to move and you would like the computer to suggest a move, press **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, pressing **Hint** 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 Section 2.8, *Replay.*

2.12 ALTERNATE *(SHIFT LED should be LIT when using Alternate Key)*

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, press the **Alternate** Key. The computer will then calculate a different move, one that it considers to be the "next best" move. You may repeat this process as many times as you wish, and eventually the computer will have shown you all legal moves for that side in that position. Be aware of the fact that each time you ask for an alternate move, the computer comes up with a less desirable move than the last. This is because it will always make the best possible move first, and then the next-best, and then the next, etc. Some of these moves, especially if you have asked for many alternate moves, will therefore not be good moves—and under normal conditions, the *Master* would never play them. If the computer finds that there are no more legal moves in the position and the **Alternate** Key is pressed again, the computer will simply cycle back to the beginning of its move list and show you the same moves again from the start.

Note: Keep in mind that the computer will make its alternate move calculation in accordance with the time or depth controls of the level selected. Even though the alternate 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 one minute to calculate

its first move choice and an additional minute to calculate its second move choice, it will record the use of two minutes for one move.

If you ask to see alternate moves *while the computer is still playing from its Opening Book Library*, the *Master* will show you alternate move choices that are present in its book (see Section 1.15, *Book Openings*). If the **All Openings** option is in effect (see Section 3.6), the computer will cycle through **all** of the available book moves for that position. If the **All Openings** option is *not* in effect when you ask for alternate moves, the *Master* will only play the moves that are present in its Tournament Book.

Once the computer has shown you all of the book choices in that position and the **Alternate** Key is pressed again, the computer will simply display the same book moves over again from the beginning.

2.13 MOVE *(SHIFT LED should be UNLIT when using Move Key)*

If, during a game, you decide to change sides with the computer, press the **Move** Key when it is your turn to move. The computer will then take over your pieces and start playing for that color. After the *Master* comes back with its move, you may enter a move for the computer's side and continue to play the same game. You may switch as often as you wish during a game. If you would like to watch the computer play against itself, press **Move**, enter the move displayed, and continue to repeat this procedure.

At any time when it is the computer's turn to move, you may force the *Master* to stop thinking and make a move immediately on any level. To force the computer to move, press the **Move** Key while the computer is thinking. The computer will then stop thinking and play the move it considers to be the best one it has found in its search so far. To see other moves the computer might make in that same position, use the **Alternate** Key (see Section 2.12).

2.14 CLEAR *(SHIFT LED NOT APPLICABLE)*

Since the **Clear** Key is used in many different instances, this key can be used whether the Shift LED is on or off. This enables you to press **Clear** whenever you need to, rather than having to decide whether or not you need to press the **Shift** Key first.

The **Clear** function is used in the following situations:

1. If you accidentally press an unwanted *from* square, press **Clear** and you are free to press the desired square.
2. The **Clear** Key is often used to tell the computer that you have finished some particular operation and you would like to exit that mode. Press **Clear**, for example, to exit **Option Mode, Hint, Replay Mode, Problem Mode, Verify Mode, Level Select Mode**, and **Time Mode.**
3. The **Clear** Key is also used whenever the computer makes a mate or draw announcement. Before making the mating or drawing move, the Display Window will indicate either the number of moves to mate or the type of draw which is occurring. In order to make the computer show you its next move, you must press the **Clear** Key first.

SECTION THREE: GAME AND DISPLAY OPTIONS

INTRODUCTION TO OPTION SELECT MODE

In addition to the keys and special features described previously in this manual, a number of additional options may also be selected to enhance your enjoyment of the computer. These options are user selectable at any time during the game, and can be activated by pressing various squares on the playing surface. When **Option Select Mode** is chosen, *Squares A1 through H1* are used to select various *Game Options*, and *Squares A2 through H2* are used to select various *Rotating Display Options*.

Press the **Option** Key to enter **Option Select Mode**. Whenever you are in this mode, the Display Window will read either (O P H S) or (d S P L), depending on which set of options you were last choosing from. Pressing the **Option** Key repeatedly will toggle back and forth between these two displays. The initial default display is (O P H S) when the **Option** Key is pressed after the computer is first turned on.

When (O P H S) is shown in the Display, you may use Squares A1 through H1 to choose from various *Game Options*.
When (d S P L) is shown in the Display, you may use Squares A2 through H2 to choose from various *Rotating Display Options*.

Always press the **Clear** Key when you have made your desired option choices and would like to exit **Option Select Mode**.

A full description of both the Game Options and the Rotating Display Options can be found under the appropriate headings in this section.

GAME OPTIONS (Display shows (O P H S))

As you can see from the following chart, the *Master* offers a variety of interesting Game Options from which you may choose. To select one or more, press the **Option** Key until (O P H S) shows in the Display Window. Note that the "1" LED is also on at this point, reminding you that all Game Options are chosen from Squares A1 through H1. You may now choose from the following Game Options:

EASY MODE	SOUND OFF	MONITOR MODE	BLACK FROM THE BOTTOM	CHANGE COLOR WITH MOVE	ALL OPENINGS	CLEAR BOARD	COUNT DOWN CLOCK
A1	B1	C1	D1	E1	F1	G1	H1

GAME OPTIONS

Each option of your choice is selected by pressing down on the square designated for that particular option. As each option is selected by pressing the desired square, the LED below that square will light to indicate the selected option. You may choose any number of options at the same time, as desired. 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. After selecting your option(s), always press the **Clear** Key to exit **Option Select Mode**.

If you decide you want to cancel an option after you have already pressed **Clear** to exit **Option Select Mode**, simply press **Option** again to get back into that mode. The LEDs for **Options A1, B1, C1, D1, F1** and **H1** will be lit if these options have been selected and are in effect. To cancel any of them, press each

appropriate option square and the LED below the square will go out. Then press **Clear** to exit **Option Select Mode**. *Note: This rule does not apply to **Options E1 and G1**, because they include an option which must be entered separately each time to take effect (**Change Color with Move**) and a one-time selection (**Clear Board**). 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 EASY MODE *(Square A1)*

Press 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 would have used the whole two minutes to think about its reply. You might as well have selected a much higher level!

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

3.2 SOUND OFF *(Square B1)*

Press 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 to deselect this option. The sound can be turned off or on as often as desired during a game.

3.3 MONITOR MODE *(Square C1)*
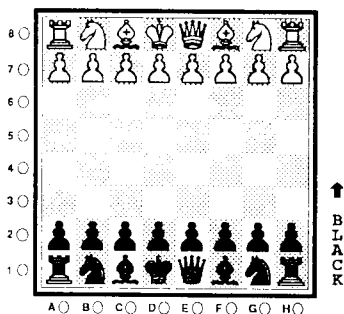
Press Option, Square C1, and Clear.

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 function, but after the computer makes a move, **Monitor Mode** will remain in effect. To exit **Monitor Mode** and continue playing the game against the computer, press **Option**, Square C1, and **Clear**. Then simply make your next move and the computer will respond as in a regular game.

3.4 BLACK FROM THE BOTTOM *(Square D1)*

Press Option, Square D1, and Clear.

Selecting **Black from the Bottom** allows you to play with the Black pieces set up at the bottom of the board. When you choose this option, be sure to set the pieces up correctly, as shown in the diagram (note the positions of the Kings and Queens). Once you have set up the pieces, press **Move** to make the computer start thinking.

Note: Switching to this option during a game is not advised.

Board set-up with Black from the Bottom (Option D1) activated

3.5 CHANGE COLOR WITH MOVE *(Square E1)*

Press 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 ALL OPENINGS *(Square F1)*

Press Option, Square F1, and Clear.

Choosing Option F1 *expands* the computer's Tournament Opening Book Library. When this option is in effect, the computer will select from a greater variety of book opening lines. If this option is *not* selected, the computer will play only those opening lines it feels are best.

Note: If the **All Openings** option is in effect when you use the **Alternate** Key to see the computer's alternate moves (see Section 2.12), the computer will cycle through **all** of the available book moves for that position. If the **All Openings** option is *not* in effect when you ask for alternate moves, the computer will only cycle through the moves that are present in its *Tournament Book*.

3.7 CLEAR BOARD *(Square G1)*

Press Option, Square G1, and press Clear twice.

This option removes all the chess pieces from the board in the computer's internal memory. This **Clear Board** feature is especially valuable for setting up problems that involve few pieces.

Note: After pressing **Clear** the first time, the Display Window will show 〔 d r 〕 for "draw" since there are no Kings on the board and a legal position requires a King for each side. At this point, press **Clear** again to clear the draw display, and then enter **Problem Mode** and place the Kings in their desired positions, along with the other pieces of your choice. For details on using **Problem Mode**, see Section 2.2.

3.8 COUNTDOWN CLOCK *(Square H1)*

Press 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 will **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 is, therefore, 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 Option H1 *while using one of these levels* will provide you with 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 one of these levels, 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. This will enable the player to see the more exact time that remains for his side because seconds will also be shown. For more information on Countdown Levels, see Section 2.7.2.

ROTATING DISPLAY OPTIONS (Display shows (dSPL))

The Rotating Display Options allow you to obtain information about the computer's thought and search processes as they take place. Once you have chosen one or more of the Rotating Display Options as described below, the requested information will show in the Display Window while the computer is thinking about its move. The Display can show you various pieces of information about the computer's current move: *the move time, the search depth, the score, the current move being searched,* and *the first four moves of the computer's principle variation (the line of play the computer currently believes to be best).* You will be fascinated as you watch the computer think about one move, then change its mind and consider another; as you see how the score changes as various moves are considered; as you note exactly how deep the computer is searching at any given moment; and as you watch the computer's best line of play unfold before your eyes.

When the computer is first turned on and you begin to play, the Display will automatically show time for the player to move while each side is thinking. To set up the Rotating Display Options, simply press the **Option** Key at any time during the game until (dSPL) shows in the Display Window. Note that the "2" LED is also on at this point, reminding you that all Rotating Display Options are chosen from Squares A2 through H2. At this point, you may choose from the following Rotating Display Options:

MOVE TIME	SEARCH DEPTH	SCORE	CURRENT MOVE BEING SEARCHED	1ST MOVE PRINCIPLE VARIATION	2ND MOVE PRINCIPLE VARIATION	3RD MOVE PRINCIPLE VARIATION	4TH MOVE PRINCIPLE VARIATION
A2	B2	C2	D2	E2	F2	G2	H2
A1	B1	C1	D1	E1	F1	G1	H1

ROTATING DISPLAY OPTIONS

Each option of your choice is selected by pressing down on the square designated for that particular option. As each option is selected by pressing the desired square, the LED below that square will light to indicate the selected option. You may choose any number of display options at the same time. 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. After selecting your option(s), always press the **Clear** Key to exit **Option Select Mode**.

If, further into the game, you choose to *turn off* a Rotating Display option you selected earlier, simply enter **Option Select Mode** again by pressing the **Option** Key. Make sure the Display Window shows (dSPL) (if necessary, press **Option** again to get this display). Note that the LEDs are on for the option squares which are currently in effect. To turn any of these options off, simply press down on the desired square(s) and the LED(s) will go out. Pressing each square repeatedly will toggle any particular display option on and off. When you have made your choices, remember to press **Clear** to exit **Option Select Mode** so that the computer will register your changes.

Note: If you have not chosen any of the display options, the computer

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automatically defaults to display move time. You *cannot* deactivate move time (Square A2) if no other display features are activated. You may, however, wish to deactivate move time if you are using many of the display features and are not interested in the time display. In this case, turn the move time display off as noted in Section 3.9.

If you have selected multiple display features, the information will be *rotated in one-second increments.*

If you wish to see this same information *after* the computer has already made its move, use the **Info** Key (see Section 2.10).

The following is a more detailed description of each individual display feature. Note that once you have entered **Option Select Mode** as described in each of the following sections, *you may set any number of display options at once.* For the sake of clarity, however, each individual section will describe the full procedure, as if you were selecting only that one option.

3.9 DISPLAY MOVE TIME *(Square A2)*

Since move time is automatically selected when the computer is turned on, there is no need to activate A2 to select time initially. You may, however, wish to deactivate move time if you are using several of the display features and have no interest in the time display. To deactivate move time, press **Option** until the Display shows (d S P L), then press Square A2 so that the LED below it turns off, and finally press **Clear**. If you later wish to turn the move time display back on again, press **Option**, Square A2, and then **Clear**.

Note: You *cannot* deactivate move time if no other display features are activated.

3.10 DISPLAY SEARCH DEPTH *(Square B2)*

If you would like to see how far ahead the computer is looking as it ponders a move, press **Option** until the Display shows (d S P L), press down on Square B2 so that the LED below that square is on, and press **Clear**. While the computer is thinking, the Display will show the ply depth and the number of computer moves in that ply which have been examined thus far. A display of (1 2   3), for example, would mean that the computer is currently examining the third ply and has reviewed 12 moves so far. To deactivate the search depth display, press **Option**, press Square B2 so that the LED below it turns off, and press **Clear**.

3.11 DISPLAY SCORE *(Square C2)*

If you would like to see the computer's opinion of the current board position, press **Option** until the Display shows (d S P L) , press down on Square C2 so that the LED below that square is on, and press **Clear**. While the computer is thinking, the Display will show 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 1.00 points for a pawn, 3.00 points for a Knight or Bishop, 5.00 points for a Rook, and 9.00 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 (4 . 9 1) would indicate that the computer is up a Rook, and a display of (-1 . 0 3) indicates that the computer is down a pawn. To deactivate the score display, press **Option**, press Square C2 so that the LED below it turns off, and press **Clear**.

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3.12 DISPLAY CURRENT MOVE BEING SEARCHED *(Square D2)*

If you would like to see what move the computer is currently examining, press **Option** until the Display shows ⟨d S P L⟩ , press down on Square D2 so that the LED below that square is on, and press **Clear**. While the computer is thinking, the Display will show the current ply one move being searched. Whereas the first move of the computer's *principle variation* (see Section 3.13) is always the *best* move the computer has found so far, watching its thought process with Square D2 activated allows you to see *all* the moves the computer is considering as it searches for the best move. Note that the two displays will sometimes be the same. To deactivate the current move display, press **Option**, press Square D2 so that the LED below it turns off, and press **Clear**.

3.13 DISPLAY FIRST MOVE OF PRINCIPLE VARIATION *(Square E2)*

The *principle variation* is the line of play which the computer currently believes to be best. If you would like to see the first move of this *principle variation*, press **Option** until the Display shows ⟨d S P L⟩ , press down on Square E2 so that the LED below that square is on, and press **Clear**. While the computer is thinking, the Display will show the first move of the line of play which the computer currently believes is best. To deactivate this display, press **Option**, press Square E2 so that the LED below it turns off, and press **Clear**.

3.14 DISPLAY SECOND MOVE OF PRINCIPLE VARIATION *(Square F2)*

If you would like to see the second move of the computer's *principle variation*, press **Option** until the Display shows ⟨d S P L⟩ , press down on Square F2 so that the LED below that square is on, and press **Clear**. While the computer is thinking, the Display will show the second move of the line of play which the computer currently believes is best. To deactivate this display, press **Option**, press Square F2 so that the LED below it turns off, and press **Clear**.

3.15 DISPLAY THIRD MOVE OF PRINCIPLE VARIATION *(Square G2)*

If you would like to see the third move of the computer's *principle variation*, press **Option** until the Display shows ⟨d S P L⟩ , press down on Square G2 so that the LED below that square is on, and press **Clear**. While the computer is thinking, the Display will show the third move of the line of play which the computer currently believes is best. To deactivate this display, press **Option**, press Square G2 so that the LED below it turns off, and press **Clear**.

3.16 DISPLAY FOURTH MOVE OF PRINCIPLE VARIATION *(Square H2)*

If you would like to see the fourth move of the computer's *principle variation*, press **Option** until the Display shows ⟨d S P L⟩ , press down on Square H2 so that the LED below that square is on, and press **Clear**. While the computer is thinking, the Display will show the fourth move of the line of play which the computer currently believes is best. To deactivate this display, press **Option**, press Square H2 so that the LED below it turns off, and press **Clear**.

Note: If you would like to see the computer's **entire** *principle variation* after it has announced its move, use the **Info** Key after the computer has announced its move, as described in Section 2.10. The *principle variation* shown will not be restricted to four moves, but rather the entire line of play the computer has come up with will then be displayed.

SECTION FOUR: MATE AND DRAW ANNOUNCEMENTS

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 following sections for details regarding specific draw announcements.

Note: Whenever the computer indicates a mate or draw in the Display Window as described below, you must always press the **Clear** Key to clear the display.

4.1 CHECKMATE

Any time there is a check situation on the board, the Display will show a dot in the center below the area where the colon (:) normally appears.

If the computer determines that you will soon be mated, it will show ⌐n x⌐ in the Display Window (where x is equal to the 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⌐.

4.2 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 ⌐dr⌐ 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).

4.3 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 50 such moves have been made, it will claim a draw by displaying ⌐dr50⌐ in the Display Window.

4.4 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 ⌐drC3⌐. If the computer recognizes that its opponent has made a move that results in a third repetition, it claims the draw by displaying ⌐drH3⌐ .