ELECTRONIC
GRAND·MASTER™

INSTRUCTION BOOK

ONE YEAR LIMITED WARRANTY ON GRAND•MASTER

Electronic Grand•Master is warranted by Milton Bradley Company to the original consumer purchaser for a period of one year from the original purchase date under normal use and service against defective workmanship and materials. Any Implied Warranties are also limited in duration to the one year period from the Original Purchase Date. Some states do not allow limitations on how long an Implied Warranty lasts so the above limitation may not apply to you.

This warranty is void if Grand•Master has been damaged by accident or unreasonable use, neglect, misuse, abuse, improper service or other causes not arising out of defects in workmanship or materials.

Milton Bradley shall not be liable for loss of use of Grand•Master or other incidental or consequential costs, expenses or damages incurred by the purchaser. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you.

During the warranty period, if found to be defective due to workmanship or materials, Grand•Master will either be repaired or replaced with a reconditioned Grand•Master (at Milton Bradley's option) without charge for parts or labor when returned with proof of purchase date, shipping prepaid to the address listed below. In the event that Grand•Master is replaced, the warranty on the replacement will be one year from the date of its return to you.

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

POST WARRANTY REPAIR POLICY

After the one year warranty period has expired, for a Prepaid Charge, Milton Bradley will, for a period of two years from the date of purchase, at its option, either repair your product or replace it with a reconditioned Grand•Master on the condition that you return your product, shipping prepaid, to the address listed below along with proof of purchase date and your check or money order in the amount of SEVENTY FIVE DOLLARS ($75). Milton Bradley shall not be obligated to perform this service if Grand•Master has been abused, misused, improperly serviced or damaged due to accident.

SHIPPING INSTRUCTIONS
FOR WARRANTY AND POST WARRANTY REPAIRS
PLEASE READ CAREFULLY AND
RETAIN THIS IMPORTANT INFORMATION
FOR FUTURE REFERENCE

Be sure to return both the Grand•Master unit with its plug-in power supply and its pieces. If the original packaging is available, repack Grand•Master in its packing and box. If not available, wrap carefully, making sure to surround the product with adequate padding. If the one year warranty period has expired and your purchase date is still within our two year time limit, send in SEVENTY FIVE DOLLARS ($75) and proof of purchase. Please include a brief description of the problem, your return address and ship insured Parcel Post or United Parcel Service to the following address:

MILTON BRADLEY COMPANY
Attn: Electronic Warranty Repair
108 Industrial Drive
East Longmeadow, MA 01028

The following items may be purchased for replacement:

Complete set of playing pieces $10.00
Power supply $10.00

Send your check or money order for these items to:
Customer Service
Milton Bradley Company
443 Shaker Road
East Longmeadow, MA 01028

FCC STATEMENT

This product has been designed to meet all applicable Federal Communications Commission rules. Because of this, there is very little chance that this product could cause interference to television or radio reception. However, the FCC has asked all electronic toy manufacturers to give you the following information.

If you notice interference with radio or television reception while this product is on, move the product away from the television or radio. If the product is the cause of interference, then moving the product away from the radio or television should eliminate the problem.

If you are having problems with your radio or television reception, you may find the following booklet helpful:

"How to Identify and Resolve Radio-TV Interference Problems."
This booklet is available from the U.S. Government Printing Office.
Washington, D.C. 20402

HOW TO MAKE THE MOST OF THIS INSTRUCTION BOOK

The Grand•Master instruction book is jam-packed with lots of information because Grand•Master is jam-packed with so many special features and unique functions. The book is a comprehensive presentation of every aspect of this outstanding chess computer.

Since the book is rather lengthy, we suggest that you read certain sections first so you can quickly learn how to move, how to capture and how to challenge Grand•Master to a game.

Read *all of PART I*, the introduction, and *portions of PART II*, the how to's of game play, Sections 3, 4, 5 and 6 specifically. Then during play, refer often to the Table of Contents to find sections that will enhance your play or answer any questions you might have about Grand•Master's responses (e.g. Section 24 is a valuable source on the computer's light signals).

Also refer to the illustrated control panel guide which begins on page 42. It shows you what keys to press at what time to activate Grand•Master's special functions.

The index, following the Table of Contents on pages 5 to 7, is also a valuable reference guide. It lists and quickly describes all key functions on the control panel.

TABLE OF CONTENTS

PARTS	SECTIONS	PAGES

SOMETHING EXTRA!

INDEX OF ALL 17 FUNCTION KEYS

The function keys on the control panel are explained and referenced, below. Take a look! Remember, to activate any keys in the top row, you must first press the SHIFT key. . .

KEY	FUNCTION	PAGE
MANUAL **GAME**	Press GAME to challenge the computer to a game—you'll play one side, the computer will play the other.	14-16, 20-22
PROBLEM **AUTO**	Press AUTO and watch as the computer moves both the WHITE pieces and the BLACK pieces, as it challenges itself to a game. **Caution:** if you press AUTO during a replay, it will erase any forward memory moves so you cannot "step ahead" to review already-played moves.	20-23, 34
MANUAL **GAME**	Press MANUAL and challenge another human opponent to a game—the computer oversees all moves checking to see that they are legal. Other functions like HINT, REPLAY and LEGAL are also available.	20-23
BACK **FORWARD**	Press BACK to retract or take back a move that either you, your opponent or Grand·Master has made.	31-33
BACK **FORWARD**	Press FORWARD to review a move that you retracted.	32-33
NEW **HINT**	Press HINT and the computer will shuffle the piece it thinks is either your next best move or its next best move.	35

KEY	FUNCTION	PAGE

REPLAY / CHANGE — Press CHANGE when you want Grand·Master to play the opposite side. Example, if it was playing WHITE, press CHANGE and the computer would play BLACK. **Caution:** if you press CHANGE during a replay, it will erase any forward memory so you cannot "step ahead" to review already-played moves.
22, 34, 36

REPLAY / CHANGE — Press REPLAY to see the entire game or part of a game replayed. In fact, you can see up to 128 plays replayed from the very beginning or from the last SETUP position.
33-34

NEW / HINT — Press NEW to prompt the computer to automatically set up the pieces in their starting positions to start a new game. When this is done, all memory of the previous game is erased.
19

SETUP / VERIFY — Press SETUP to "set up" special positions on the board with pieces of your choice. **Caution:** when you "set up" a position, all memory of the previous game is erased.
20, 24-26

SETUP / VERIFY — Press VERIFY to check the rightful position of every piece on the board and in the Border Areas. **Important:** when the VERIFY button is pressed after you have pressed the NEW key, or the SETUP/NEW keys or the VERIFY/VERIFY key, if indicates to the computer, that you will manually move the pieces to their desired positions.
20, 27

STOP / LEVEL — Press LEVEL to select one of the 12 Levels of Play. The level can be changed at any time during play. **Also** used to set the number of moves the computer must find a forced mate in the PROBLEM mode.
12-13, 28

KEY	FUNCTION	PAGE
PROBLEM / **AUTO**	Press PROBLEM to solve a problem that you have positioned on the board in a SETUP situation. The computer will find a forced mate in any number of moves up to 5.	20, 28-31
LEGAL / **SOUND**	Press LEGAL to see all the legal moves a particular piece can make on the board . . .the computer automatically moves the piece to each legal destination!	36
LEGAL / **SOUND**	Press SOUND to turn all auditory signals on or off.	37
STOP / **LEVEL**	Press STOP to stop the action that the computer is doing. . .for example, if Grand·Master is moving a piece during a REPLAY, it will stop the replay after completing the move; in GAME and AUTO mode and on Level 12 of Play, if the STOP key is pressed, it will force the computer to make an immediate move.	12, 35
SHIFT	Press SHIFT to be able to use a function key in either the top or bottom row.	20-22

PART I: INTRODUCTION

SECTION 1

MEET GRAND•MASTER. . .

We're proud to introduce you to Grand•Master, an extraordinary chess computer that moves its own pieces. If you're a strong chess player, you'll find it an admirable adversary who will challenge you to one exciting game after another. If you're just learning to play chess, you'll be astonished at how helpful Grand•Master can be as an instructor, giving you a sure grasp of the essentials as you practice against it and play with it!

Please note: this operator's manual explains how the Grand•Master computer functions. A second booklet, the "Let's Play Chess" pamphlet, is also included as a general reference to basic chess rules and piece movement.

. . .AND ITS EXTRAORDINARY FEATURES

See Figure 1, below, for a quick look at Grand•Master. Notice the chessboard with the Border Areas for captured pieces on either side; the specially designed chess pieces that are all set up for your first move; the control keys for using the computer's many special features; and the signal lights which tell you exactly what Grand•Master is doing at any moment.

Included with your unit, but not shown here, is a protective dust cover that fits over the board, pieces and control panel.

FIGURE 1

Chessboard with pieces in starting positions

Squares labeled with letters and numbers for notation

Border Area for White captured pieces

Power supply plugged in here

Border Area for Black captured pieces

Power Switch

Control panel with keys and signal lights
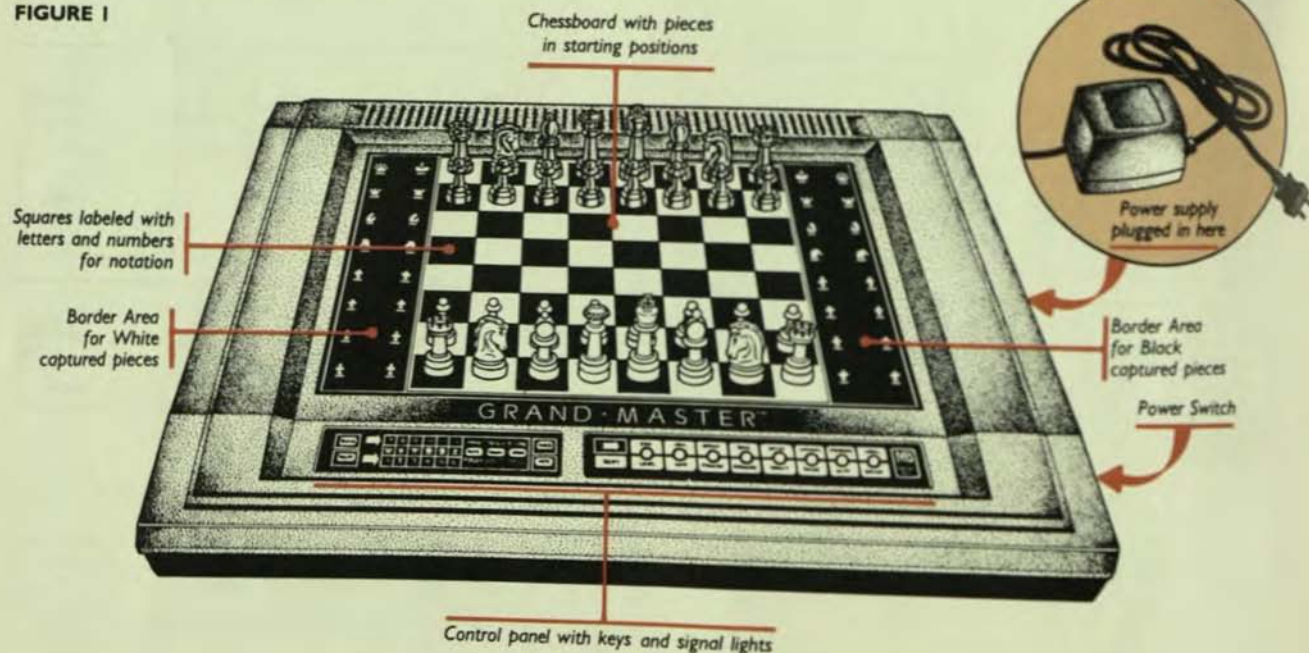
FIGURE 1A

Close-up of the control panel with many of its features highlighted.
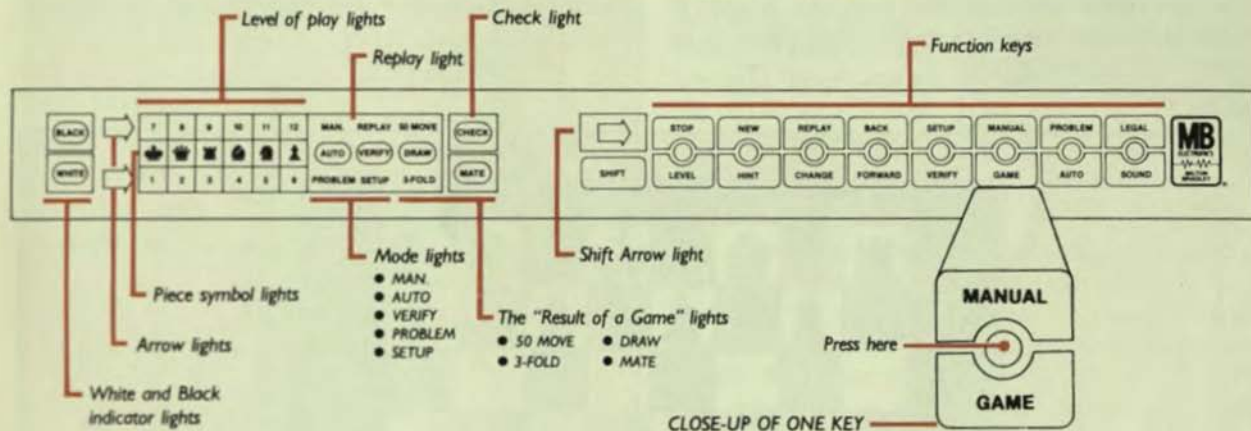
Important: when pressing a key, always push down the white circled area so the computer can register your action correctly.

SECTION 2

PREPARATION OF POWER SUPPLY

Plug in power supply to the unit making sure the socket of the power supply is fitted firmly into the prongs of the computer unit. See Figure 1 for plug-in location on unit. Place the power supply on the floor. Before plugging the power supply into any 120 volt, AC household wall socket, be sure the Power Switch is in the "off" position. See Figure 3 on page 11 for a look at the switch.

Caution: The power supply should not be left plugged into the wall socket if Grand·Master is not in play.

Remember, this is an electrically operated product and care should be taken during handling and use to prevent electric shock. 115V 60HZ 30WATTS AC ONLY (FOR INDOOR USE ONLY).

You'll learn more about Grand·Master's features, controls and lights as you play. Right now, why not sit down "face to face" with your phantom opponent and challenge the computer to a game. To do so, just turn the page to "Part 2" and let play begin.

PART 2:
HOW TO PLAY A GAME AGAINST GRAND·MASTER

SECTION 3

BEFORE STARTING A GAME

Make sure the unit is placed on a level surface. Then set up the pieces in their starting positions, as seen in Figure 2. Grand·Master expects the White pieces to be positioned at the bottom of the board near the control panel; the Black pieces are positioned on the opposite side.

FIGURE 2

Black side starting positions

White side starting positions

Control panel
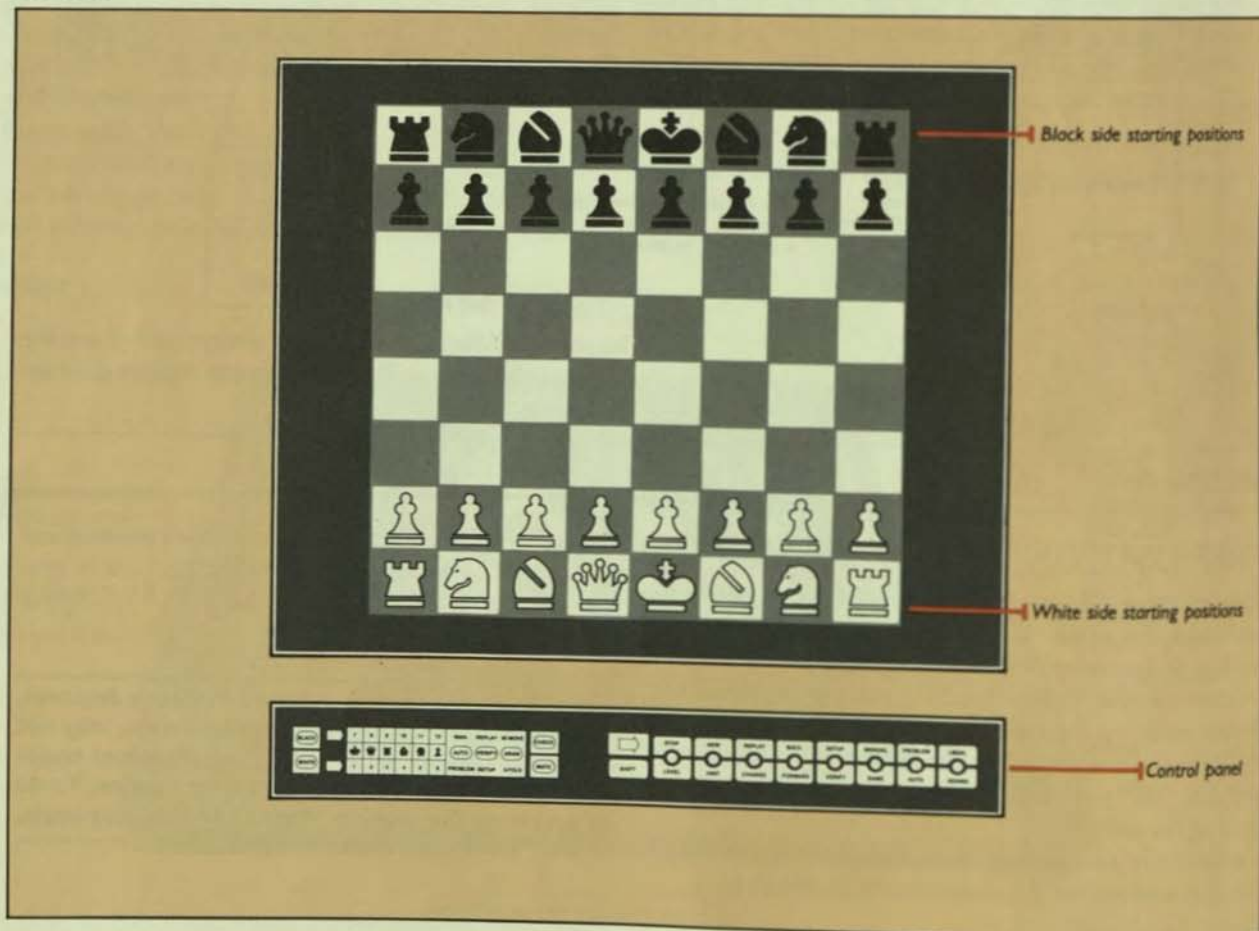
In Figure 2, the chess pieces are represented by the following symbols. . .

		WHITE	BLACK
KING			
QUEEN			
ROOK			
BISHOP			
KNIGHT			
PAWN			

Please note: 6 of the lights on the control panel are shaped like these symbols. These piece symbols also appear in the Border Areas at the side of the chessboard. We'll tell you why later.

Now slide the Power Switch on in the direction of the arrow, as shown in Figure 3. The unit will "beep" and all the red lights will flash briefly. The light labeled "WHITE" will re-

FIGURE 3

main on to signal that it's White's turn to move.
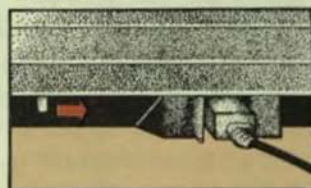
Please note: although it's not absolutely necessary, it is best to set the pieces in their starting positions before switching the power on. When the Power Switch is slid on, the unit will "beep" and all the lights will flash briefly. After that, the light which is labeled "WHITE" will remain on to indicate that the unit is ready for White's first move to be made. The computer will use the next 40 seconds to adjust the pieces so they are centered in their starting squares. . .Grand·Master does this all automatically, shuffling the pieces into positon. You do not have to wait for the computer to finish its "housekeeping"—you may make your first move during this time, if you wish.

Adjusting Levels of Play: before moving, you may, if you wish, adjust Grand·Master's Level of Play, choosing from beginner to expert challenges. Section 4 on pages 12 to 13 explains the Levels of Play in great detail. Right now, the computer is set on Level 2. If you prefer to play on this level, go straight to Section 5 on page 14 and discover how to make your first move. If you prefer to select another level, turn to Section 4 for more information.

SECTION 4

LEVELS OF PLAY

Grand•Master has 12 different "levels" of playing strength. If you're a strong player, you can set the computer to play on a higher number level—and you'll find it a tough opponent. On the other hand, if you're a novice chess player, you can set the computer to play on a lower number level for less competitive play—on the lower levels the computer will actually handicap itself by thinking less and making its moves very quickly.

Please note: Level 1 is specially designed to provide practice for the complete beginner. On this level, the computer never wins a game—unless the position is such that its only possible move gives checkmate!

Important: when you slide the Power Switch on, the computer is automatically set on Level 2.

4.1 Speed of play on each level

Just like a human player, Grand•Master plays more strongly and more intelligently the more time it has to think about its moves. The table to the right gives you the approximate average time that Grand•Master takes to make a move on each one of its levels. . .

On Levels 1 to 11, the computer is likely to take more time in a complicated position than in a simple position. The maximum time it ever takes to move will be *TWICE the average time, as shown in the table,* for the level on which it is playing.

Exception: the computer will take a longer time than just mentioned if it is searching for a forced mate in PROBLEM MÓDE. See Section 16 on page 28 for more details.

There are some cases in which the computer moves

LEVEL	TIME
1	1 second
2	5 seconds
3	10 seconds
4	20 seconds
5	40 seconds
6	1 minute
7	1 minute 30 seconds
8	2 minutes
9	2 minutes 30 seconds
10	3 minutes
11	3 minutes 45 seconds

On Level 12,

the computer thinks about its move indefinitely and actually will only play a move if you press the STOP key to prompt it to move. See Section 20 on page 35 for more information on prompting the computer to move.

Please note: don't be afraid to use Level 12 even as a new player because you can control the speed of the computer's response time on every move . . .and remember, the less time the computer has to think, the less intelligently it plays!

very quickly no matter what level it's playing on. For example, it will usually play quickly at the beginning of the game. This is because it is equipped with knowledge of a wide range of standard chess openings. Also, even when it's your turn to move, the computer will continue thinking about the position. . .so if it correctly anticipates your next move, it may reply instantly.

4.2 Viewing the level

At any time (when a piece is not being moved), the computer can show you which level it is playing on, by means of a light signal. To see such a signal, press the control key marked LEVEL. One of the red lights shaped like a piece symbol turns on. Notice that this light is positioned between two numbers—one above it and one below it. At the same time that the piece symbol lights up, a red arrow also lights up indicating which number you should read. . .the one above or the one below. This number, of course, signals which

level you're playing on. See Figure 4, below, for a look at the level light signals. . .

4.3 Changing the level

After you press the LEVEL key and view Grand-Master's Level of Play, as described in Section 4.2, you can switch to a higher or lower level by pressing the LEVEL key again, an appropriate number of times. Notice each time you press it, the computer registers one level higher. If you press the LEVEL key when Level 12 is displayed, the computer switches to Level 1. . .the next press of the LEVEL key will bring you to Level 2 and so on. **Important:** you may change levels as many times as you wish while a game is in progress. When the lights signal the level you wish to play on, proceed with the game. To see how to make your first move, turn to Section 5 on page 14. **Please note:** when you press another key on the control panel or start to make a move (or the computer makes a move), the level signal light will turn off.

FIGURE 4

A LEVEL 3 SIGNAL. . .
The Rook light between numbers "3" and "9" is on together with the bottom arrow signaling you to read the bottom number "3."

A LEVEL 11 SIGNAL. . .
The Knight light between numbers "5" and "11" is on together with the top arrow signaling you to read the top number "11."
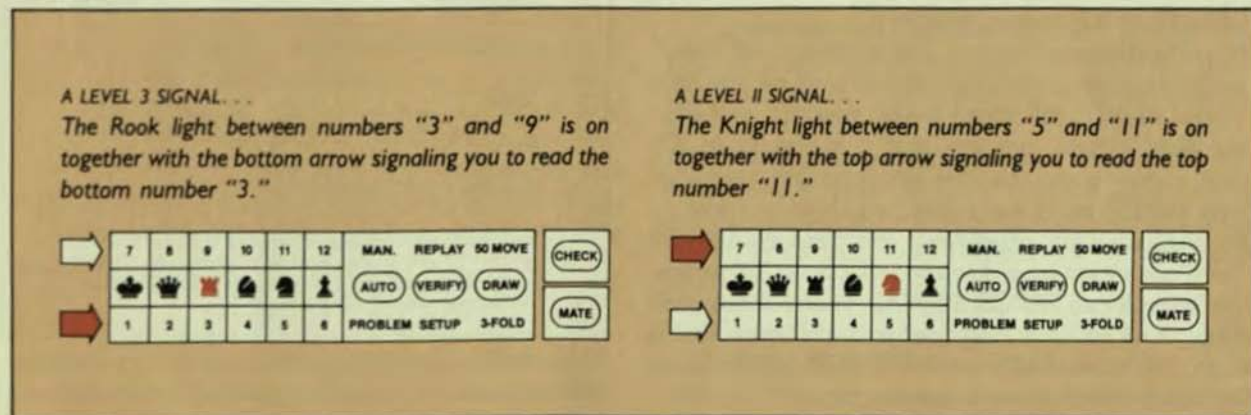
SECTION 5

MAKING MOVES

5.1 Playing White

White always moves first. If you choose to play White, the computer will move the Black pieces. Sit on the control panel side of the game and make the opening move if you play White. Here's how you make your first move. . .

A. Press down on the CENTER of the departure square of the piece you want to move (this square is the "from" square). To do this, tilt the piece slightly and use the edge of the base to press down on the CENTER of its square. You may also press down on the square with your finger if you wish.

How the computer reacts. . . Grand•Master will then "beep" to signal you that the first stage of your move has been properly registered. At the same time, the WHITE light will flash rapidly and you will see another light signal turn on. . .the red light shaped like the symbol of the piece you are moving.

B. Now move the piece to its destination square (this square is the "to" square) and press down on the CENTER of this square, as above.

How the computer reacts. . .the computer will "beep" again, the piece symbol light will turn off and the light labeled BLACK will start blinking slowly. This blinking BLACK light indicates that it is now BLACK'S turn to move and that the computer has registered your WHITE move and is thinking about its reply.

Error signal: if you press down on a piece in its proper "from" square but press down on an incorrect "to" square, you'll receive an ERROR SIGNAL. Grand•Master will flash all of its lights once and emit a distinguishable buzz. For more details on the ERROR SIGNAL, see Section 8 "Illegal Moves" on page 18.

For a graphic illustration of how to move, see Figure 5 below:

FIGURE 5

MOVING A PIECE—*always press down in center of square*

WHITE'S MOVE REGISTERED

BLACK'S TURN TO MOVE

CAUTION: *when pressing down a piece on a square, do so lightly with only enough strength to register the "beep" sound. Deformation of chessboard could result if pieces are pressed with too much pressure!*
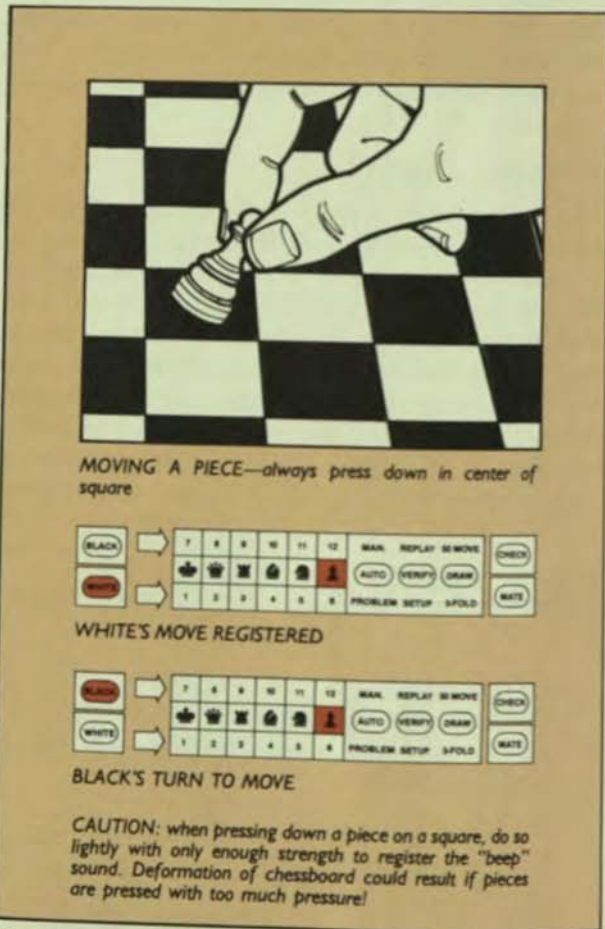
Please note: after you move a piece, Grand•Master will automatically adjust it, shuffling it in its square to center it.

5.2 Playing Black

If you prefer to play with the Black pieces, do not make the opening move as outlined above. Instead, press the CHANGE key to tell the computer to "change" from Black to White. Grand•Master will then make the opening move, playing the White pieces. See Section 21 on page 36 for more details on "Changing Sides".

Please note: when playing Black, you may find it more convenient to sit on the other side of the chessboard, opposite the control panel.

5.3 The computer's moves

As long as Grand•Master is deciding on its own next move, the BLACK or WHITE light (whichever side it's playing) will blink slowly. When finished "thinking," the computer will move one of its own pieces on the board. . .all AUTOMATICALLY. Just sit back and watch the computer actually move a piece from one square to another. This unique style of play makes you feel that you're playing against an almost-human opponent.

Please note: each time the word "automatically" is used in this manual, it will describe the action whereby the computer moves or removes pieces on the board itself. . .just like magic! After the computer moves a piece, the WHITE or BLACK light (whichever side you're playing) will shine continuously indicating that it's your turn to move. Make a move as outlined in Section 5.1 on page 14.

SECTION 6

CAPTURING PIECES

At the sides of the chessboard there are two brown areas where captured pieces are stored, see Figure 1 on page 8 for location. These are the Border Areas, each one marked by two rows of symbols showing the different pieces of one color. With the control panel directly in front of you, notice that the WHITE pieces are stored in the left Border Area and the BLACK pieces are stored in the right Border Area. Each chess piece has a particular space assigned to it in the Border Area and if captured must be placed there, directly over the symbol that matches its color and type.

Here's how you capture one of your opponent's pieces:
A. Press down on the "from" square of the piece you're moving, as in Section 5.1A on page 14.

B. Pick up the piece you are capturing and put it aside. Then complete the move of your own piece by pressing down on the "to" square with your own piece, as in Section 5.1B on page 14.
The result: the piece symbol light of the captured piece will flash rapidly.

C. Put the captured piece directly over a symbol of its own color and type in the proper Border Area. When doing so, be sure to press down on this symbol as you would on a chessboard square.
The result: the computer will "beep" to show you that your move is registered and will automatically adjust the piece moved and the piece captured, shuffling them in their square and space respectively, if they need to be centered.

Important: when moving one of your Pawns to capture en passant, proceed as outlined in A, B, and C of Section 6. Do not, however, press down on the square

that you are removing your opponent's Pawn from. More details on en passant capture in the Appendix on page 40.

Here's how the computer captures:

If Grand•Master captures one of your pieces, it will AUTOMATICALLY remove it from its square and move it to its correct space in the Border Area.

Proper positioning of captured pieces in Border Areas: Grand•Master has a tidy mind. It expects that captured pieces of a particular type be positioned in a particular order. . .so that the first piece of a type and color captured is positioned in the outer row of the Border Area . . .and in the case of Pawns, the first four Pawns of one color captured are positioned in the outer row and the next four Pawns in the inner row, starting from the spaces closest to the control panel in both cases. Of course, if you did happen to position a captured piece in an incorrect space in the Border Area, Grand•Master will AUTOMATICALLY move it to its correct space. Captured pieces must be positioned in their proper Border Area spaces so that Grand•Master can keep track of where every piece is. . .whether on or off the board. Also when the captured pieces are in their proper spaces in the Border Areas, the computer is ready at any time either to set up pieces for a new game (see Section 10 on page 19 for details) or to allow you to "take back" moves (see Section 17 on page 31 for details).

Error Signal when capturing: it is possible that you might press down on a wrong square when making a capture. If you do, you'll receive an error signal. . . Grand•Master will flash all its lights once and emit a distinguishable buzz. See Section 8 "Illegal Moves" on page 18 for more details.

SECTION 7

SPECIAL MOVES

If you need further explanation of the chess terms used in the following Section, turn to the Appendix on page 40.

7.1 Check

If either player puts his or her opponent's King in check, the light labeled CHECK stays "on" until the next move is completed.

7.2 Castling

If you wish to castle, you must **first make the King's move** in the manner described in Section 5.1 on page 14. Then make the Rook's move in exactly the same manner—pressing down on the "from" and "to" squares. **Caution:** if you make the Rook's move first, Grand•Master will think that you are moving the Rook only! See Appendix on page 40 for more details on castling.

7.3 Promotion of Pawns

If you want to promote a Pawn, you must let Grand•Master know which piece you are replacing it with. Here's how the Pawn promotion move must be made. . .do the following in order. . .

A. Press down the "from" square of the Pawn that's being promoted.

B. Press down on the "to" square of the Pawn that's being promoted.

Please note: if no capture is being made on this square, ignore Section C, below, and proceed directly to Section D.

C. If a capture is being made on the promotion square, position the captured piece on its correct space in the Border Area (be sure to press down on this space when placing the captured piece there).

D. Then press down on the space in the Border Area occupied by the piece you wish to replace your Pawn with.

E. Move the "replacement" piece onto the promotion square (be sure to press down on this square, when doing so).

F. Move the promotion pawn to its correct space in the Border Area (be sure to press down on this space, when doing so).

Some considerations about Pawn promotion:

• if the desired replacement piece is not available in the Border Area at stage D above, then press down on the empty Border space of the desired piece and leave your Pawn on the promotion square. Your move is then completed. Subsequently, the Pawn can be moved like the piece it has been promoted to. . .and of course, Grand-Master will remember the Pawn's new status. To remind yourself that such a Pawn has been promoted, you can "cap" it with one of the plastic crowns included with the playing pieces. See Figure 6, below, for a look at a "crowned" Pawn.

FIGURE 6

Please note: when the desired replacement piece does become available, Grand-Master will AUTOMATICALLY remove the promoted Pawn from the board and substitute the correct replacement piece on its square.

• if Grand-Master is promoting one of its own Pawns, it will AUTOMATICALLY replace it with the piece it wants. . .immediately if possible, otherwise as soon as the piece becomes available. If the replacement piece is not available, the promoted Pawn remains on the board and is moved like the piece it has been promoted to. You may "crown" this Pawn to indicate its new status.

• **Light signals and Pawn promotion:** in normal play, when a piece is being moved by you or the computer, its corresponding piece symbol light turns on (see Section 24.2 on page 37). But if a Pawn is being moved like another piece (to which it has been promoted), the piece symbol light for this piece will flash (instead of the Pawn piece symbol light coming on). Also, while the computer is promoting a Pawn, the piece light flashes on for the replacement piece whether or not that piece is available. Remember, you can always use the VERIFY function to find out which piece a Pawn is promoted to (see Section 15 on page 27 for more details on Verification).

SECTION 8

ILLEGAL MOVES

Grand·Master obeys the rules of chess. You'll never see it make an illegal move, and it won't allow you to make one either. For example, if it's your turn to move and you press a vacant square or a piece that cannot be moved legally, you will receive the ERROR SIGNAL. . .Grand·Master will flash all its lights once and emit a distinguishable buzz. You'll also receive an error signal if you press a piece that can move but then press down on a square that it cannot be moved to or if you press down on a wrong square when you're making a capture, in the middle of castling or promoting a Pawn. **If you do receive the error signal in any of these cases, rethink your action and then press the correct square or Border space for the next stage of your move.**

SECTION 9

RESULT OF THE GAME

Refer to the Appendix on page 40 if you need further information on any of the following rules of chess.

9.1 Checkmate

If either player checkmates his or her opponent, the computer will emit 5 long beeps and will rapidly flash the light labeled MATE. The game is then over. The player who checkmates wins the game!

9.2 Stalemate

If either player stalemates his or her opponent, the computer will emit 5 long beeps and will turn on the light labeled DRAW. A drawn game is a game in which neither player is victorious!

9.3 Fifty-move rule

If no pawn has been moved and no piece captured during a sequence of fifty consecutive moves made by one player and answered by his or her opponent, then Grand·Master will announce a draw. The computer will emit 5 long beeps and turn on 2 signal lights. . .the DRAW light will turn on and so will the "top" arrow which tells you to read the top row, indicating the 50 MOVE draw label.

9.4 Three-fold repetition

If Grand·Master recognizes that the position of the pieces on the board has recurred 3 times in the course of the game (it need not be 3 consecutive times), with the same player to move each time, it will emit 5 long beeps and turn on 2 light signals. . .the DRAW light will turn on and so will the "bottom" arrow which tells you to read the bottom row indicating the 3-FOLD draw label.

Caution: if the computer thinks that it is losing, it will try to bring about a three-fold repetition if it can. Of course, if the computer thinks it has the advantage it will avoid repeating moves.

SECTION 10

NEW GAME

When a game is finished, the computer will never object to playing a rematch. . .and you do not need to wait until one game is over before starting another. If you wish to abandon a game in progress to start a new game, just press the SHIFT key and then the NEW key. Grand-Master will then move all the pieces back to their starting positions AUTOMATICALLY. Important: of course, when you press NEW, you erase any previous game memory.

NEW GAME
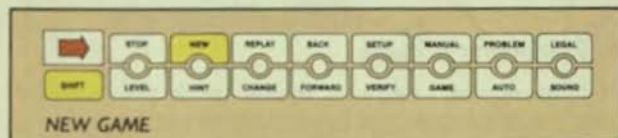
10.1 Arranging the pieces automatically

When all the pieces have been AUTOMATICALLY moved by the computer back to their starting positions (as described above), the WHITE light turns on indicating that the opening move can be made, as outlined in Section 5 on page 14.

Please note: if you wish to stop the automatic arrangement of pieces at any time, just press the SHIFT key and then the STOP key. Any piece in motion at that time will "freeze." To start the action up again, press any square or key other than SHIFT, SOUND or VERIFY.

TO STOP AUTOMATIC ARRANGEMENT OF PIECES
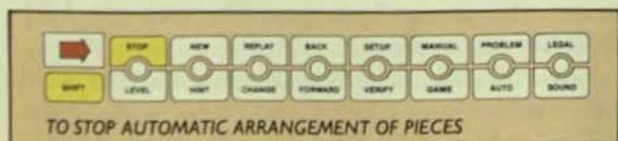
10.2 Arranging the pieces by hand

If you press the VERIFY key after Grand-Master has begun to automatically arrange the pieces, the computer will stop moving the pieces and assume that you intend to arrange the pieces yourself, that is, move them back to their starting positions. After the pieces are back in their starting positions, press the GAME key (this sets up the normal play of you vs. the computer again) and the WHITE light will turn on indicating that the computer is ready for a new game.

TO ARRANGE PIECES BY HAND

VERY IMPORTANT: whenever you switch the power off and then on again, the computer assumes that a new game is beginning and it expects to find the pieces in their starting positions on the board. (See Figure 2 on page 10 for starting positions.) The computer also automatically sets its Level of Play on Level 2. Also note, when you switch the power off and then on again, all previous play has been erased from the computer's memory.

INTRODUCTION TO THE SPECIAL FUNCTIONS

By now you've probably played a few games against the computer and discovered many of its extraordinary features. To learn more about its special functions, read the following Sections.

11.1 Modes of operation

Grand•Master has 6 different "modes" of operation. That is, there are 6 possible ATTITUDES the computer can assume. Here are the 6 modes and a brief description of each. . .

A. **GAME MODE.** . .this is the mode you've been operating in so far. It's the normal mode for playing against the Grand•Master—you play one color, the computer plays the other.

B. **AUTO MODE.** . .in this mode, the computer makes the moves for both sides, White and Black. That is, it plays against itself.

C. **MANUAL MODE.** . .in this mode, the computer does not make any moves at all. You, playing by yourself, make the moves for both sides or you challenge a human opponent to a game and you each move your own pieces pressing down on the "from" and "to" squares and arranging your captured pieces on their correct Border Area spaces as in GAME mode. In both instances, Grand•Master will remember all moves, check that they are legal and announce the result of the game.

D. **SETUP MODE.** . .Use this mode to "set up" special positions on the board with pieces of your choice. The computer will note where you've placed each piece— and then, if you wish, will switch to a different mode

and play these pieces from their set up positions created by you. When setting up pieces, the movements you make on the board with the pieces do not have to comply with the rules of chess.

E. **VERIFY MODE.** . .use this mode if you think any pieces on the board are in the wrong places. When the computer is in VERIFY mode, it will tell you by light and sound signals where each piece should be.

F. **PROBLEM MODE.** . .in this mode, Grand•Master will try to find a forced mate for the side it is moving.

11.2 Selecting a mode

You can set the computer in any mode you wish by pressing certain control keys. Each of the modes has a corresponding control key. In fact, you've probably made use of these keys in previous play. Here's a few details about the mode keys on the control panel. . . The keys are arranged in 2 rows. VERIFY, GAME and AUTO keys are in the bottom row. To select any of these 3 modes, just press the corresponding key. SETUP, MANUAL and PROBLEM keys are in the top row. To select any of these 3 modes, first press the SHIFT key then press the appropriate key.

Use of the SHIFT key: when you press the SHIFT key, the arrow-shaped light above it turns on pointing to the top row of keys. When this light is on, the computer expects you to press down a key in the top row. If you change your mind and decide to press a key in the bottom row, you must press the SHIFT key once again. The arrow light goes out indicating that Grand•Master expects you to press a key in the bottom row. See Figure 7 for an illustration of the SHIFT key in use.

FIGURE 7
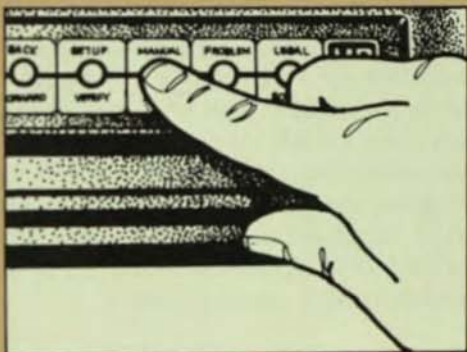
If you press the GAME key when the shift arrow is on, the computer will assume you pressed the MANUAL key and will go into MANUAL mode.

If you press the GAME key and the arrow is not on, the computer would go into GAME mode.

11.3 The mode lights

When the computer is not in GAME mode, one or two red lights will be on to show you exactly which mode it is in (these lights turn off if you press the LEVEL key to view Level of Play, as in Section 4 on page 12). The two red arrows to the right of the WHITE and BLACK lights are indicator lights and will direct you to view either the top row or the bottom row of numbers and words. Look to these signal lights to display the mode you're playing in. For example, look at the illustrations of the control panel in Figures 8, 8A and 8B. If the AUTO light is on with the bottom arrow light, Grand·Master is telling you it's operating in PROBLEM mode. If the AUTO light is on with the top arrow light, Grand·Master is telling you it's playing in MANUAL mode. If the AUTO light is on and neither arrow light is on, Grand·Master is playing in AUTO mode.

FIGURE 8

PROBLEM MODE

MANUAL MODE

AUTO MODE
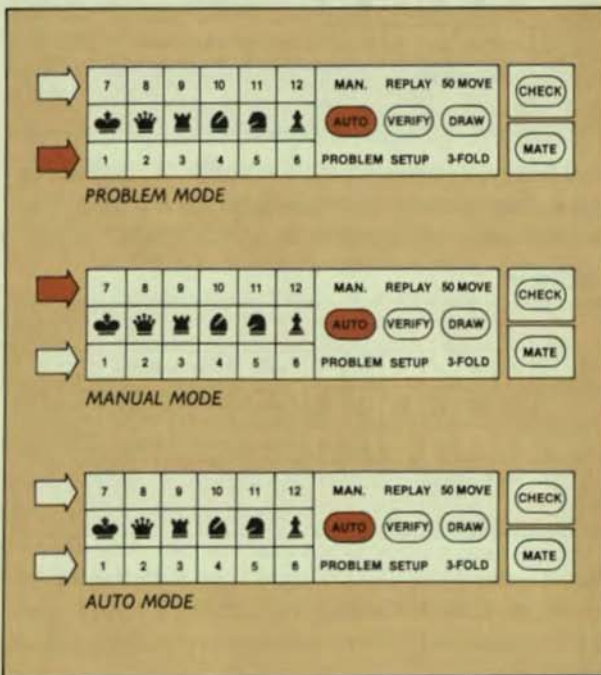
If the VERIFY light is on with the bottom arrow light, Grand•Master is in SETUP mode. If the VERIFY light is on with neither arrow light on, Grand•Master is operating in VERIFY mode.

FIGURE 8A

SET UP MODE

VERIFY MODE
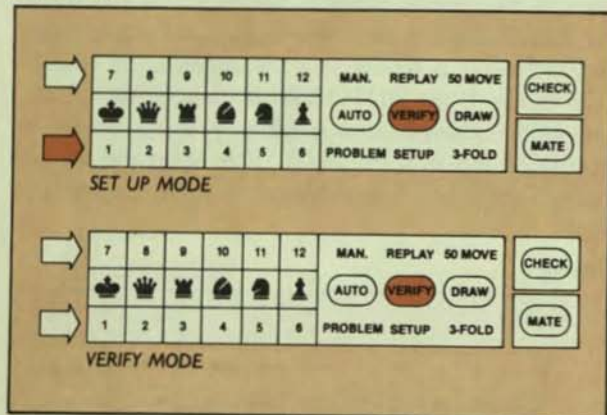
And finally, if neither VERIFY nor AUTO lights are on and the top and bottom arrow lights are also unlit, then Grand•Master is playing in its normal GAME mode.

FIGURE 8B

GAME MODE
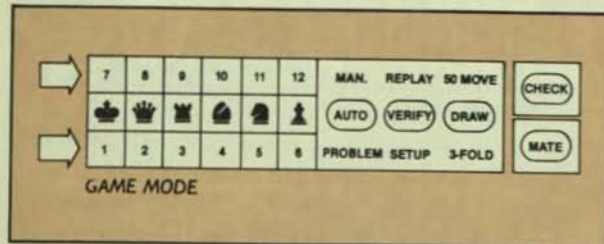
Please note: if the VERIFY light is on with the top arrow light, Grand•Master is conducting a replay. This is not a mode but rather a function and is discussed on page 33.

11.4 Combining the modes

Grand•Master is so versatile it allows you to switch from one mode to another as often as you wish, anytime you want. For example, you can start a game in MANUAL mode making moves for both sides; then you can switch to AUTO mode and command the computer to play against itself from the resulting position; then press GAME mode and you can play the White side while the computer plays the Black side; and then, a few moves later, you can "change sides", if you wish. . .you play the Black pieces and the computer plays the White pieces (see Section 21 on page 36 for more details on "Changing Sides").

Now we'll discuss each of the modes in detail, except for the GAME mode which you've already experienced (that's you vs. Grand•Master).

SECTION 12

AUTO MODE

If you'd like to sit back and watch the computer play itself, press the AUTO key. Grand·Master will then make successive moves for both White and Black, playing until it finishes a game or until you give it further instructions.

SECTION 13

MANUAL MODE

If you press the SHIFT key and then the MANUAL key, Grand·Master will expect the moves for both White and Black to be made by you or by you and a human opponent. The computer's only role is to check that the moves you make are legal and to memorize them so that you can, if you like, take them back or replay them (see Section 17 on page 31 "Taking Back Moves" and Section 18 on page 33 "Replay").

Two novices playing against each other may find it helpful to put Grand·Master in MANUAL mode. The players could sit down on opposite sides of the machine—just as if it was an ordinary chessboard—and make moves against each other as outlined in Section 5 on page 14. As long as they play in the prescribed manner, the computer will act as an arbiter and warn them if they try to do anything illegal (as described in Section 8 on page 18). Grand·Master will also be able to help them by offering hints for moves (see Section 19 on page 35 for details), or by demonstrating all possible legal moves for any piece (see Section 22 on page 36 for details). When the game is over, the computer will announce the result, as explained in Section 9 on page 18.

The MANUAL mode is also useful if you wish to begin a game between you and the computer with a particular opening variation. To do this, press the SHIFT key and then the MANUAL key, then make the desired series of moves for White and Black. Then press the GAME key and the CHANGE key when you want the computer to make the ensuing moves for the side whose turn it is.

SECTION 14

SETUP MODE

There are various reasons why you may want to set up a special position on the board. Maybe you've had to switch the unit off in the middle of a game and now wish to resume play. Or maybe you might want the computer to solve a chess problem for you—that is, find a way to force checkmate within a certain number of moves.

By using the computer's SETUP mode, you can modify a position already arrived at during play. . .by adding or removing pieces or by changing their locations. You can also set up a complete new position on the chessboard. To do any of these things, start by pressing the SHIFT key and then the SETUP key. Now you're ready to do some "setting up". . .

If you wish to make one or two alterations to an existing position, ignore the following Section "Clearing the Board" (Section 14.1) and go on to Sections 14.2 to 14.6.

Please note: if you wish to set up a complete new position, you might find it easier to "clear the board" as outlined in Section 14.1 below.

14.1 Clearing the board

First, make sure you have pressed the SETUP key, then to make the computer clear the chessboard so that a complete new position can be setup, press the SHIFT key and then the NEW key.

Please note: once the computer is in SETUP mode, the NEW key has a very different use from its normal function in GAME mode. If the NEW key is pressed in GAME mode, it will return all pieces to their starting positions to start a new game. When you press the SHIFT and NEW keys in SETUP mode, the computer

will start removing all the pieces to their correct spaces in the Border Areas. To stop this action, press the SHIFT key and then the STOP key; to start the action up again, press any square or key other than SHIFT, SOUND or VERIFY.

If you prefer to clear the board by hand rather than automatically as above, do the following in order. . .

A. First, be sure you've pressed the SETUP key, then press the SHIFT key and then the NEW key.

B. Then press the VERIFY key and move the pieces from the chessboard squares to their proper spaces in the Border Areas.

Note: you do **not** have to press the "from" squares and the "to" spaces to do this!

C. Now press the SHIFT key and then the SETUP key again to return from VERIFY mode to SETUP mode.

14.2 Adding, transferring and removing pieces

When the computer is in SETUP mode, you are free to transfer pieces from spaces in the Border Areas to squares on the chessboard, or from one square of the board to another, or from the chessboard squares to the Border Area spaces, to position them in whatever way you wish. All you have to do to move a piece is to press it down on its "from" space or square and then press it down on its "to" space or square. As long as you do this, the computer will know where every piece is positioned. "Setting Up" pieces is done just like making moves in the course of a game except that in SETUP mode, these moves need not be legal ones (they must be legal positions, however). Again, the piece symbol lights will indicate which piece is being moved. . .and if you press down a piece and then decide not to move it, press it down again to clear the action.

14.3 Transforming Pawns into pieces

In Section 7.3 on Pawn promotion, you discovered that there are some situations where a Pawn on the chessboard is treated like another piece (a Queen, Rook, Bishop or Knight). Such a situation can be brought about by using SETUP mode. . .that is, you can instruct Grand•Master to regard a Pawn as another piece. This means that you can, for example, set up a position in which a player has two or more Queens. To transform a Pawn in SETUP mode, do the following in order. . .

A. Press down on the square occupied by the Pawn.

B. Then press the CHANGE key. The QUEEN piece symbol light will flash rapidly. If you press the CHANGE key a second, third and fourth time, the piece symbol lights for Rook, Bishop and Knight will flash on in turn. A fifth pressing of the CHANGE key will activate the Pawn piece symbol light and a sixth pressing of the key will make the Queen piece symbol light start flashing again. The computer is asking you which piece you want as the replacement piece for the Pawn!

C. When the piece symbol light for the desired replacement piece does flash on, press down once again on the square occupied by the Pawn—or if you desire, move the Pawn to another square and press it down there.

D. The Pawn can now be "crowned" to display its new status.

14.4 Before resuming play

When you've finished setting up a position on the chessboard, you must make sure that Grand•Master knows which side is to move next. If the last square or space you pressed was occupied by a White piece, the WHITE indicator light will have turned on. This means that the computer expects White to make the next move; if you wish Black to move next, press the CHANGE key now while Grand•Master is still in SETUP mode (similarly, you would press CHANGE if the BLACK light was on and you wanted White to move next).

When you are ready to play, select the mode you desire by pressing its corresponding key.

Please note: if you select GAME mode, the computer will assume that you will be playing on the side that moves next. To tell Grand•Master to make the next move, press CHANGE key after selecting the mode.

14.5 Illegal positions

If you've set up a position where a player has a Pawn on the back rank, or if you've left one or both of the Kings off the chessboard, or if it is your turn to move and your opponent is in check, the computer will not allow play to proceed because these are illegal positions—they couldn't possibly arise as a result of a legal sequence of moves from the starting positions. If you have set up pieces in illegal positions, Grand•Master will tell you so when you change from SETUP mode to another mode. The computer will emit 2 buzzes and all the lights will go out. Once you receive this "illegal position" signal, play CANNOT proceed (although you can, if you like, "verify" the locations of the pieces). See Section 15 on page 27 for details on "Verification"). After determining which pieces are illegally placed,

press the SHIFT key followed by the SETUP key again and modify the pieces' positions to make them legal.

14.6 After resuming play

It is important to realize that if you press the SHIFT key and then the SETUP key while a game is in progress, you *erase the computer's memory of all moves made during the last game.* The use of the BACK key and the REPLAY function will then be limited under these circumstances. You will be able to "Take Back Moves" only as far as the position you've set up (see Section 17 on page 31 for more details on "Taking Back" moves) and you will be able to replay the game only from this same position, not from the very beginning of the game (for more details on "Replay," see Section 18 on page 33).

Also consider the following after resuming play from SETUP mode:

• if you have your King and one or both of your Rooks on their starting squares after you have used SETUP mode, the computer will assume that you HAVE NOT lost your right to castle with these pieces.

• when you take the computer out of SETUP mode, the next move cannot be a CAPTURE EN PASSANT. If you do wish to construct a position where an en passant capture is possible, set up the positions as it would exist a move earlier, then make the move which permits the capture.

• if you've told the computer to regard a Pawn as a different piece (see Section 14.3 on page 25 for "Transforming Pawns into pieces") and a piece of the appropriate type and color is available in the Border Area, or becomes available at a later date, the computer will automatically remove the Pawn from the board and replace it with the appropriate piece. See the note at the end of Section 7 on page 17 for the use of the signal lights in Pawn transformation.

SECTION 15

VERIFY MODE

If you accidently knock some pieces off the board and you can't remember where they belong, Grand•Master will tell you where they should be positioned by means of an interesting verification process. Grand•Master will also tell you if there is something wrong with the positions of pieces already on the board. The computer does this by emitting a very special signal. . .it will flash all of the "piece" symbol lights in random order if it cannot find a piece where it expects to (see Section 24.2 on page 37 for more details).

15.1 Verifying particular squares

To find out what piece should be on a particular square or Border Area space, do the following in order. . .

A. Press the VERIFY key.

B. Press down on the square or space in question on the board. If the computer emits a double beep and a piece symbol light turns on, then Grand•Master thinks that the piece it is lighting up should be in that position. **Please note:** the color of the piece is also identified by either the WHITE or BLACK indicator light turning on.

If the square or space should be vacant, the computer will beep once and no piece symbol light will turn on. **Important:** if the square you've pressed is occupied by a Pawn that has been transformed, the piece symbol light representing the Pawn's new identity will flash.

15.2 Verifying the entire position

If you like, you can make Grand•Master clarify the entire position of all the pieces on the board. It does this by putting all the pieces in their correct places by AUTOMATIC means, that is, moving the pieces itself. This is called the **Auto Verify Function** and it can be

very useful if lots of pieces get knocked over. Here's how to "Auto Verify". . .

A. Put all 32 pieces on their correct spaces in the Border Areas.

B. Press the VERIFY key twice. The computer will now start moving the pieces one by one to their correct squares on the chessboard. If you press the SHIFT key and then the STOP key during this process, you can stop the action. Any piece in motion will "freeze." To set the process in motion again, press any square or Border space or any key except SOUND, SHIFT or VERIFY.

When to use the VERIFY mode: you can use VERIFY mode in the course of setting up a position, or even when you're in the middle of making a move. If you verify the position after just pressing a "from" square, the computer will treat your piece as unmoved. If you've already pressed a "to" square and are castling, or making a capture or promoting a Pawn, the computer will verify the position as if you had finished your move. In the case of a Pawn promotion, it will assume that you are making a Queen.

Please note: if you press the VERIFY key while the computer is performing a complete rearrangement of pieces (see Section 10.2 on page 19, 14.1 on page 24, 15.2 on page 27 and 18.1 on page 33 for more details), the computer assumes that you are completing the rearrangement yourself. . .manually!

SECTION 16

PROBLEM MODE

The chess problems you see in newspapers and magazines are usually worded "White to play and mate in two moves" (or three moves, or some other number). This means that the solver must find a way for White to force checkmate in a certain maximum number of moves, no matter how Black tries to defend himself or herself. A "mate in two moves" means that the winning side makes two moves at the most. A "mate in three moves" means the winning side makes three moves at the most, and so on.

Please note: White is usually chosen to move and find the mate.

Grand•Master loves to do Problem Solving! It can find a forced mate in anything up to five moves. If you select PROBLEM mode on Level 1, the computer will look for a mate in ONE move; if you select Level 2 in PROBLEM mode, the computer will try to find a forced mate in two moves. . .and so on up to Level 5.
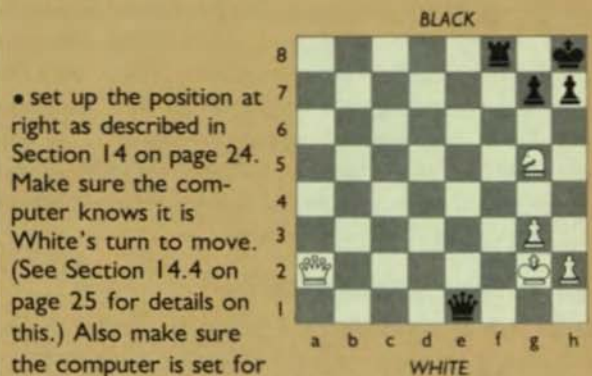
In PROBLEM mode, the level number indicates the number of moves the computer must find the forced mate in.

You'll discover that searching for a forced mate in as few as five moves can be a very complicated task, and it could take Grand•Master a considerable amount of time to do so. In most cases, you'll need to use SETUP mode before using PROBLEM mode. See Figure 9, on the right, to discover how Grand•Master solves a mate problem. . .

Important: it will take approximately 9 minutes for the computer to make the first move. We use algebraic notation to indicate the moves for each side!

FIGURE 9

In this position, you want Grand•Master to find a mate for White in FOUR moves.

BLACK

WHITE

• set up the position at right as described in Section 14 on page 24. Make sure the computer knows it is White's turn to move. (See Section 14.4 on page 25 for details on this.) Also make sure the computer is set for Level 4 because in PROBLEM mode, the level number indicates the number of moves the computer must find the forced mate in. Level 4 then would be 4 moves.

• now press the SHIFT key and then the PROBLEM key. The blinking WHITE light shows that the computer is thinking over White's first move. Nine minutes will pass. The computer will then beep and make the following move. . .Ng5-f7 + .

WHITE'S 1ST MOVE

You must now make a first reply for Black, the defending side. Try. . . Kh8-g8. Play it on the board in the normal manner. . .

BLACK'S 1ST MOVE

The WHITE light begins blinking again. Of course, at this point, Grand•Master has to find the mate in three moves. The computer has switched itself automatically to Level 3. After a few minutes, the computer makes the following move. . . Nf7-h6+.

WHITE'S 2ND MOVE

You must now reply for Black. . .play Kg8-h8.

BLACK'S 2ND MOVE

The computer then responds by making the following move. . . Qa2-g8+.

WHITE'S 3RD MOVE

You must now reply for Black. . .play Rf8xg8 to capture White's Queen.

BLACK'S 3RD MOVE

Then the computer responds by making the following move to bring about Checkmate. . . Nh6-f7. You will hear five long beeps and the MATE light will start flashing. White found a mate in the following FOUR MOVES:
1. Ng5-f7+. . .
2. Nf7-h6+. . .
3. Qa2-g8+. . .
4. Nh6-f7.

WHITE'S 4TH MOVE/CHECKMATE

Alternate Solution: It is interesting to note that Black could have played a different first move. . .namely Rf8xf7 and capture the White Knight. To find out how White would have responded, make use of the BACK key (discussed in great detail in Section 17 on page 31). Just press the SHIFT key and then the BACK key. Now press them both again. Grand•Master will take back the moves of the solution, one at a time. When it is taking back the first move that you had made for Black (that's Kh8-g8), press the SHIFT key and then the STOP key. Play will now stop and you can redo Black's move. . .now Rf8xf7*. **See Figure 9A to discover how Grand•Master solves the mate problem in an alternate way.**

The Signal lights in Problem Mode: If the computer discovers that it is impossible to force checkmate within the required number of moves, it will signal you by beeping and ceasing to blink the color Indicator light that was flashing (the WHITE or BLACK color light will then be on continuously).

Remember, the computer cannot solve problems for mate in more than five moves, so if you repeatedly press the LEVEL key while Grand•Master is in PROBLEM mode, you'll see that after displaying Level 5, the computer will automatically return to Level 1 (not onward to Level 6). If you select PROBLEM mode when the computer is already on Level 6 or higher, again the computer will automatically switch to Level 1. The result will the be following. . .you'll quickly hear a beep and unless there is an immediate mate in that position, the WHITE or BLACK color light will be on continuously (not blinking), indicating that there is no mate to be found in one move and you'll have to reselect the level.

CAUTION: Never press the STOP key any time during PROBLEM mode.

---

*Before making Black's move, reset the computer to Level 3, so it can find a mate in 3 remaining moves. The computer had automatically set itself on Level 1 before it had played its final checkmating move in the last solution. Remember, the computer **does not** automatically change its level when moves are "taken back".

FIGURE 9A

The alternate solution illustrated! Black moves Rf8xf7 and captures the White Knight.

BLACK'S 1ST MOVE

The White light starts blinking indicating Grand•Master is thinking through its next move. It then responds by playing. . .Qa2-a8+.

WHITE'S 2ND MOVE

You reply for Black by moving. . .Qe1-e8.

BLACK'S 2ND MOVE

The computer then sets itself for Level 2 and plays the following move. . .Qa8xe8+ to capture Black's Queen.

WHITE'S 3RD MOVE

You then respond by moving Black. . .Rf7-f8.

BLACK'S 3RD MOVE

The computer responds by making the following move to bring about Checkmate...Qe8xf8+ and captures Black's Rook.

WHITE'S 4TH MOVE/CHECKMATE

TAKING BACK MOVES

In tournament play between human opponents, the "touch-move" rule is enforced. This means that if you touch a piece on the board, you must move that piece if you can. Once you have completed a move with a piece and taken your hand off of it, then there is no question of taking your move back. Grand•Master doesn't enforce this rule. In fact, it has no objection to you taking a move back, provided you follow the instructions below. . .

17.1 Taking back an incomplete move

If it's your turn to make a move and you press one of your pieces down on its square, but then decide not to move this piece at all, then just press it down a second time to negate this move. The piece symbol light for this piece will go out and you are free to move another piece. The above action is possible in both GAME and MANUAL modes.

17.2 Taking back a completed move

If you've pressed a piece down on its square and then press a square to which this piece can legally move, but then decide to make an entirely different move... you'll need to use the SHIFT and BACK keys to negate this move!

Here's how to negate a completed move. First, finish carrying out the move you wish to reject. If such a move involves a capture, castling or a Pawn promotion, the full sequence of operations must be completed (as described in Section 6 on page 15, 7.2 on page 16 and 7.3 on page 16).

Once you have completed the move you wish to reject, press the SHIFT key and then the BACK key. Grand•Master will AUTOMATICALLY take back the move you just completed. You can now make another

move in its place. Similarly, you could make the computer "take back" moves of its own.

17.3 Taking back a series of moves

It's also possible to take back an entire series of moves made by both sides. To do so, press the SHIFT key, then press the BACK key. Then, before pressing any other squares or keys, press the SHIFT key again and then the BACK key again. The computer will now carry on retracting moves one after the other (in one second intervals). The computer will continue to do this until you instruct it to stop or until it arrives back at the starting position or until it arrives back at the last position you "set up" in SETUP mode. (See Section 14 on page 24 for more details.)

To halt this "taking back" operation, press the SHIFT key and then the STOP key. Grand•Master will finish retracting the move it is currently dealing with and will await your next move or further instruction.

Please note: this action is called "Taking Back in Steps". It enables you to return to a position that arose earlier in the game and analyze it. After you've done so, you can, if you wish, go back further to an even earlier position and analyze that. To return to the position that occurred just before the one you've been analyzing, simply take back one move as described in Section 17.2. To return to a position that arose earlier, proceed as in Section 17.3 making correct use of the SHIFT, BACK and STOP keys.

The BACK key and checkmate: the BACK key may even be used after the computer has announced the end of the game. If you make a blunder that allows Grand•Master to checkmate you, take back the mating move, take back your blunder and then make a better move in its place to continue the game!

17.4 The FORWARD key

The key marked FORWARD is used to cancel out the operations of the BACK key and to "step forward" in the sequence of moves you've been taking back. To do this, just press the FORWARD key once and the last move retracted will be AUTOMATICALLY restored. Press the FORWARD key twice in succession and an uninterrupted sequence of moves, originally played by you or the computer, will AUTOMATICALLY be played all over again. In this way, you could return to the last position reached in the actual game—you can step backwards or forwards in the same sequence of moves as many times as you want before resuming play.

When an uninterrupted sequence of moves is being replayed, you can halt this action by pressing the SHIFT key and then the STOP key—the effect is the same as when moves are being retracted.

You may wish to halt the replaying action if you come to a position you want to analyze. Afterward, you may press the FORWARD key again, to have the next move in the sequence replayed, and analyze the position resulting from that. Or, to have several more moves replayed, press the FORWARD key twice; then, when you come to the next position you want to analyze, press the SHIFT key and then the STOP key.

If you're playing a game against the computer and it makes a move that you did not anticipate, use the BACK and FORWARD keys to make Grand•Master demonstrate the move it just made.

Caution: see the warnings in Section 18.3 on page 34 about the use of the REPLAY function. Such cautions also apply when you use the BACK and FORWARD keys.

SECTION 18

REPLAY

After a game is played, most chess players find it interesting to review their moves. As you have just discovered in Section 17, you can re-examine the whole course of a game from beginning to end by using the BACK and FORWARD keys. A simpler way of doing this, however, is to use the REPLAY function. To do so, just press the SHIFT key and then the REPLAY key. Grand•Master will then return the pieces to their starting positions and automatically replay all the moves made in the game.

One distinct 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) allowing you to correct any errors. Or if you prefer, you can take notation during the replay itself if you've decided that it's a game you wish to keep. This is a nice option for a new player. . .for sometimes taking notation during an actual game can disturb his or her concentration.

18.1 Conducting a replay

A replay is not only possible at the end of a game—you may also conduct a replay while the game is still in progress (in this case, the game can be resumed in the normal manner after the moves have been replayed to the current position).

To commence a replay, press the SHIFT key and then the REPLAY key. Grand•Master will now begin to replace the pieces in their starting positions and will start to replay the game automatically. If you press the VERIFY key while the computer is rearranging the pieces, the action will stop and Grand•Master will assume that you wish to move the pieces back to their starting positions by hand. To start the replay action

at this point, you will need to press the SHIFT key and then the REPLAY key once again.

Grand·Master replays a game at the rate of about 3 or 4 seconds per move. When the replay is over, you can resume an interrupted game in any of the normal ways. . .by making a move. . .or by pressing the CHANGE key after switching modes if appropriate. . . or by pressing the AUTO key.

18.2 Halting a replay

You may want to halt a replay that's in progress, especially if you wish to take a further look at a particular position that arose during the game. To do this, press the SHIFT key and then the STOP key. If Grand·Master is moving a piece, it will complete the move. Then the replay will halt. You now have the following options. . .

A. By using the FORWARD key, you can "step forward" to the current position reached in the game (you may also use the BACK key, as explained in Section 17 on page 32).

B. Or you can press the SHIFT key and then the REPLAY key again. The computer will return the pieces to their starting positions and begin the replay all over again.

C. Or you can carry on play from the position arrived at in the replay. You can select any mode or make use of any of the functions.

18.3 Warning

If you want a replay to be finished, you must take care not to do anything that would affect the computer's memory of the moves made in the game.

Suppose you interrupt a game to conduct a replay after 40 moves have been made. When Grand·Master has replayed as far as move 30, you make a move on the board or press the CHANGE or AUTO keys. Grand·Master would then begin computing a move from the position at move 30. It is important to understand that the computer's memory of moves 30 to 40 in the game you've been playing is now erased. It is now impossible to finish your replay or to "step forward" to the position you had reached at move 40. As you can see, if you press either CHANGE or AUTO during a replay, you will erase any forward memory. You will erase all previous game memory any time you press NEW or SETUP!
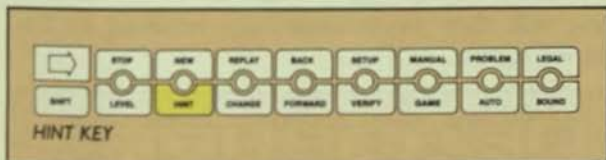
SECTION 19

"HINT" FUNCTION

If it's your turn to make a move and you would like the computer to hint which move it thinks is best for you, press the HINT key. Grand-Master will then shuffle one of your pieces in its square showing you that this is the piece it advises you to move. It's up to you to decide which possible move with this piece would be the strongest.

You can also press the HINT key while the computer is considering its own next move. It will then give you a hint of the move which it considers best so far.

Important: The Hint Function is inoperable when Grand-Master is either in VERIFY, SETUP, BACK or FORWARD or immediately after such modes and functions.


HINT KEY

SECTION 20

IMMEDIATE MOVE

At any time when it's the computer's turn to move, you may force Grand-Master to stop thinking and play immediately. To force the computer to move, press the SHIFT key. Then press the STOP key (to make Grand-Master "stop" computing its move). The computer will then make the move it considers to be the best so far. Remember, if you are playing on Level 12, the computer will NEVER make a move unless you press the SHIFT key and then the STOP key.

Pressing the STOP key to force the computer to "stop" thinking is effective only in GAME or AUTO modes (and of course, always in Level 12 in such modes).

The STOP key may also be used to halt any rearrangement of pieces done automatically by Grand-Master. For example, when Grand-Master is repositioning the pieces for a new game; or when it's transferring pieces from the board to Border Areas in SETUP mode; or when it's transferring pieces from Border Areas to the board in VERIFY mode. To resume automatic rearrangement of pieces in any of these instances, press any square or key other than SHIFT, SOUND or VERIFY.

Also use the STOP key to stop a replay and to stop the computer from taking back or playing forward a series of moves.

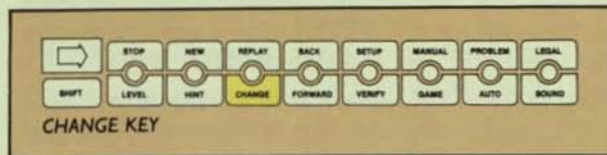Finally, use the STOP key to halt the demonstration of legal moves.

STOP KEY
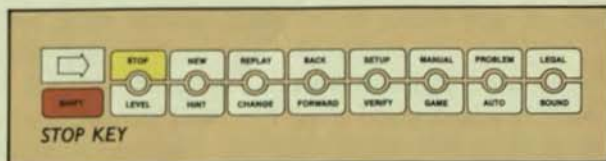
SECTION 21

CHANGING SIDES

If you wish to change sides with the computer, press the CHANGE key instead of making your move. Grand·Master will then take over your position and will expect you to make the moves for the other color. You may change sides as often as you like during a game.

CHANGE KEY

SECTION 22

DEMONSTRATION OF LEGAL MOVES

The computer is able to demonstrate all the legal moves available to any piece in a given position. To make it do so, press the SHIFT key and then the LEGAL key. Then press down on whatever piece you choose, to see all of its legal moves. If the chosen piece has no legal moves, the computer will emit the error signal. If the chosen piece does have legal moves, they will ALL be demonstrated on the board AUTOMATICALLY by the computer, one after another. . .the piece will be returned to its square after each move is demonstrated. To stop the demonstration of legal moves, press the SHIFT key and then the STOP key during this action. If the piece stops any place other than the square that it was on when you asked for the demonstration, just press down on any empty square on the board. . .the piece will then be automatically returned to that "home" square.

LEGAL KEY
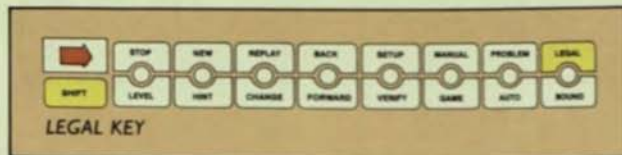
Please note: the piece you choose to be "legally" demonstrated must be the same color of the Indicator light (either White or Black) that is presently on.

SECTION 23

SOUND

Every time you press a key or square, you will hear a "beep" to confirm that your action has been registered by the computer. However, if you prefer Grand·Master to operate without these sounds, press the SOUND key. To switch the sound back on again, press the SOUND key once more.

Please note: if the sound is switched off, you will still be able to determine an error signal by the light signals.

SOUND KEY
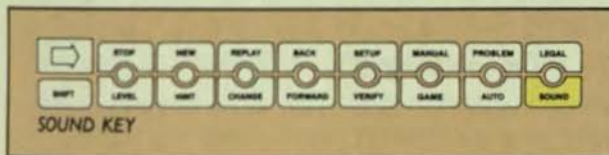
SECTION 24

LIGHTS

The lights signal the following actions or situations:

24.1 The White and Black Indicator lights

One of the Indicator lights blinking slowly: this means that Grand·Master is computing the next move for the indicated color side.

One of the Indicator lights flashing fast: this means that a move is being made for the side indicated by that color.

One of the Indicator lights continuously on: it means one of the following. . .

A. In VERIFY mode, if a piece symbol light is also on, it means that that particular piece in that particular color should be on the square or space that you pressed.

B. In SETUP mode, it means that the computer is expecting that color to make the next move (this is because the last time you pressed a square or space occupied by a piece, the piece was of this color.

C. In other modes, it means that it is your turn to move.

Please note: sometimes in AUTO mode after using a special function, the WHITE or BLACK Indicator light will stay on continuously and the computer will not be making any moves. In this case, just press the CHANGE key to prompt Grand·Master into computing.

24.2 The six piece symbol lights

One piece symbol light on: it means one of the following. . .

A. If either the top or bottom arrow light is also on, it means that the Level of Play is being displayed. (See Section 4 on page 12 for more details.) When the level is being displayed, the WHITE or BLACK Indicator lights and the MODE lights will NOT be on.

B. In VERIFY mode, it means that the indicated piece should be on the square or space you pressed.

C. In all modes except VERIFY, it means that a move is being made with the indicated piece.

One piece symbol light flashing: it means one of the following. . .

A. With NO White or Black Indicator light on, it means that you are capturing the indicated piece and must now transfer it to its proper space in the Border Area.

B. With ONE White or Black Indicator light flashing, it may mean that a move is being made by a Pawn representing the indicated piece (see Sections 7.3 on page 17 and 14.3 on page 25 for more details). It could also mean that a Pawn is being promoted to the indicated piece. If the Pawn light is the one that's flashing, it means that a Pawn is being removed from the board after a promotion. If it is the Rook light that is flashing, it may mean that you have pressed the Rook's "from" square in a castling move.

C. With one White or Black Indicator light continuously on, in VERIFY mode, it means that a Pawn representing this piece should be on the square that you've pressed. In SETUP mode, it means that you have the option of making a Pawn represent the piece that is indicated by the piece symbol light (see Section 14.3 on page 25 for more details).

• **The King and Rook piece symbol lights flashing in unison:** this means that you are castling, you have made the King's move but still have to make the Rook's move.

• **The Queen, Rook, Bishop and Knight piece symbol lights flashing in unison:** this means that you have moved a Pawn to its promotion square and now have to replace it with a piece.

• **All six piece symbol lights flashing in a haphazard order:** this means the position on the board has become confused. The computer has failed to find a piece on a square where it expected to. Has a piece just been knocked over? If so, put it back where you think it belongs and "verify" it (see Section 15.1 on page 27 for details). If the piece has been repositioned properly, you should be able to continue playing normally. Remember, if several pieces get knocked over, you could use the **Auto Verify** function as outlined in Section 15.2 on page 27.

24.3 The mode lights

When the AUTO light is on alone without an arrow light, you are in AUTO mode; when the VERIFY light is on alone without an arrow light, you are in VERIFY mode. When one of these lights is on with either the top or bottom arrow, it can be displaying MANUAL, PROBLEM or SETUP modes (as explained in Section 11.3 on page 21) or it can be indicating a replay in progress. . .depending on which arrow and which MODE light is illuminated.

Please note: pay particular attention to the MODE lights. You'll notice that in some circumstances the use of a control key for a special function can have the effect of switching modes.

24.4 Lights showing the result of a game

The DRAW light may announce a stalemate or a draw by repetition or the 50-move rule. For more information on draws and on check and mates (announced by the CHECK and MATE lights), see Section 7.1 on page 16, Section 9 on page 18 and the Appendix on page 40.

24.5 The SHIFT arrow

When you press the SHIFT key the SHIFT arrow lights

up indicating that the computer expects you to press a key in the top row. If you decide to press a key in the bottom row, press the SHIFT key first again.

24.6 All the lights on at once

If all the lights come on at once and the machine emits a loud continuous buzz, slide the Power Switch off immediately. Then slide it on again. If the same action results, there's a possibility of a mechanical fault. Slide the Power Switch off again, at once. The unit should be serviced. See Electronic Warranty on the inside front cover of this booklet for details.

APPENDIX

A brief explanation of some chess terms and rules.

CASTLING

Castling is the exception to the rule that a player moves one piece and only one piece, whenever it is his or her turn. Castling involves moving the King and one of the Rooks from their starting positions. The King moves two squares towards the Rook; the Rook jumps over the King, landing on the square in between the one the King vacated and the one the King now occupies.

Castling is NOT permitted in any of the following circumstances:

A. If there is any piece of either color in between the King and the Rook.

B. If the King or the Rook with which you wish to castle has already been moved.

C. If the King is in check (see "Check," below, for more details).

D. If the King's move would take it across or onto a square which is under attack from an enemy piece.

Please note: standard chess practice is to move the King first when castling.

CHECK

If a King is under attack from an enemy piece, that is, if the piece threatens to move immediately onto the square the King occupies, then the King is said to be in check. A player whose King is in check must move out of check immediately. Depending on circumstances, this may be done by moving the King, capturing the checking piece, or interposing another piece between the checking piece and the King. A move which exposes your own King to check is illegal. Also, a King may find itself in double check, that is, under attack from two different pieces at once—if your King is in double check, you must immediately move your King.

CHECKMATE

If a player whose King is in check is UNABLE to respond in any of the ways described under "Check," above, then his or her opponent has delivered checkmate and has won the game.

Please note: more often than not, checkmate is abbreviated to "mate". . .but do not confuse "checkmate" with "stalemate". See Statemate on page 41.

PROMOTION OF PAWNS

When a player advances a Pawn to his or her opponent's end of the board, the Pawn is "promoted." That means it changes into a Queen, Rook, Bishop or Knight, whichever piece the player chooses. Normally, a player would choose a Queen but there are cases where promotion to another piece is better. Such cases of "under-promotion" or "sub-promotion" are extremely rare in actual games but do appear now and again in chess problems.

PAWN CAPTURES EN PASSANT

If a pawn advances two squares on its first move, it may be captured by an enemy Pawn just as if it had advanced one square only. A Pawn may be captured EN PASSANT only on the move immediately following its double advance. No piece except a Pawn may make

a capture en passant. For an illustration of an en passant capture, see Figure 10, below.

FIGURE 10

INITIAL SET-UP

BLACK'S MOVE

WHITE'S MOVE TO CAPTURE
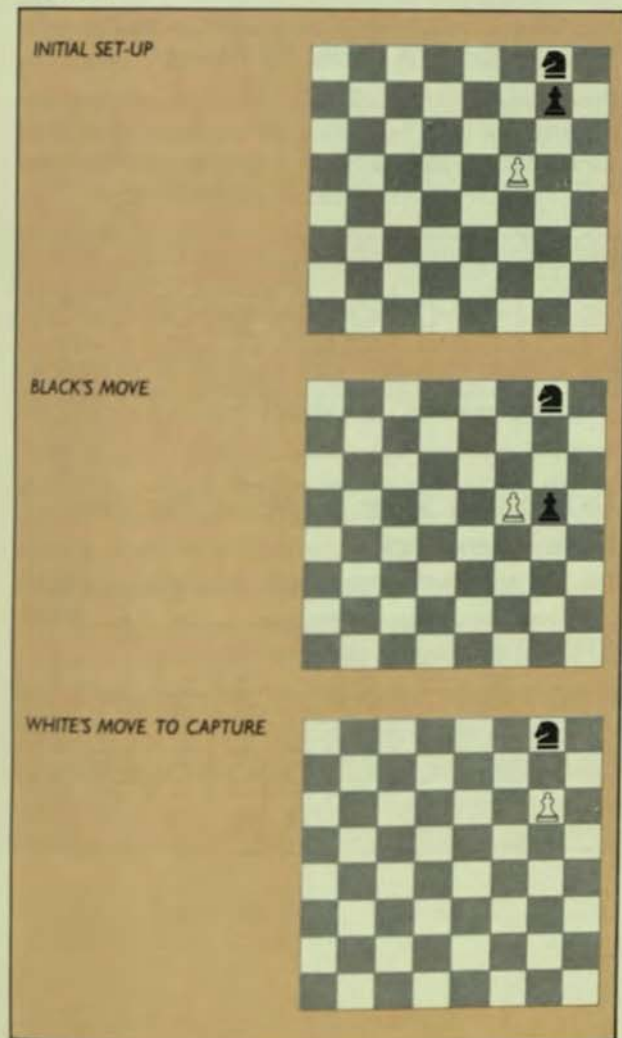
STALEMATE

Stalemate occurs when the player whose turn it is to move has no legal move available and his or her King is not at present in check. This is most likely to happen when a player has only his King left, and cannot move anywhere without exposing himself or herself to check. Beware of giving stalemate when pursuing your opponent's lone King with, for example, your own King and Queen.

FIFTY-MOVE RULE

Article 12.4 of the Laws of Chess states that the game is DRAWN "when a player having the move demonstrates that at least fifty consecutive moves have been made by each side without the capture of any piece or the movement of any Pawn" (this rule allows for one or two exceptions).

Taking the fifty-move rule into consideration, if you've reached an endgame with your King, Bishop and Knight against your opponent's lone King, you must take great care to bring about checkmate within the limited number of moves.

THREE-FOLD REPETITION

According to Article 12.3 of the Laws of Chess, a player may claim a draw "when the same position (a) is about to appear or (b) has appeared, for the third time, the same player having the move each time." Sometimes a player forces a three-fold repetition by a recurring series of checking moves. . .this is called drawing by perpetual check.

A quick-look, illustrative guide to some of Grand•Master's special functions. Just press the keys in their numbered order for the particular action you want!

To Replay A Game

Press SHIFT/REPLAY either after a game is over or any time during a game and all the pieces will move automatically back to their starting positions. Then all the moves made in the game will be replayed at the rate of 3 to 4 seconds per move.
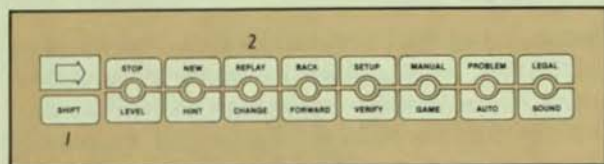

If you wish to *replay a game,* but want to *set up the pieces manually,* do the following. . .press SHIFT/REPLAY/VERIFY. Then move all the pieces back to their starting positions. Now press SHIFT/REPLAY and all the moves will be replayed!
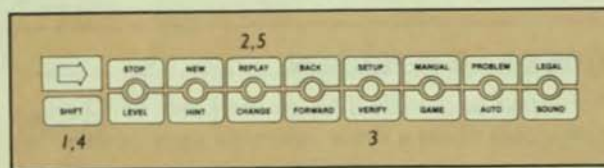
To Take Back A Series Of Moves

Press SHIFT/BACK/SHIFT/BACK to prompt the computer to take back each move played so far in the game, all automatically, at 1 second intervals. Press SHIFT/STOP at any time, to stop such action.
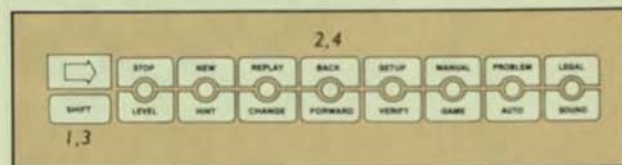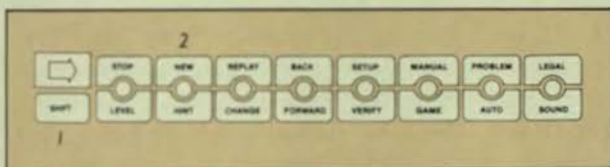

To Replay A Series Of Moves That Have Been Taken Back

Press FORWARD/FORWARD to see a series of moves that were taken back, replayed again. Press SHIFT/STOP at any time, to stop such action.
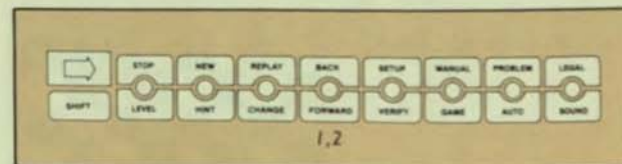
To Start A New Game

Press SHIFT/NEW either after a game is over or any time during a game and all the pieces will automatically move back to their starting positions, ready for a new game.


To Set Up A Position On The Board By Modifying Existing Positions On The Board

Just press SHIFT/SETUP and change positions of pieces to other squares or Border Area positions. Be sure to register their adjustments just as if they were moves by pressing once on a departure square or symbol and once on a destination square or symbol.
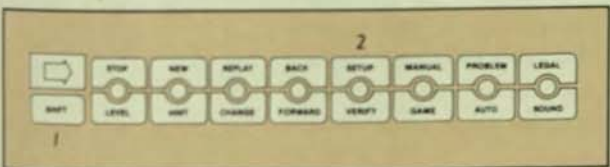

To Clear The Board Automatically In Order To Set Up An Entirely New Position

Press SHIFT/SETUP/SHIFT/NEW and all the pieces on the board will be automatically moved to their proper symbols in the Border Area. You are now ready to register your new positions by pressing the symbol in the Border Area of the piece you wish to place and then pressing the square you wish to move it to.
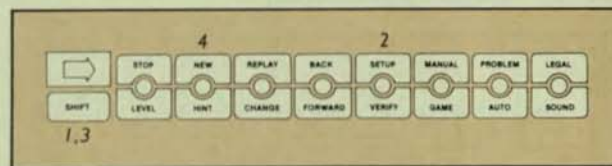
## To Clear The Board Manually In Order To Set Up An Entirely New Position

If you wish to clear the board manually for a setup, do the following. . .press SHIFT/SETUP/SHIFT/NEW/VERIFY. Then move all the pieces manually to their proper symbols in the Border Areas. Just place them there, do not register them. Then press SHIFT/SETUP and you're ready to register your pieces, as above, pressing once on the departure symbol and once on the destination square.
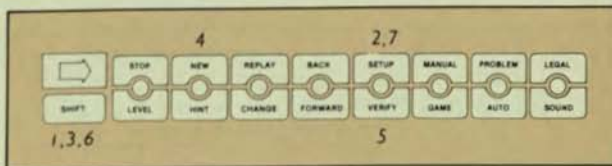
To Verify The Position Of Every Piece On The Board

If you have any doubt where a number of pieces should be positioned, then ask the computer to verify the positions of every piece on the board, all automatically. To do so, manually move all the pieces to their proper symbols in the Border Areas, then press VERIFY/VERIFY. All the pieces will be moved to their proper position on the board automatically.


1,2
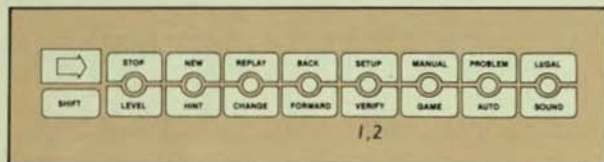
To Promote A Pawn In Setup Mode

Use SETUP mode to set up the desired positions of pieces on the board (place a Pawn in a promotion square). Then press CHANGE—the Queen piece symbol light will flash rapidly, asking you if you want the Pawn to become a Queen. If you want it to be another piece, continue to press CHANGE until the piece symbol light of the desired piece flashes on. *Then press down once on the Pawn's promotion square—the promotion of the Pawn results!*

1
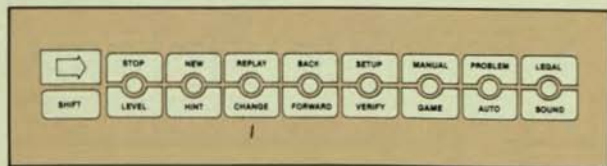
To Ask The Computer To Solve A Chess Problem

Use SETUP mode to set up the desired positions on the board, then do the following. If the WHITE light is on, the computer will play WHITE. If you want the computer to play BLACK, press CHANGE. Now press LEVEL until you see the number "lit up" that corresponds to the number of moves you want the computer to find the forced mate in. Then press SHIFT/PROBLEM. The color indicator light will blink, indicating the computer is thinking about its first move... you will play the other color and reply to the computer's moves.

4

3   2   1
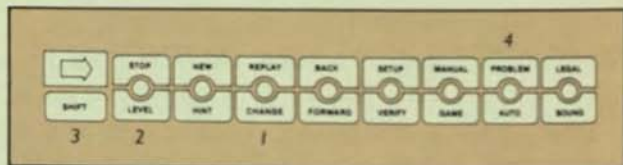
THE CARE AND MAINTENANCE OF GRAND·MASTER

Grand·Master, sturdily built and expertly designed, is a highly sophisticated electronic device that should be treated with great care so it can operate efficiently. Here are some care and maintenance suggestions. . .

• the highly sensitized chessboard should not be touched with anything other than the chess piece bottoms or your fingers or deformation could result.

• the board and pieces must be kept clean with a dust-free cloth and a mild detergent. It is especially important to keep the bottoms of the pieces clean so they can slide with ease. Never use wax to polish the unit or the pieces. If something does spill on the unit, clean it only with a damp cloth and mild detergent.

• always replace protective dust cover on unit when Grand·Master is not in use.

• the unit and its power supply are designed for indoor use only.

• the power supply should not be left plugged into the wall socket when Grand·Master is not in play. Always turn the unit's Power Switch off and unplug its power supply from the wall socket when you are finished playing.

Important: there are no customer serviceable parts in Grand·Master. Please refer to the warranty on inside front cover on how and where to send Grand·Master for repair.

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