DEFECT OR DAMAGE

If a part of your game is damaged or something has been left out. DO NOT RETURN THE GAME TO THE STORE. The store doesn't have replacement parts. Instead, write to us at :

> TIGER ELECTRONICS UK LTD
> C/O CONSUMER PRODUCTS DISTRIBUTION
> CUSTOMER SERVICE DEPARTMENT
> UNIT 2
> LOXLEY ROAD, WELLESBOURNE
> WARWICKSHIRE, CV35 9 JY

In your note, mention the name of your game, the game's model number, and tell us briefly what the problem is. Also include sales slip, date of purchase and price paid. We will do our best to help.
WARRANTY 12 MONTHS FROM DATE OF PURCHASE

TIGER®

Chess

GRENADIER

INSTRUCTIONS

ENGLISH

MODEL: 11-006
11006021IWTIE-01

IMPORTANT INFORMATION

USE OF CHESS PIECES

1 If you are using pieces with magnets in the bases and your move dose not seem to have registered, press down with the **EDGE** of the piece.

Magnets in bases of chess pieces are **NOT** essential to the proper operation of the computer. If a magnet falls out of the base of a piece, continue to use it in the normal way without the magnet and the computer will function correctly.
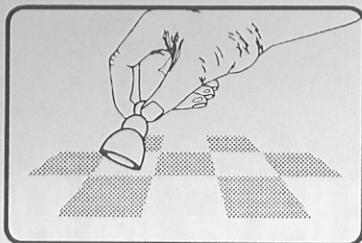
RESET SWITCH

Sometimes computers malfunction due to electrostatic discharge or other electrical disturbances, or when batteries are inserted. If this happens push a thin rod into the RESET hole in the base of the computer and press down for about one second.   This Resets the computer, clears its memory and returns it to normal operation.

WARNING

The chess pieces supplied with this chess computer may be small enough to be swallowed. Please keep the chess pieces out of the reach of small children.

NOT SUITABLE FOR CHILDREN UNDER AGE 3 YEARS.

PLEASE KEEP THIS MANUAL FOR FUTURE REFERENCE.

INSTANT START

This is a brief introduction to your computer. To understand its operation fully, it is necessary to **READ THIS INSTRUCTION MANUAL CAREFULLY.**

CHESS RULES   The rules of chess are explained in "Learn Chess", later in this manual. Your computer knows the rules of chess - **IT WILL NEVER BREAK ANY OF THE RULES**, so if you think the computer has "cheated" check this instruction manual, especially the section on SPECIAL MOVES.

INSERT BATTERIES   Insert the batteries in the base of the computer as specified by the label near the battery compartment. Make sure that the positive tip of each battery matches up with the + sign in the compartment.

POWER ADAPTER   If your computer can work from an AC/DC adapter, check the rating label on the underside of the computer and make sure that any adapter which you use has the correct voltage and polarity. Of course you do not have to use an adapter if you do not want to. You may prefer to use batteries.

SET UP THE PIECES   Place the computer in front of you with the control keys on your right. Set up the pieces in the initial position (see next page) with the white pieces nearest to you.
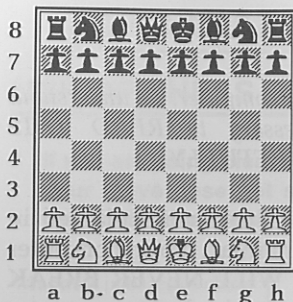
For those of you who are beginners or fairly new to the game of chess, the chess pieces and their symbols are identified in a chart on page 1 of the instruction manual.

Chess board set up for the start of a game.

DISPLAY The computer indicates moves and other information using a *liquid crystal display* (LCD), which is located on the right of the chessboard, above the control keys. Once the batteries are installed or the adapter is connected, the computer should give a sound signal (three rising "beeps"), and the display should show the following:

☐   0:00:00

IF THE COMPUTER DOES NOT RESPOND IN THIS WAY, PUSH A THIN OBJECT INTO THE "RESET" HOLE IN THE BASE OF THE MACHINE AND PRESS DOWN ONCE.

MAKING MOVES We suggest you play your first game with the white pieces. Each square of the chessboard is identified by co-ordinates (a letter and a number), for example E2. (Your computer actually carries these markings on the squares.) Press down with the piece you wish to move - there will be a beep and the co-ordinates of the square will show in the display (together with symbol corresponding to the piece type).

II

IF YOU ARE USING PIECES WITH MAGNETS IN THE BASES AND THE COMPUTER DOES NOT APPEAR TO REACT, PRESS DOWN WITH THE EDGE OF THE PIECE.

Complete your move by pressing the piece down on its new square. The computer will then indicate its reply by displaying the symbol of the piece it wants to move, followed by the co-ordinates of the "from" and "to" squares (e.g. {PAWN}e7e5). The co-ordinates of the "from" square will be "flashing" on and off. At the same time, the red lights at the edge of the chessboard will "flash" to indicate the rank (= horizontal row) and file (= vertical column) in which the piece is located.

Press down with the computer's piece -- there will be a beep and the co-ordinates of the "from" square stop flashing and those of the "to" square start flashing. The "to" square will also be indicated by the red lights. Press down with the piece on its new square to complete the move.


Example of move shown in LCD display.

CAPTURING A PIECE To make a capture, press down with the piece you want to move. Remove the captured piece and press your piece down on the square which the captured piece occupied.

SPECIAL MOVES Sometimes inexperienced players do not understand the special moves -- in particular EN PASSANT and CASTLING -- which are explained in detail in this manual. **REMEMBER -- THE COMPUTER MAY ALSO MAKE THESE SPECIAL MOVES.**

III

EN PASSANT captures An *EN PASSANT* capture is possible when an enemy pawn, on its first move, moves two squares and crosses over a square attacked by your pawn. Your pawn may act as if the enemy had moved only one square and capture it *en passant*, but ONLY ON YOUR NEXT MOVE.
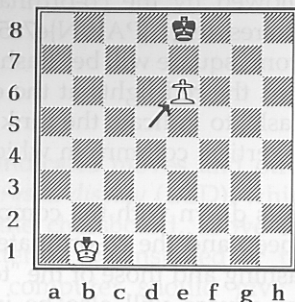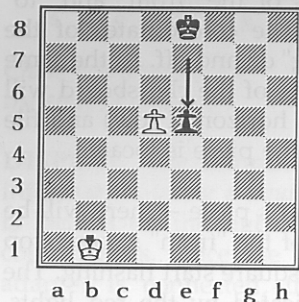
*Black advances two squares: E7 to E5.*

White captures "en passant" by moving his pawn from D5 to E6.

CASTLING This special move allows the king to be brought to a safer position near a corner and at the same time brings the rook into play. This is done by moving the king two squares (in either direction, left or right) towards a corner and the rook in that corner jumps over the king onto the square next to it. For the conditions in which castling is allowed, read the section on CASTLING in "Learn Chess" (pages 7-8).
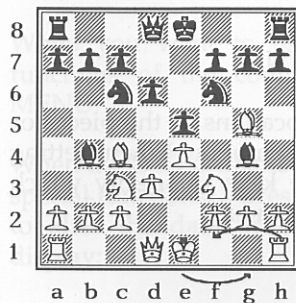
Before castling

After castling

NEW GAME You can start a new game any time you like. Press the key marked NEW GAME, and when the display shows "New game ?" press the OK key (which is also marked HINT). Then if you want the computer to play White, press the MOVE key.

SWITCH OFF AND SAVE THE POSITION When you want to stop playing, press the **ON/OFF** key. The computer switches off but still remembers the position. To resume play, re-press the ON/OFF key.

If four minutes pass without a press on a square or key, the computer switches off automatically. Again, press ON/OFF to continue.

REPLACING BATTERIES If the LCD display goes dim or the computer appears to act abnormally, the batteries probably need replacing.

KEYS AND DISPLAY

THE SIX "PIECE TYPE" KEYS

<KING> <QUEEN> <ROOK>
<BISHOP> <KNIGHT> <PAWN>

These are used to verify the locations of the pieces or to select the piece for a pawn promotion. When "setting up" a position, you use these keys to specify which type of piece you want to insert next.

NEW GAME

Press NEW GAME followed by OK in order to start a new game.

ACTION CHESS

Press this key followed by OK if you want to start a new game at the "Action Chess" rate of play (30 minutes per player for the whole game).

THE TWO "ARROW" KEYS

These keys are used to retract and replay moves.

If the display shows an item on a "menu" (e.g. one of the machine's special functions such as "Set up..." or "Coach..."), you can press >> to view the other items one by one. By pressing <<, you view the items in the opposite order.

If a number on the display is flashing, you can increase it with >> or decrease it with <<.

THE "MENU" (ENTER) KEY

When you want to use one of the more complex functions of the computer, you start by pressing MENU.

When the LCD is displaying data relevant to one of the special functions, a press on this same key enables you to alter the data or bring further details onto the display: --

(a) If the display incorporates a "+" or "-" sign, a press on ENTER enables you to select or cancel the function.

(b) If the display incorporates a number that can be altered, pressing ENTER causes the number to "flash" on and off. It can then be increased or decreased with >> or <<.

(c) If the display incorporates "...", pressing ENTER will generally display a further menu (i.e. a "sub-menu") of items.

THE "MOVE" (CANCEL) KEY

If it is your turn to move, you can press MOVE to change sides with the computer. At the start of the game, this key makes the computer play White.

If the computer is thinking about its move, pressing MOVE makes it cut short its calculations and play the move it currently considers best.

The same key allows you to cancel an operation. If you have just altered a number on the display (and have not confirmed the alteration by pressing OK), a press on CANCEL restores the number to its previous value. If the display incorporates a question mark (preceded by a space), e.g. "New game ?", press CANCEL if you want to answer "no".

THE "HINT" (OK) KEY

Press HINT if you want the computer to suggest a move for you.

When operating one of the special functions, a press on this key tells the computer that you are satisfied with the data on the display. By pressing OK as many times as necessary, you restore normal playing conditions and enable the game to continue. When the display incorporates a question mark (preceded by a space), press OK if you want to answer "yes".

THE "ON/OFF" KEY

Press this key to switch the computer on or off. When you switch on, the game can be resumed from the same position as before.
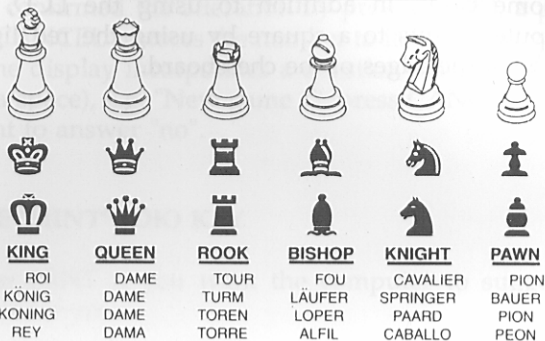
LCD DISPLAY

The liquid crystal display (LCD) has space for 16 letters or symbols. It shows the computer's moves, the clock times for the players, the result of the game, and all other information you need for making use of the computer's features.

LIGHTS

In some cases, in addition to using the LCD, the computer points to a square by using the red lights (LEDs) at the edges of the chessboard.

CHESS PIECES & SYMBOLS
TABLE TOP MODELS

KING	QUEEN	ROOK	BISHOP	KNIGHT	PAWN
ROI	DAME	TOUR	FOU	CAVALIER	PION
KÖNIG	DAME	TURM	LÄUFER	SPRINGER	BAUER
KONING	DAME	TOREN	LOPER	PAARD	PION
REY	DAMA	TORRE	ALFIL	CABALLO	PEON

GRENADIER CHESS FIGURINES

KING

QUEEN

ROOK

BISHOP

KNIGHT

PAWN

BLACK   WHITE

CONTENTS

LEARN CHESS -- THE RULES AND HOW THE PIECES MOVE

8 7 6 5 4 3 2 1

a b c d e f g h
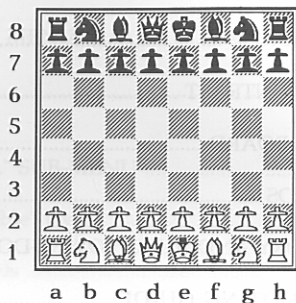
Chess is a game for two players which is played on an 8 x 8 board. At the start of the game the chess board is placed so that there is a white square at each player's bottom right-hand corner.

Each player starts with an army of 16 pieces. In the following chart, the two left-hand columns show how the pieces are represented in the diagrams in this instruction manual. The two right-hand columns show the symbols used in the computer's LCD display.

Manual Display			LCD Display	
♙	♟	Pawns		
♘	♞	Knights		
♗	♝	Bishops		
♖	♜	Rooks		
♕	♛	Queens		
♔	♚	Kings		
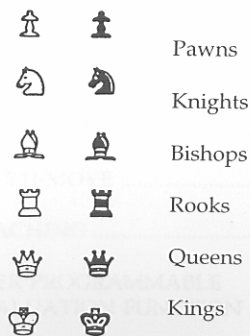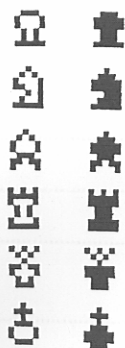
We call the two players White (the player who is moving the white pieces) and Black (the player who is moving the black pieces). White always moves first and then the players move alternately.

WINNING A GAME

The object of the game is to "**checkmate**" your opponent's king. This means putting it in a position where it cannot escape from attack.

A move which attacks the enemy king is called a "check", and you may never make a move which leaves your king in check. In friendly games a player will usually say "check" when he makes a move that gives check.

Checkmate is a move which gives check and to which there is no reply that gets the opponent out of check. **A move which gives checkmate wins the game at once!**

DRAWING A GAME

It may happen that although your king is *not in check at present*, you cannot move any of your pieces without exposing your king to check. This situation is called "stalemate"; when it occurs, the game ends immediately in a draw.

A game can be drawn by agreement between the players; or if both players make 50 successive moves without moving a pawn or capturing an enemy piece; or if the same position occurs 3 times with the same player to move each time (for example, if the players move the same pieces back and forth 3 times).
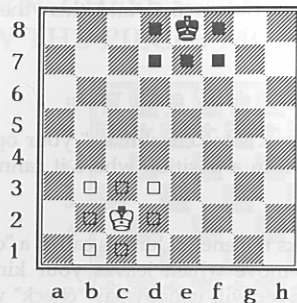
THE KING AND HOW IT MOVES

The king is the most important piece in chess and must be guarded with great care. It moves around slowly, one square at a time in any direction. It may not move to a square which is attacked by an enemy piece, and it may not move to a square occupied by one of its own pieces.

In the above position White's king can move to any of the squares marked □ and Black's king to any of the squares marked ■.

Like most other pieces, the king captures by moving in the same way as when it makes an ordinary move. So the king may capture any enemy piece -- provided it would legally be able to move to that same square if the square was empty.
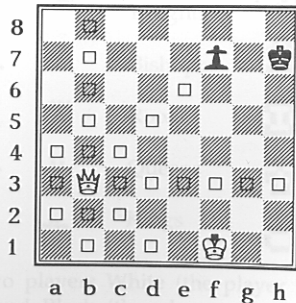
3

THE QUEEN AND HOW IT MOVES

The queen is the most powerful piece on the chessboard because it can move across any number of empty squares at a time in any direction -- horizontally, vertically or diagonally -- and can capture an enemy piece when it arrives on its new square. In the last diagram White's queen can move to any of the squares marked □, or it can capture the black pawn.
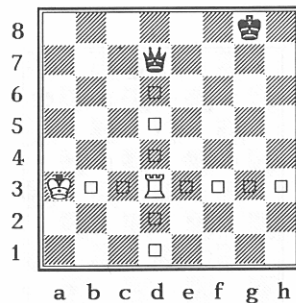
THE ROOK AND HOW IT MOVES

The rook is the second most powerful piece. It can move or capture in a horizontal or vertical direction, over any distance, as long as it is not obstructed by another piece. Here the white rook can move to any square marked □ or capture the black queen.
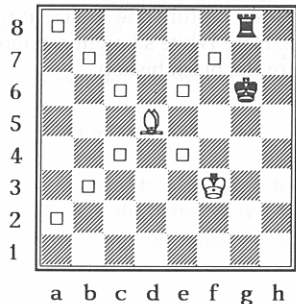
4

THE BISHOP AND HOW IT MOVES

The bishop is less powerful than the rook because it moves diagonally and is restricted to squares of only one colour during the whole game. Bishops can move or capture over any distance as long as they are not obstructed by another piece. In the last diagram White's bishop can move to any square marked □ or capture the black rook.
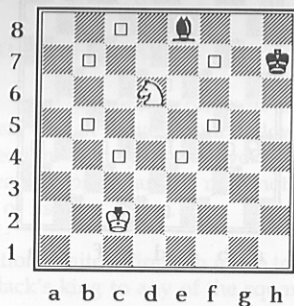
THE KNIGHT AND HOW IT MOVES

The knight is the only piece which may jump over an occupied square. The knight's move consists of two parts, like a letter L. First, it moves two squares in a horizontal or vertical direction; then it moves or makes a capture one square at right angles to the first part of its move. Here White's knight can move to any square marked □, or capture the black bishop.
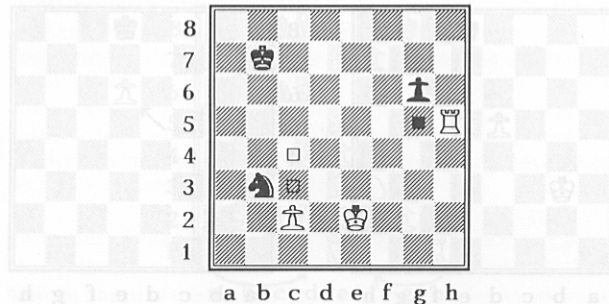
THE PAWN AND HOW IT MOVES

The pawns are the least valuable of all the pieces on the board, partly because they can never move backwards. From its starting square, each pawn may advance one square or two, at the player's choice; but after it has made its first move, it may only advance one square at a time. Another unusual thing about the pawn is that it does not capture in the same way that it moves. Pawns move vertically forwards, one or two squares, but they capture diagonally (one square only, even on their first move). Here the White pawn may move to either of the squares marked □, or capture the black knight. The black pawn may move to the square marked ■ or it may capture the white rook.

PAWN PROMOTION

Although a pawn is the most lowly of pieces, if it advances all the way to the far side of the board it is immediately promoted, as part of the same move, into a queen, rook, bishop or knight -- whichever its owner chooses. Since a queen is the most powerful, it is nearly always chosen as the promotion piece.

EN PASSANT CAPTURES

If an enemy pawn advances two squares to land on a square alongside your own pawn, the latter may capture it just as if it had only advanced one square. This is called an *en passant* capture (*en passant* is French for "in passing").
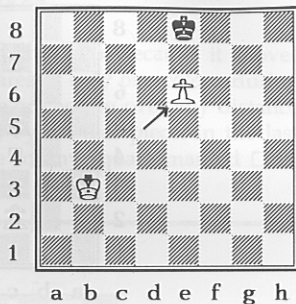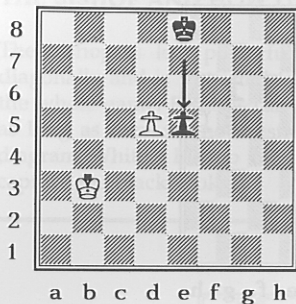
In this position, if Black advances his pawn two squares to the square d5, the white pawn may capture it *en passant*. To make the *en passant* capture the white pawn moves to the square d6 and White captures the black pawn, taking it off the board.

An *en passant* capture may only be made as the reply to a double pawn move, and only by a pawn which is side-by-side with the enemy pawn which has just made the double advance.

CASTLING

Castling is another special move. It allows the king to be moved to a safer part of the board, nearer to the corner, and at the same time it brings a rook into play. In one move, the king slides two squares towards a corner square and the rook in that corner jumps over the king and lands next to it. Each player may "castle" once, at most, during a game.

In the next position White may castle by moving his king to either of the squares marked by the arrows and then jumping the nearby rook over it. Black has already made the castling move -- his king has moved two squares sideways and his rook has jumped over the king, landing on the adjacent square.
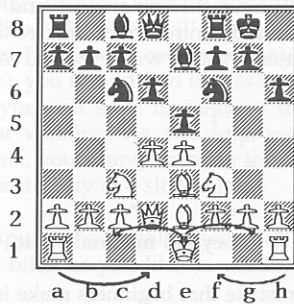
There are a number of restrictions that apply to castling and it is important that you learn all of them:

(1)   You may not castle if your king has already moved.

(2)   You may not castle with a rook which has already moved.

(3)   You may not castle if you are "in check".

(4)   You may not castle if your king would land on a square where it is "in check".

(5)   You may not castle if the square that your king crosses over is attacked by an enemy piece.

(6)   You may only castle if the squares between your king and rook are all vacant.

HINTS FOR BEGINNERS

The most obvious way to work towards victory is to try to increase your own fighting force relative to that of your opponent. We call this "winning material". It is usually a good idea to capture any of your opponent's pieces that are undefended or insufficiently defended. The bigger your material advantage, the easier it will normally be for you to dominate the game and to force a win.

The pieces do not all have the same value and power because some are more mobile and control more squares than others. The following table of material values will serve you as a useful guide.

PAWN	= 1 point
KNIGHT	= 3
BISHOP	= 3
ROOK	= 5
QUEEN	= 9
KING	= beyond material value

The most common mistake that beginners make is to put a piece on a square where it may simply be captured at once. So every time that you are about to make a move, spend a few seconds to ask yourself:

(a) Can your opponent safely capture the piece that you are going to move?

(b) Did his last move threaten one of your pieces?

(c) Has your opponent been careless and made a move which allows you to win material, possibly by capturing the piece he has just moved?

Material is not the only important factor in chess. During the first 10 or so moves of the game you should try to bring out both of your knights and both bishops so that they are active, and you should try to castle. And finally, try to use your pieces to attack the central squares -- the player who controls the centre usually has the advantage.

2   WHAT IS A CHESS COMPUTER?

A chess computer is a traditional board and pieces operating with electronic circuits which respond to the position of the pieces on the board. An advantage of the computer is that you can play chess against it when a human opponent is not available; you can play at any time, as often as you like. You can even switch off in the middle of a game and start again later; the computer will remember exactly where all the pieces are, even when it is switched off.

You must not think that you have no chance against the computer. It has many different levels of skill. If you start off by playing on the lowest level (where the computer makes its moves almost instantaneously), you should find that as you get used to playing the computer, you will learn more about the game and have a good chance of winning. As you improve and want a more challenging game, you simply increase the level of skill (i.e. you set the computer to play at a slower rate).

Your chess computer is an ideal opponent. It is ready to play you at any time, as often as you like, at whatever level of skill you choose.

3   THE CHESS PIECES

For those of you who are beginners or fairly new to the game of chess, you will find the chess pieces and their symbols shown in a chart on page 1 of this manual.

Set up the pieces in their starting positions as shown in the following diagram.
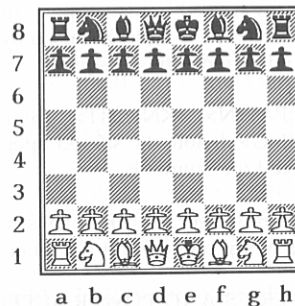
Board set up at the beginning of a game.

NOTE: For portable models the pieces should be inserted into the holes in the centre of each square.

9

10

Chess Notation

The computer communicates its moves to you using a system called "algebraic notation".

The files, or vertical columns of squares on the chessboard, are identified by the letters a-h (looking at the board from White's side, and reading from left to right). The ranks, or horizontal rows, are numbered 1-8, starting from the White end.

This means that every square can be named by giving the letter of its file and the number of its rank - like a grid reference on a map. For instance, at the start of the game the white king is on e1 and the black queen is on d8.

To make it easier for you to identify each of the squares on the chessboard, they are all marked with their algebraic co-ordinates (for example E2, D3).

In this instruction manual we use □ and ■ to describe the white and black rectangular symbols that appear on the computer's display. The display itself is called an "LCD" (liquid crystal display).

There are also two rows of red lights, at the bottom and left-hand edges of the chessboard. These lights are used by the computer as an additional method of indicating a square.

The piece names <PAWN>, <KNIGHT>, <BISHOP>, <ROOK>, <QUEEN> and <KING> denote the six red operating keys which are marked by "piece type" symbols.

We use >> and << to represent the arrow keys which are used for taking back and replaying moves, and for other purposes.

4   THE BATTERIES AND POWER SUPPLY

Your chess computer works from batteries as specified on the label near the battery compartment on the base of the computer. When you wish to insert new batteries, remove the plastic battery cover on the base of the computer and insert the batteries, making sure that the polarity is correct.

When the LCD display starts to go dim, the batteries should be replaced as soon as convenient. There will still be a certain amount of battery life remaining, but if the replacement is delayed for too long you may run out of power during a game.

Some models may be operated using an AC/DC adapter, in which case information concerning the adapter is indicated on the rating label on the base of the unit.

5   STARTING A GAME

Set up the pieces on the chess board in their starting position, and switch on the computer. Press the NEW GAME key. The LCD will show "New game ?". Now press the OK key (also labelled HINT).

The □ symbol on the LCD will come on since it is White's turn to move. The level setting (see section 20) will be the same as that used for the previous game.

If you are using new batteries for the first time, or if you are using a power adapter and do not have any batteries in the computer, the computer will be playing on its "adaptable" level.

OCCASIONALLY WHEN YOU INSERT NEW BATTERIES YOU MAY FIND THAT THE COMPUTER ACTS ABNORMALLY, IN WHICH CASE PUSH A THIN OBJECT INTO THE "RESET" HOLE IN THE BASE OF THE COMPUTER AND PRESS DOWN ONCE.

6   MAKING MOVES

We suggest you play your first game with White. To make a move, press down gently on the square occupied by the piece you want to move. **IF YOU ARE USING PIECES WITH MAGNETS IN THE BASES AND YOUR MOVE DOES NOT SEEM TO HAVE REGISTERED, PRESS DOWN WITH THE EDGE OF THE PIECE.**

The computer gives a beep and you will now see the letter and number indicating the "from" square appear on the LCD, for example **"e2"**. At the same time the computer displays the symbol corresponding to the piece on that square.

Now place the piece on the square you wish to move to, and press it lightly down again. The computer will give another beep. It has now registered your move, and starts computing its reply. On its first move it will play almost instantaneously.

7   COMPUTER MOVES

While the computer is thinking, it will flash the □ symbol or the ■ symbol on the LCD, depending on which side it is playing.

It will also display the **thinking time (in hours, minutes and seconds)**, incrementing every second. If you are playing "Sudden Death" or "Active Chess" or have specified a "Tournament" time control (see section 20), the time displayed will be the *total* time taken. Otherwise it will be the time taken for the current move.

When it is your move, the computer will similarly display your thinking time, together with the □ or ■ symbol (not flashing) for the colour you are playing.

At the beginning of the game the computer will be able to move immediately because of its *opening library*. When the computer has decided on its move, it gives a beep, and displays on the LCD the letters and numbers corresponding to the "from" square (flashing) and the "to" square (not flashing) for its move. It will also display the symbol for the piece it is moving.

In adittion, a pair of red lights will "flash" -- namely the light at the bottom of the file (or vertical column of squares) and the one to the left of the rank (or horizontal row) in which the computer's piece is located.

Press gently on the "from" square and pick up the piece. The letter and number of the "from" square stop flashing in the LCD and those of the "to" square start flashing. The lights also change to indicate the square that the computer wants to move to.

Set the piece down on the "to" square, pressing it gently again. The computer will now display your colour symbol on the LCD, indicating that it is your turn to move.

Displaying the Score

When the computer makes its move it tells you how well or badly it thinks it is doing, in just the same way as when it is in "analysis" mode (see section 28). It does this by displaying its "score" in points. A pawn is worth 1 point, a knight or bishop is 3 points, a rook is 5 and a queen is 9 points. The score you see displayed on the right of the LCD will be shown to an accuracy of one-hundredth of a pawn. This is because the material situation, based on the values of the peieces, is not the only factor which affects the score. There are many aspects of chess which the computer takes into account when assessing a position, including: how many squares each side attacks near the opponent's king; which player has better control of the centre of the board; ... etc. Remember that when the computer displays a score greater than 0 it thinks it is ahead, while if the score displayed is negative the computer thinks that you are ahead. A score of 0 means that the computer thinks the game is level and likely to end in a draw.

8   CAPTURING MOVES

Captures are performed just like any other move. The moving piece is pressed down on the "from" and "to" squares, while the captured piece is removed from the board without being pressed. If the computer makes a capture move, it displays the "x" symbol in between the "from" and "to" squares on the LCD.

9   SPECIAL MOVES

CASTLING

If you wish to castle, move your king first and then your rook. When you have pressed your king on its "from" and "to" squares the computer will automatically display the "from" and "to" squares of your rook. For example, if you are playing White and you decide to castle king's side, you press with your king on the square e1 followed by the square g1, and the computer will display h1 (flashing) and f1 to remind you to move the rook to the square f1.

When the computer castles, the move is carried out in the same way. Here is how the board will look before and after this example.

a b c d e f g h   a b c d e f g h
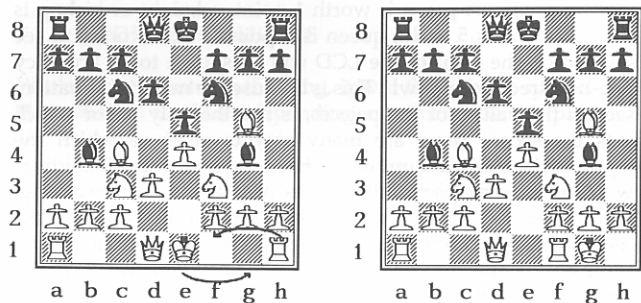
In the position shown in the left hand diagram imagine that you are playing White and you decide to castle king's side. First you press down with the white king on the square e1 and your computer will display the fact that you are moving from the e1 square. Then you press down with the white king on the square g1. This tells the computer that you are making the castling move (since any other move by the king may only be to a square adjacent to its current square).

Once the computer knows that you are castling it will remind you to make the second half of the castling move with your rook. In this case the computer will display [ROOK] **h1f1**, with **h1** flashing. Now press down with your rook on the h1 square. On the display, **h1** is now static, while **f1** begins flashing. Move the rook to f1 and press down with it. Once you have done so, the computer knows that the castling move has been completed.

When you have finisheded making the castling move in this example, the chess board will look like the position in the right hand diagram.

15

EN PASSANT CAPTURES

You carry out an *en passant* capture (for either side) by pressing the "from" and "to" squares of the capturing pawn in the usual way. The computer will then flash the square of the pawn being captured, together with the "pawn" symbol and the "-" sign. You should now press the square of the captured pawn as you remove it from the board.

Here is an example.

a b c d e f g h   a b c d e f g h
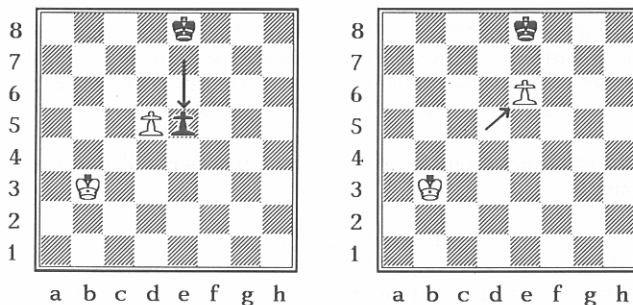
In the position in the left hand diagram let us imagine that the computer is Black and has just advanced its pawn from e7 to e5. This double pawn move, landing on a square next to your pawn on d5, allows you to make an *en passant* capture. (If you do not understand why, take another look at the paragraph "*EN PASSANT* CAPTURES" in section 1.)

To capture the black e5 pawn, move your pawn from d5 to e6 in the usual way by pressing down with the pawn first on d5 and then on e6 (as though the black pawn had advanced just one square, to e6, instead of two squares to e5). Then press the e5 square (as directed by the computer) and remove the black pawn from the board. The position will now be as shown in the right hand diagram.

16

PAWN PROMOTION

If you advance one of your pawns to the far side of the board you must promote it, as part of the same move, into a queen, rook, bishop or knight, whichever you prefer.

When you complete a move which puts your pawn on the furthermost rank of the board, a flashing question mark asks you which piece you want to promote the pawn to, for example:

[PAWN]e7e8=?

Press the <QUEEN>, <ROOK>, <BISHOP> or <KNIGHT> key. The co-ordinates of the "to" square now flash in unison with the symbol of the piece you have chosen. Press down on the square as you place the newly promoted piece on the board.

If the computer promotes one of its own pawns it will display for example:

{PAWN}a2a1={QUEEN}

When you have pressed the "from" and "to" squares, the symbol of the required piece will flash, together with the "to" square. Re-press the square as you place the computer's piece on the baord.

10   ERRORS

If you press a piece on its "from" square but then decide not to move this piece after all, simply press the same square again.

In general, if you press an inappropriate key or square, you will hear the error signal (a low buzz). This will clear the "from" square if one has already been selected. Start your move again, or (if it is the computer's move) continue normally by pressing the square indicated by the LCD and the lights.

11   CHECK, CHECKMATE AND STALEMATE

If either side puts the opponent's king in check, a "+" sign will appear on the display, to the right of the □ or ■ symbol. If the computer is checking you, it will also sound 5 quick beeps immediately after you finish moving its piece.

The display will show "Checkmate" or "Stalemate" if either side brings about such a position. If the computer **checkmates** you, it will also sound **17** quick beeps. If you checkmate the computer, it will sound 12 beeps.

If the computer sees that one player can force checkmate, it will display a message to this effect. The message will appear on the right of the LCD where the computer would normally indicate the "score" for its move. The display "+M4", for example, means that the computer can mate you in 4 moves (including the one being announced), while "-M3" means that you can checkmate the computer in three further moves.

12   DRAW BY THREEFOLD REPETITION OF POSITION OR FIFTY-MOVE RULE

The rules of chess give a player the right to claim a draw if the same position (it must be the same in all respects, with the same side to move) occurs three times.

If it detects a threefold repetition, the computer will display:

3 times = Draw

A draw may also be claimed if **no capture** is made and **no pawn is moved** during a sequence of **fifty** moves by each player. To indicate a draw of this type, the LCD will show:

Draw 50 moves

13   NEW GAME

You can start a new game at any time. Press the NEW GAME key, and the LCD shows:

New game ?

To answer yes, press the OK key. The next game can then begin. If you want the computer to play White, press MOVE.

Instead, if you pressed NEW GAME by mistake, you can answer "no" by pressing the CANCEL/MOVE key. The situation will then be the same as before you pressed NEW GAME.

14   CHECKING THE POSITION

Sometimes you may want to check where the pieces should be (for instance after knocking some of them over). You do this by using the "piece type" keys (the six red keys below the LCD). For example you may press the <PAWN> key, and if there is a white pawn on the a2 square, the display will show:

Verify: [PAWN]a2

At the same time the red lights for the a-file and the second rank will come on.

If you now re-press the <PAWN> key repeatedly, the computer will display the position of each pawn in turn, starting from the "White" end of the board and proceeding from left to right along each rank. When verifying a black pawn, the red lights will flash on and off. When the computer has verified all the pawns on the board, the next press on the <PAWN> key will return you to normal playing conditions, with the □ or ■ symbol and the clock time displayed. (Another press on <PAWN> would begin the verification process all over again.)

You can similarly verify any of the other pieces by using the corresponding key.

While "Verify:" is displayed, you may also press any square on the chessboard; if a piece is on this square, the computer will display its type and colour. (If the square is vacant, you will simply hear the "error" buzz.)

The "verify" process can be broken off at any time by pressing the CANCEL/MOVE key. This clears "Verify:" from the display and restores normal game conditions.

15   CHANGING SIDES

You may **change sides** whenever it is **your turn to move**. Press the MOVE key and the computer starts to think about the next move for the side you have been playing. When it makes its move, you can continue the game by playing for the other side. Alternatively you can press the MOVE key again. In this way you could make the computer play the whole game itself.

At the beginning of the game, press MOVE if you want the computer to play White.

16   MOVE NOW

If you do not want to allow the computer the full use of its thinking time, press MOVE while it is thinking. The computer will cut short its search and make the best move it has found so far.

17   TAKING BACK AND REPLAYING MOVES

If you press down one of your pieces but then decide not to move it, press the square a second time. The letter and number of the "from" square will disappear from the LCD, as will the symbol of the piece on that square. You may now move any piece you like.

You may also retract a move you have already completed. If the computer is still thinking about its reply, simply press the << key. You will then see your last move displayed again, with the "to" square flashing. Press down on this square, and the "from" square flashes. Move your piece back and press it down again.

If the computer is already displaying its reply, you must first carry out the move indicated. You can then press <<, retract the computer's move in the manner described, then press << again to take back your own move.

In the same way it is possible to take back a sequence of several moves. At any point in the sequence you may resume play by making a move for the side whose turn it is, or by pressing MOVE to make the computer do so.

If the move you have just taken back was a capturing move, the LCD (and the red lights) will instruct you to replace the captured piece, for example:

e5={KNIGHT}

This tells you to replace a black knight on e5, pressing it down on the square. **Note** that in the case of an *en passant* capture, the captured pawn is not replaced on the "to" square of the capturing pawn. Instead it is replaced one square further up the board, to the side of its captor.

Note also that when you retract a castling move you must first take back the move of the king, which will be the first move indicated by the LCD, and then you take back the rook's move. If you take back a pawn promotion, the computer directs you to replace the promoted piece with a pawn, pressing down a second time on the "from" square.

STEPPING FORWARD

After retracting one or more moves, you may use the >> key to "step forward", i.e. to repeat the same moves as before. Each time you press >>, the computer directs you to carry out the next move in the sequence. You may continue playing from any of the positions reached in this way, simply by making a move or pressing the MOVE key.

18   HINT

If it is your turn to move and you press the HINT key, the computer can give you advice on what to play. The LCD will show something like this:

□Hb1c3 c6b4 b5c4

The move following the "H" is the suggested next move for White. Then comes a possible reply for Black, and a suggested reply to that. The display may change as the computer continues with its analysis. The second and third moves may be replaced by "----" if the analysis has not reached any conclusions.

To proceed with the game, make your move in the normal way. This can be either the "hint" move or a move of your own choice.

19   THE "MAIN MENU"

The remaining sections of this manual describe some of the more complex features of your chess computer. To make use of any of these features, you will need to use the MENU key. A press on this key displays "Set up...". You will now find that by pressing >> repeatedly, you can display the following options in rotation:

Set up...
Play mode...
Level...
Coach...
Rating...
Style...
Evaluation...
Preferences...

These options constitute the "main menu". By pressing <<, you can display them in the opposite order.

From now until you return to normal playing conditions, the MENU, MOVE and HINT keys will perform their alternative functions: ENTER, CANCEL and OK. The << and >> keys will also have special uses.

The keys work in similar ways irrespective of which feature you wish to operate. We suggest that at first you try setting various "levels" as described in the next section. You should then find the other features easy to understand and use.

For reference, the uses of the keys are summarized in the "KEYS AND DISPLAY" section at the start of the manual.

Usually you will want to use the "menu" when it is your turn to move. You may, however, press the MENU key during the computer's thinking time. The computer will still carry on thinking unless you make a change such as re-setting the level (see next section), and it may interrupt you by announcing its move. After carrying the move out, you may re-press MENU and operate whatever feature you want.

20   LEVELS

Your computer has a large number of widely differing levels of skill. You select its level by telling it how much thinking time it is allowed for its moves. This instruction can take various forms. You may tell it (for instance) to play at an average of ten seconds per move. Or you can make it play "Action" chess, with a total of thirty minutes for the whole game. Or it may play "Tournament" chess at a rate of forty moves in two hours -- etc.

THE "LEVEL" SUB-MENU

To inspect the current level or switch to a different one, you will first need to press MENU as described in the previous section. This enables you to display the items in the "main menu". Now press >> or << as many times as necessary until the display shows:

Level...

Then press ENTER. You will now find that further presses on >> or << will display the following items in rotation:

Adaptable
Instant
Fixed
Average
SD
T
Mate
Infinite

These items constitute the "level" *sub-menu*. They represent the various classes of level from which you can choose. You will see that one of the above words or abbreviations is followed by "+". This tells you which class of level is currently selected. The "+" may be followed by more information, for instance:

Average+   00:10

This shows you that the computer is currently set to play at an average of ten seconds per move. The other items in the sub-menu will all be accompanied by "-" in place of "+".

If you now simply press OK (or CANCEL), the computer will display "Level..." again -- that is, it will return from the "sub-menu" to the "main menu", and the level will remain unchanged. (You can then use >> or << to go through the "main menu" items, or press OK or CANCEL again to return to normal playing conditions.)

Alternatively you may want to alter the level. This is done as follows.

"User adaptable" level

On this level, the computer calculates the average time you have taken over your past 6 moves and will respond in the same average time. If you slow down, the computer will also slow down. If you start to play more quickly the computer will also speed up.

The computer is automatically set to "adaptable" level when you first install the batteries or connect the power adapter.

To select "adaptable" level:

-- First display the "level sub-menu" as described above. "Adaptable" will the first item in the menu to appear.

-- If "Adaptable" is followed by "+", the computer is already set to play on "adaptable" level. If instead of "+" the display shows "-", press ENTER to change it to "+".

-- Now press OK, and the display reverts to "Level..." (i.e. it returns to the "main menu").

-- Press OK again (or CANCEL), and you are ready to carry on playing on "adaptable" level.

"Instant" levels

These are the fastest and weakest levels, and your computer will respond almost instantly on every move. The playing strength improves progressively from instantaneous level 1 (the weakest of this group of levels) to instantaneous level 6 (the strongest of this group).

To select an "instant" level:

-- Display the "level sub-menu".

-- Press >> or << as many times as required until the display shows "Instant".

-- If "Instant" is followed by "-", or if the number on the right is not the required level number, press ENTER. This displays "+", and causes the number to "flash".

-- By repeatedly pressing >> or <<, you can display the numbers 1-6 in rotation.

-- When the desired number is shown, press OK. The number stops flashing. Two further presses on OK (or CANCEL) will return you (via the "main menu") to normal playing conditions.

"Fixed time" levels

On these levels the computer will respond in exactly the specified amount of time.

To select a "fixed" level:

-- Display the "level sub-menu".

-- Keep pressing >> or << until the display shows "Fixed", with a time in minutes and seconds, e.g.:

<div align="center">Fixed-   00:10</div>

-- If "Fixed" is followed by "-", or if the time is not the required one, press ENTER. This displays "+", and the time display "flashes".

-- By repeatedly pressing >> or <<, you can increase or decrease the time. From 3-20 seconds, it increases in steps of 1. From 20 seconds to 1 minute, it increases in steps of 5 seconds. From 1 minute to 3 minutes 30 seconds, it increases in steps of 15 seconds. (Note that while the numbers are "flashing", a press on CANCEL will return them to their previous setting.)

-- When the desired time per move is shown, press OK. The number stops flashing. Two further presses on OK (or CANCEL) will return to normal playing conditions.

"Average" levels

The computer will take an average of the specified amount of time.

To select an "average" level:

-- Display the "level sub-menu".

-- Keep pressing >> or << until the display shows "Average", with a time in minutes and seconds, e.g.:

<div align="center">Average-   00:10</div>

-- If "Average" is followed by "-", or if the time is not the required one, press ENTER. This displays "+", and the time display "flashes".

-- By repeatedly pressing >> or <<, you can increase or decrease the time (see "Fixed time levels", above).

-- When the desired time per move is shown, press OK. The number stops flashing. Two further presses on OK (or CANCEL) will return to normal playing conditions.

"Sudden death" levels

These are also called "Countdown" levels. The computer will try to make all of its moves in a fixed amount of time. When set to any of these levels the computer will display the total amount of time taken by each of the players (instead of the amount of time taken over a particular move). When either player consumes the permitted total time, a sour beep sounds 5 times (although the game can still continue).

To select a "sudden death" level:

-- Display the "level sub-menu".

-- Keep pressing >> or << until the display shows "SD", with a time in hours, minutes and seconds, e.g.:

SD-   0:05:00

-- If "SD" is followed by "-", or if the time is not the required one, press ENTER. This displays "+", and the time display "flashes".

-- By repeatedly pressing >> or <<, you can increase or decrease the time. From 4-10 minutes, it increases in steps of 1 minute. From 10 minutes to 3 hours 30 minutes, it increases in steps of 5 minutes.

-- When the desired time per move is shown, press OK. The number stops flashing. Two further presses on OK (or CANCEL) will return to normal playing conditions.

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NOTE: "Action Chess" is a special "sudden death" level. For more about this, see section 21.

"Tournament" levels

The computer will play within the specified rate. The clocks will show the total time consumed. Time saved during the first time period can be added to the next time period.

To select a "tournament" level:

-- Display the "level sub-menu".

-- Keep pressing >> or << until the display shows something like:

T- 40/120 20/60

This means "40 moves in the first 120 minutes, 20 moves per 60 minutes thereafter".

-- Press ENTER. The "T" is now followed by a "+", and the first number (in this case 40) starts "flashing". If you want to change it, you can do so with the << / >> keys.

-- If you press ENTER again, the second number "flashes", and can be altered. Similarly by pressing ENTER a third and fourth time, you can alter the third and fourth numbers. (A fifth press on ENTER causes the first number to flash again.)

-- When the numbers are all as you want them, press OK. (The display will then be static.) After two more presses on OK (or CANCEL), you can start a game under "tournament" conditions.

"Mate" (problem-solving) levels

On these levels, the computer will try to find a forced mate within a specified number of moves.

To select a "mate" level:

-- Display the "level sub-menu".

28

-- Keep pressing >> or << until the display shows "Mate" plus a number.

-- Press ENTER. "Mate" is now followed by "+", and the number "flashes".

-- If you want to alter the number of moves for the mate, use the >> or << key and confirm the alteration with OK. The computer now immediately starts to search for a forced mate from the current position on the board.

NOTE: After functioning on a "mate" level, the computer will automatically set itself to "adaptable" level when you start a new game (or you "set up" a new position).

For more about chess problems, see section 23.

"Infinite" level

On this level the computer will normally go on thinking until you press the MOVE key.

To select "infinite" level:

-- Display the "level sub-menu".

-- Keep pressing >> or << until the display shows "Infinite". Then press ENTER, followed by OK.

-- A further press on OK (or CANCEL) takes you back to normal playing conditions.

NOTE: At the start of the game the computer uses its openings "book" or "library", so it will be able to move instantly. It will also move instantly if it has only one legal move; or if it sees that it can force checkmate; or if it correctly anticipates your move and has its reply all ready. This applies irrespective of the level selected.

21 ACTION CHESS

There is a rate of play which has become extremely popular throughout the chess world during the past few years. This is known as "Action Chess" and was first introduced by FIDE, the International Chess Federation, as a way to promote the game amongst people who do not have sufficient time to play in tournaments that last several days.

With the Action Chess rate of play, each player must make all of his moves in 30 minutes or less.

You can select Action Chess by setting the appropriate "sudden death" level as described in section 20. Another way is simply to start the game by pressing the ACTION CHESS key and confirming with OK.

22 SET UP POSITION

You may sometimes want to set up a position, for example a chess problem from a chess book, magazine or newspaper column.

When the computer is in "Set up" mode, you can modify the current position or set up a completely new one.

To enter the mode: Press MENU to invoke the main menu, and press ENTER when "Set up..." appears.

The LCD now shows "Set up:" followed by the □ or ■ symbol. As long as "Set up" is displayed, you can do any of the following:

To clear the chessboard: Press CANCEL. The computer asks "Clear board ?" Press OK to confirm (re-pressing CANCEL would cancel this command).

To specify the type of piece to be inserted: Press the appropriate "piece type" key. This displays the corresponding piece symbol.

To specify the colour: If the piece symbol is the wrong colour, press << or >> to alter it.

To insert a piece: Press a vacant square. The piece inserted will be of the type and colour indicated by the symbol. The LCD will confirm the insertion, e.g. if you place a white knight on d5 the display will be:

Set up: □[KNIGHT]d5+

To remove an individual piece: Press the occupied square. The symbol on the display now switches to the type and colour of the piece removed. (NB: This makes it very simple to transfer a piece from one square to another.) At the same time the LCD shows the co-ordinates of the square you have pressed, followed by "-", to indicate that the square is now vacant.

To check the position: If you press the "piece type" key corresponding to the piece already displayed on the LCD, this starts the "verify" procedure (compare section 14). When all pieces of the chosen type have been verified, you can continue the "setup" procedure.

Side to move: The colour of the piece (or the □ / ■ symbol) on the LCD indicates the side that will move next if you exit from the mode at this point. So before exiting, you may need to press << or >> to switch to the right colour.

To exit from "Set up" mode: Press OK. If the position is illegal (e.g. White is to move but Black is in check, or there are too many pieces of the same type), you will hear the error buzz and the computer will remain in "Set up" mode. If, for example, the black king is missing, the computer will point this out by displaying:

Set up: ■(KING)-

If the position is legal, play may begin from the position you have constructed.

NOTES: (1) The computer will not allow you to insert a pawn on the 1st or 8th rank, or to insert a second king of the same colour as one already on the board. If you try to do so, you will simply hear the error buzz.

(2) There can be no castling with a rook or king that has been inserted on the board in "Set up" mode. To create a position in

which the players have castling rights, you can enter "Set up" mode from the NEW GAME position, then leave the kings and rooks alone while you rearrange other pieces as appropriate - by removing them from the board individually and reinserting them. To make castling with a particular rook impossible, remove the rook and re-insert it.

23   CHESS PROBLEMS

You may set up a problem position on your computer using "Set up" mode, and then select the appropriate "Mate" level according to the number of moves specified for the mate. (See section 20.)

Once the "mate" level is selected and confirmed with OK, the computer immediately starts searching for a forced mate. For a mate in 2 moves, it will probably display the solution immediately. For a mate in a larger number of moves it is likely to need more thinking time, and if you press OK or CANCEL twice (to exit from the menu) it will show you its analysis as described in section 28 below.

If you set the computer to try and solve one of these problems, and if it finds a move which forces checkmate in the prescribed number of moves or fewer, the computer will display this move in the usual way, as though it were announcing its move in a game. You can then carry out the computer's move and try to find a defence to the checkmate. You can play all the way through until the computer checkmates you, just as though you were playing a game.

If the computer cannot find a forced checkmate within the prescribed number of moves, it will simply make the move it considers best; then the LCD will display **"No mate found"**.

24   MULTI-MOVE

You may want to play a series of moves for both White and Black. For this purpose you need to put the computer in "multi-move" (i.e. "player v. player") mode.

This feature may be used to enter a particular opening sequence, to replay a game to a certain position, or to use the computer as a normal chess board, allowing you to play against a friend while the computer makes sure that all of your moves are legal and can offer hints if you wish.

To select this feature:

-- Press MENU (to gain access to the "main menu").

-- Press >> to display "Play mode...".

-- Press ENTER (to gain access to the "play mode" sub-menu).

-- Press >> to display "Multi-move". If this is followed by "-", press ENTER to change it to "+".

-- Press OK (or CANCEL) twice, to return to the game.

Note that in "multi-move" mode, you cannot use the MOVE key to make the computer play a move.

When you want to return to "normal" playing mode (i.e. human v. computer), bring the "play mode" sub-menu onto the LCD (by pressing MENU, >>, ENTER), and when the display shows "Normal-", press ENTER again to change the "-" into a "+". Then after two presses on OK, play may continue. (Play a move in the usual way, or press MOVE to make the computer do so.)

When you start a new game, the computer selects "normal" playing mode automatically.

25   TEACHING

There are three types of mistake which are made regularly by most inexperienced players. Anyone at that level who can eradicate all three types of mistake will improve their playing ability very significantly.

If you like, the computer can identify these mistakes in your games and tell you about them. This information will be given in

stages, so when you are told that a move is a mistake you will have an opportunity to work out why, before being told exactly what is wrong with your move.

To make use of this feature:

-- Press MENU to display the main menu.

-- Keep pressing >> or << until the display shows "Coach...".

-- Press ENTER to gain access to the "coach" sub-menu. By repeatedly pressing >> or <<, you will see that this sub-menu contains three items:

> Not teaching
> Teach
> Teach and warn

To select the item you want, bring it onto the display and press ENTER so that the "+" sign is shown. Then press OK twice, and play may continue.

If you select the "Teach" option, the computer will tell you when your move is a mistake. If you select "Teach and Warn", it will also warn you when its own move threatens to win material or checkmate you. To play without these messages, select "Not teaching".

Note that the "teaching" function gives good results on any level where the computer uses ten seconds or more per move. On very fast levels it may be less reliable.

THE THREE TYPES OF MISTAKE

(a)   **Putting a piece *en prise*.**

This means putting a piece on a square where it can be taken for nothing, or in return for a piece (or pieces) of lower value.

(b)   **Making a move (other than putting a piece *en prise*) which unnecessarily allows the opponent to win material or to force checkmate.**

Examples of this are moves which ignore threats by your opponent to win material, or moves which leave a previously defended piece unprotected or insufficiently protected.

(c)   Failing to make a move which wins material or which gives checkmate.

Announcing Each Type of Mistake

If the "Teach" option is selected and the computer detects a mistake of any of the above types, it will give a series of beeps and display:

Are you sure?

You now have these choices:

(a) If you want to retract your move (because you can see what is wrong with it), press the << key and proceed as in section 17.

(b) If you are happy to let your move stand, press MOVE. The computer makes its reply, and the game continues.

(c) If you want an explanation of what you have done wrong, press the HINT key. The computer will then give you a message such as:

Loses 3

(This means that your move loses material equivalent in value to 3 pawns.)

Allows mate

(Your move allows the computer to force checkmate.)

Could win 1

(You have missed a chance to win material worth 1 pawn.)

Could mate

(You could have played a move that forced checkmate.)

When such a message is shown, you have the same choices as before. You can press << and retract your last move; you can press MOVE so that your last move stands and the computer makes its reply; or you can press HINT again, for a further explanatory message.

This time the message will consist of a good move which you missed, or else a move that the computer can play to take advantage of your error. Again you can respond in three ways: with <<, with MOVE, or with HINT (in which case the display reverts to "Are you sure ?").

Warnings

If you have selected the "Teach and Warn" option, you will be given additional warning messages when the computer's move contains a threat (though there will be no such message if the move gives check or makes a capture). After carrying the computer's move out, you will hear a series of beeps, and the display will show:

Be careful!

If you now press HINT, the LCD will show something like:

Threat 2

(The computer is threatening to win material worth two pawns.)

Or:

Mate threat

(The computer's move threatens to force checkmate.)

If you press HINT again, the computer shows you what move it intends to play if you do not take evasive action. This allows you to decide whether or not you are afraid of the computer's threat.

On a further press of HINT, the display reverts to "Be careful!". At any stage, instead of HINT, you may press CANCEL/MOVE, which clears the message from the display and allows you to make your next move.

NOTES:

(1) When the computer's message refers to the win or loss of material, it is accompanied by 3 beeps. When it refers to checkmate it is accompanied by 5 beeps.

(2) The move which the computer indicates as winning material (or forcing checkmate) may not be an immediate capture (or checkmating move). It may just be the first move of a sequence which leads to the advantage indicated. It is for you to work this out.

(3) To express the amount of material that can be won, the computer uses the table of values that you can see on page 19. So if, for example, you allow it to capture a rook (worth 5 pawns) and in reply you can take a knight (worth 3 pawns), the message will normally be "Loses 2". If you make a move that loses material worth 2 pawns, when instead you could have won material worth 3 pawns, the message will be "Could win 5".

(4) The computer assesses positional factors, as well as material ones, in terms of how many pawns it thinks they are worth. So if your move loses rook for knight, the message may sometimes be "Loses 3" (meaning that the computer gains a positional advantage in additional to the material one) or "Loses 1" (meaning that you have some positional compensation for the material loss). Note that if you are winning but allow a repetition of the position, the computer will tell you that your move loses the equivalent of a certain amount of material.

(5) The teaching function works best in positions where neither side has a very large advantage. Where there is a great imbalance (so that the stronger side is still winning after playing relatively weak moves, and the losing side only has a choice of evils), the assessment of certain moves as "mistakes" is less meaningful.

26   USER PROGRAMMABLE EVALUATION FUNCTION

Every chess program needs to know how to evaluate a chess position. It does so using an "Evaluation Function" which gives a point-score to various features of the position, such as king attack, material, mobility, centre control, etc. Associated with each of these features is a "weighting" which tells the program how much importance to attach to the feature.

Your chess computer allows you to change these weightings so that you, the user, are programming the computer to play in a particular way. For each feature the wighting ranges from **0** (when this feature would be completely ignored) to 100 (when the feature will be given much more than its normal importance).

To inspect the features and their weightings:

-- Display the "main menu" by pressing MENU.

-- Keep pressing >> or << until the display shows "Evaluation...".

-- Press ENTER to display the "evaluation" sub-menu. This contains the following items, which may be inspected with repeated presses on the >> or << key:

Pins	(normal weighting: 30)
[KING] shield	(normal weighting: 20)
[KING] attack	(normal weighting: 24)
[PAWN]	(normal weighting: 0)
[ROOK] on open file	(normal weighting: 20)
Width	(normal weighting: 0)
Search Ext	(normal weighting: 25)

On displaying any of these items, you can alter the weighting number by pressing ENTER (to make the number "flash"), then using >> or << and confirming the alteration with OK. By giving a big weighting to "king attack", for example, you will encourage the computer's pieces to attack more than normal. The bigger the

weighting for "Rook on open file", the more the program will like to place its rooks on open files (files which have no pawns of either colour), and on half-open files (files which have one enemy pawn but none of its own pawns). The item "pawns" refers to various features of the pawn structure, e.g. doubling and isolation of the opponent's pawns etc.

When you have finished with the "evaluation" features, two further presses on OK allow play to be resumed.

NOTES:

(1) If a high value is given to "Width", the program will be more inclined to examine a wide variety of moves in any position, instead of being "selective" and analysing a smaller number of moves to a greater depth.

(2) "Search Ext" means "search extension" -- this encourages a deeper analysis of moves which involve tactical threats, etc.

(3) The computer will probably play at its best when you use the normal values for all the weightings. When you change the weightings you may make the computer play less well.

27   CHANGING STYLES

This function is similar to "Evaluation" (see section 26), and allows you to influence how aggressively or cautiously the computer will play.

By displaying the item "Style..." in the "main menu" and pressing ENTER, you gain access to the "style sub-menu" which contains 4 items:

□ attacks	(normal value: 17)
■ attacks	(normal value: 17)
□ mobility	(normal value: 33)
■ mobility	(normal value: 33)

When any of these items is displayed, the number can be altered (on a scale of 1-100) by using ENTER, << / >> and OK.

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The computer's play is likely to be strongest when all these features are set to their normal value. However, as an example of the fun you can have, try giving a weighting of 100 to the "[KING] attack" feature in the "evaluation" sub-menu and also 100 to both "□ attacks" and "■ attacks" in the "style" sub-menu. This will make the program play very aggressively.

28   ANALYSIS

When the "analysis" feature is on, the computer can show you what it is thinking about and how it assesses the position.

While the computer is thinking (but not when it is your turn to move), the LCD will show the following information in rotation:

(1)   The computer's thinking time.

(2)   The move it is currently thinking about playing, together with an indication of how deeply it is analysing. For example:

■c7c5   6 47554

This means that the computer, playing Black, is thinking of moving from c7 to c5. It is currently looking 6 "half-moves" ahead (i.e. three moves for White and Black), and has examined 47554 positions.

(3)   The move it is considering, your expected reply, and a possible reply to that. (If the display is "----", the computer has not yet chosen any particular move to analyse.)

(4)   The move it is considering, followed by its "score" for this move (see section 7).

To turn the "analysis" feature on or off:

-- Bring the "main menu" onto the display by pressing MENU.

-- Keep pressing >> or << until the LCD shows "Preferences...".

-- Press ENTER (to display the "preferences" sub-menu).

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-- Keep pressing >> or << until the LCD shows "Analysis". The following "+" or "-" sign shows whether this feature is currently "on" or "off". Press ENTER if you want to change the sign.

-- Press OK twice, and play may continue.

29   WHY NOT?

After the computer has made a move you can ask it the question: "Why did you not play ...." and suggest a different move. The computer will then tell you what it expected you to play in reply if it had chosen your suggested move. (This will not always be the best move, but it will be one which the computer considered strong enough to counteract your suggested move.)

To use this feature:

-- Display the "main menu" by pressing MENU.

-- Press >> to display "Play mode...", then press ENTER.

-- Press << to display: "Why not-".

-- Press ENTER. The computer now directs you to "take back" its last move, which you do by pressing the "to" and "from" squares in the usual way.

-- Carry out the move you wish to suggest in place of the computer's move. The computer will now display its "analysis", in the way described in section 28. From this analysis you can see how you could have replied to the suggested move.

-- When you have finished inspecting the analysis, press CANCEL. The computer directs you to "take back" your suggested move and "replay" its own move. Play can now continue normally.

It is also possible to use the "Why not" feature during the computer's thinking time, to ask it how it would have replied if your own last move had been different. After the above procedure has all been carried out, press MOVE to make the computer resume its calculations.

30   RATING FEATURE

How Good Is Your Chess? Measure Your Progress

Your computer can estimate how strong you are as a chess player from the results you score against it. Your performance in each game is recorded -- if you want it to be -- in the form of a "rating" number, and the computer will work out your average rating over a series of games.

Our special rating system has been designed to enable you to measure your progress. It is not an official rating. An official rating can only be awarded by a local, national or international chess organization, based on the results you obtain when participating in supervised chess tournaments.

How to Rate a Game

If you want your performance in a particular game to be "rated", you must carry out the following procedure *before starting the next game:--*

-- Display the "main menu" by pressing MENU.

-- Keep pressing >> or << until the LCD shows "Rating...".

-- Press ENTER (to enter the "rating" sub-menu). The LCD shows "Result".

-- Press ENTER again. You will now find that if you press >> or << repeatedly, the LCD shows three displays (flashing) in rotation: 1:0, 1/2, 0:1.

-- If the game was won by White, Press OK when "1:0" is displayed. If the game was drawn, press OK when the LCD shows "1/2". If Black won, press OK wnen "0:1" is displayed.

-- The right-hand part of the LCD now switches to "---". This shows that the game has been "rated" and cannot be rated a second time.

You may now use >> or << to display two further items in the "rating" sub-menu: "Last Game" and "Average".

The number accompanying "Last Game" represents your individual performance in the last game to be rated.

The number accompanying "Average" is your new overall rating. This takes into account all previously rated games including the one you have just been playing. (It also takes into account your initial rating which is assessed as 1500.)

To exit from the "rating" sub-menu, press OK (this takes you back to the "main menu"). Then another press on OK restores normal playing conditions. Of course, the items in the "rating" sub-menu can be inspected again any time you like.

Your performance can only be measured reliably in games played under normal conditions, in which you receive no special advantage or help. The computer will not give you a rating for a game if:

	(a)	you take back any moves;
	(b)	you ask the computer for a hint;
	(c)	you interrupt the computer or swap sides with it;
	(d)	you play moves for both sides;
or	(e)	you are playing from a position you "set up".

In any of these cases, if "Result" is displayed, the right-hand part of the LCD will simply show "---", and the computer will not allow you to record the result of the game.

Of course, you can cheat if you wish, and tell the computer that you won when really you lost or drew the game, but although this will give you a higher rating you will only be fooling yourself. The rating system has been programmed into your computer to help you keep track of how your chess is improving, and the best way to follow your progress is to tell the computer the true result for every game that you play against it. You can then write down your rating after each game and keep notes on your progress, or even draw a graph to show what your rating is after a certain number of games.

Rating systems have been used to measure the strength of chess players ever since the late 1950s and your computer has a well established rating method included in its program. When you win games against the computer your rating goes up. When you lose games your rating goes down.

If the game ends in a draw your rating may go up (if you were rated below the computer's strength before the game started), or it may go down (if you were previously rated above the computer's strength); or your rating may remain the same. The change in your rating depends on the result of the game, on the rating difference between you and the computer before the game, and on the total thinking times that you and the computer used during the game.

How the Rating System Works

The basic principles of the rating system are very simple. Let us start by assuming that you and the computer both use the same total time during a game and that you win the game. Since you won the game your rating will go up. The amount that it goes up will depend upon the rating difference between you and the computer before the game started.

If you were rated very much lower than the computer before the start of the game then the computer would be expected to beat you most of the time, so you will gain a lot of rating points for beating it. If you were rated slightly lower than the computer then you will gain fewer rating points. And if you were rated higher than the computer then you would be expected to beat it more often than not, and so you will gain still fewer rating points for beating it.

On the other hand, if you lose a game against the computer you will lose rating points. If you had been rated below the computer before the game, you will lose comparatively few rating points if it beats you. But if you were rated higher than the computer before the game, you will lose more rating points if it beats you.

Now let us consider what happens if you take much longer than the computer over your moves (or vice versa). If you take longer than the computer then you are, in effect, making yourself

stronger than in the previous examples because you are thinking more. The computer's rating system takes this into account; when it calculates your new rating after a game, it first considers whether you or the computer took longer to think, and, if so, by how much. So you will gain extra rating points for winning a game if you use less total thinking time than the computer, and you will gain fewer points for winning a game if you use more total thinking time than the computer.

What Your Rating Means

The following scale indicates your playing category:

If your rating is below 800 you are an absolute beginner.

Between 800 and 1,000 you are a novice.

From 1,000 to 1,200 you are an intermediate player.

From 1,200 to 1,500 you are an advanced player.

From 1,500 to 2,000 you have the potential to become an expert or master player.

From 2,000 to 2,200 you are an expert player.

From 2,200 to 2,400 you are a master strength player.

Above 2,400 you are too strong for this computer.

Note that when you load new batteries or connect a power adapter the computer will reset your rating to 1,500 and it will take a few games before your rating is steady.

31   LANGUAGE

After you first install the batteries or connect the adapter, the computer will display its information and messages in English. You may, however, change the language to French, German or Dutch. To do this:

-- Display the main menu by pressing MENU.

-- Keep pressing >> or << until the display shows "Preferences...".

-- Press ENTER (to gain access to the "preferences" sub-menu).

-- Keep pressing >> or << until the display shows "Language...".

-- Press ENTER. This displays the "language sub-sub-menu", which contains 4 items:

> English
> Francais
> Deutsch
> Nederlands

-- Keep pressing >> or << until the required language is shown. Then press ENTER to select it.

-- Press OK to confirm the change. Two further presses on OK (or CANCEL) will restore normal playing conditions.

32   LCD CONTRAST

The information on the LCD can be displayed darker or lighter (i.e. with greater or less contrast), at your choice.

To alter the contrast:

-- Display the main menu by pressing MENU.

-- Keep pressing >> or << until the display shows "Preferences...".

-- Press ENTER (to gain access to the "preferences" sub-menu).

-- Keep pressing >> or << until the display shows "Contrast".

-- Press ENTER (the number on the right "flashes". The contrast can now be increased or decreased by repeated presses on >> or <<. When you are happy with the display, press OK and the number stops flashing. Two further presses on OK (or CANCEL) will return you to normal playing conditions.

Sometimes you may find it more convenient when playing Black to have the black pieces at the bottom of the board, playing "up the board". You may do so by setting up the white pieces at the top of the board and the black pieces at the bottom, but do remember the rule that the white queen starts the game on a white square and the black queen on a black square.

When you have set up the pieces in this way, proceed as follows:

-- Bring the "main menu" onto the display by pressing MENU.

-- Keep pressing >> or << until the LCD shows "Preferences...".

-- Press ENTER (to display the "preferences" sub-menu).

-- Keep pressing >> or << until the LCD shows "Turn Board". If this is followed by "-", press ENTER to display "+" instead.

-- After two presses on OK, you may start to play. The computer will have swapped around all the pieces on its internal board.

WARNING !!

When you swap the board around remember that the square in White's nearest, left-hand corner is always a1, and the square in Black's nearest left-hand corner is always h8. When Black is playing from the bottom of the board the letters a-h are reversed (h on the left) and the numbers 1-8 are reversed (1 at the top), so the letters and numbers printed on the board do not apply. Also, if you swap the board around while in the middle of a game we suggest that you verify the position before continuing the game.

To turn the board back (so that White plays "up"), you follow the same procedure as above except that this time, when "Turn Board+" is displayed, your press on ENTER switches from "+" to "-".

Normally you will hear a beep every time you press a key or you press down on a square of the chess board. If you press an invalid key (for example trying to make an illegal move) you will hear the error sound.

You will also hear a ticking sound when the "clock" is running for either White or Black.

You may prefer your computer to operate without its audio signals. To alter the sound options, do the following:

-- Display the main menu bu pressing MENU.

-- Keep pressing >> or << until the LCD shows "Preferences...".

-- Press ENTER to display the "preferences" sub-menu. By repeatedly pressing >> or <<, you will see that this sub-menu contains the items "Sound" and "Ticking". The accompanying "+" or "-" shows whether the option is currently switched "on" or "off".

-- Press ENTER if you want to switch from "+" to "-" or vice versa. Press OK to confirm the alteration.

-- A further press on OK (or CANCEL) restores normal playing conditions.

If the "Ticking" item is switched "off", but "Sound" is "on", the computer will beep or give its error signal whenever appropriate, but there will be no "clock" sound.

If the "Sound" item is switched off, the LCD will show "Error" in all cases where you would normally hear the error buzz. Press the correct key or square, and the game or operation can be resumed.

If a game has to be interrupted, you may press the ON/OFF key; the computer then remembers the current position and all information relevant to the game, while using a minimum of current. After re-pressing the same key, you can simply resume the game from where you left off.

If it is your turn to move and you do not press a key or move a piece for 4 minutes, the computer will turn itself off automatically. To continue the game, press the ON/OFF key.

Note that when you are using a "tournament" playing level (see section 20), the computer will not turn itself off if you think for a long time. This is because in a human chess tournament the players sometimes think for more than 4 minutes over a move.

TROUBLESHOOTING GUIDE

Your chess computer has been manufactured and tested to very high quality standards and it is most unlikely to have a fault. We have found in the past that almost all so-called "faults" can be traced to the user accidentally pressing a wrong key or moving a piece to the wrong square, which makes it appear later in the game that the chess computer is not operating as expected.

THE MOST COMMON "FAULT" TO BE FOUND WITH CHESS COMPUTERS IS THAT THE USER HAS DONE SOMETHING WRONG AND, WITHOUT REALISING IT, PUTS THE BLAME ON THE COMPUTER!

Often a "fault" is due to the user having misunderstood something about the way the pieces move.

Just in case you do encounter a problem when using your chess computer we have prepared this troubleshooting guide.

If there is nothing showing on the display and the computer does not react to any key press or to pressing any of the chess pieces down on its square:

1   If you are using a power adapter make sure that the adapter is the correct voltage and polarity, as shown on the label on the underside of the computer.

       Also ensure that the adapter is plugged in properly to the computer and switched on at the mains (check the fuse in the mains plug).

2   If you are using batteries make sure that they are held firmly by the battery clips and that the positive tips of the batteries are all the right way round.

       If you have had the batteries a long time they may have run down so try replacing them.

3   If the batteries or power adapter appear to be OK the computer may have been affected by a static discharge which might have caused it to "lock up". Press a thin object in the "RESET" hole in the base of the computer and press it down firmly once.

If the computer has been playing normally but then refuses to make a move:

1   If the computer's clock is running then the computer is still thinking. Be patient if you can, or press the MOVE key and the computer will respond immediately with the best move it has found so far.

2   If your colour symbol (□ or ■) is on, the computer thinks that you have not made your last move. Make sure that the pieces on the chess board are on the same squares as those in the computer's internal memory. You can do this by using "verify position" mode (see section 14). If the pieces all appear to be on the same squares as the computer thinks they should be, this means that it is still your turn to move.

If you make a move but the computer refuses to accept it as a move:

1   Make sure that you have completed your move by pressing down on the "to" square. If your move was castling, make sure that you have moved the rook as well as your king. If the move was an *en passant* capture, make sure that you have moved the capturing pawn in the correct way and removed the captured pawn from the chess board. If your move was a pawn promotion, make sure you have completed the move by (a) pressing the key corresponding to the piece to which you want to promote the pawn, and then (b) pressing down on the "to" square a second time. *All these "special moves" are described in section 9.*

2   Look to see if the computer's last move put you in check and if so, make sure that your reply move does not leave you in check.

3   Look to see if your move puts your king in check, either by moving the king to a square attacked by an enemy piece or by moving something away from a square where it blocked an attack on your king by an enemy piece.

4   Make sure that your move was not against any of the other rules of the game. If in doubt read through the parts of section 1 ("LEARN CHESS") which could affect whether your last move is against the rules.

5   If "Set up" is displayed on the LCD the computer is in "set-up position" mode (see section 22). To exit from "Set up" mode, press the OK key. If the computer responds with its error buzz (because the position on the board is illegal), you may either modify the position to make it legal, or else simply begin a new game by pressing NEW GAME followed by OK.

If the computer makes a move which you believe to be against the rules:

1   Make sure that the pieces on the chess board are on the same squares as those in the computer's internal memory. You can do this by using the "verify" feature (see section 14). If the pieces all appear to be on the same squares as the computer thinks they should be, this means that nothing is wrong but that you have probably misunderstood one of the rules (so read section 1 again), particularly if the computer's move was a castling move, a pawn promotion or an *en passant* capture.

2   Press the MOVE key to see if the computer makes a normal reply move. If it does you will know that the computer is working properly. Then you can use the "take back" feature (see section 17) and make a move of your own choosing to continue the game.

If the computer does not work with the adapter:

1. Make sure that the adapter voltage rating and connector are the correct type. Compare what is written on the adapter itself with what is on the rating label on the underside of your computer.

2. If you still do not know why the adapter does not work, check with a shop which sells adapters. They can easily test it for you with a voltmeter.

**If you do not hear any sound when you press the keys:**

Follow the procedure in section 34 to ensure that the sounds are switched on.

PRODUCT SPECIFICATION

MODEL NO.	:	11-006 /928
PRODUCT	:	Chess computer with teaching system
		Battery operated
MICRO-PROCESSOR TYPE	:	16-bit single chip
ROM SIZE	:	64K x 8
RAM SIZE	:	4K x 8
OSCILLATOR FREQUENCY	:	20 MHZ
DISPLAY TYPE	:	16 DIGIT DOT MATRIX LCD
FEATURES	:	- Teaching system
		- Sensory chess board
		- LCD display indicates moves & other information
		- Position verify / position set-up
		- Take-back moves
		- Long term memory
		- Thinks on opponent's time
		- Detects draws by 50 move rule, 3-fold repetition, & stalemate
		- Pawn promotions, castling & en passant captures
		- Audible tone to indicate moves
BATTERY SUPPLY	:	9.0 V (6 x C / LR14)

NOTE : Product should not be operated using rechargeable batteries.

RESET SWITCH : Resets computer and clears its memory. Reset switch accessible through base of unit. Reset switch is necessary since product can be affected by electrostatic discharge or other electrical disturbances.

NOTES : This product is not designed to be immune from the effects of electrostatic discharge, strong electromagnetic radiation or other electrical disturbances since malfunction under such conditions is non-critical. The Reset Switch is included in the design to allow unit to be Reset to normal operation and a new game started in the event of malfunction. It may also be necessary to re-install the batteries to start a new game.

Chess playing program provided by Ch. Donninger of NimzoWerkstatt, Vienna, Austria.

This product conforms to the EMC Requirements As laid down by the Council Directive 89/336/EEC.
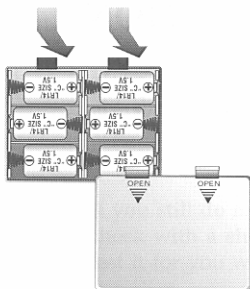
INSERTING THE BATTERIES:

1. Place the game face down on a flat surface and locate the battery compartment on the bottom of the unit.
2. Open the battery compartment door by pressing on the tab with your thumb and lifting up.
3. Insert six "C" size or LR14 batteries as shown in the illustration below.
4. Close the battery compartment cover.

TO ENSURE PROPER FUNCTION :

- DO NOT MIX OLD AND NEW BATTERIES.
- DO NOT MIX ALKALINE, STANDARD OR RECHARGEABLE BATTERIES.
- BATTERY INSTALLATION SHOULD BE DONE BY AN ADULT.
- NON-RECHARGEABLE BATTERIES ARE NOT TO BE RECHARGED.
- RECHARGEABLE BATTERIES ARE TO BE REMOVED FROM THE TOY BEFORE BEING CHARGED (IF REMOVABLE).
- RECHARGEABLE BATTERIES ARE ONLY TO BE CHARGED UNDER ADULT SUPERVISION (IF REMOVABLE).
- ONLY BATTERIES OF THE SAME OR EQUIVALENT TYPE AS RECOMMENDED ARE TO BE USED.
- BATTERIES ARE TO BE INSERTED WITH THE CORRECT POLARITY.
- EXHAUSTED BATTERIES ARE TO BE REMOVED FROM THE TOY.
- THE SUPPLY TERMINALS ARE NOT TO BE SHORT-CIRCUITED.
- THE TOY IS NOT INTENDED FOR CHILDREN UNDER 3 YEARS OLD.
- THE TRANSFORMER IS NOT A TOY.
- THE TOY MUST ONLY BE OPERATED THROUGH A TRANSFORMER FOR TOYS COMPLYING WITH CEE PUBLICATION 15.
- PARENT SHOULD EXAMINE THE UNIT AND ADAPTOR PERIODCALLY, IN CASE THERE IS ANY DAMAGE. THE TOY MUST NOT BE USED UNTIL THAT DAMAGE HAS BEEN PROPERLY REPAIRED.
- TOYS LIABLE TO BE CLEANED WITH LIQUID ARE TO BE DISCONNECTED FROM THE TRANSFORMER BEFORE CLEANING.