MILLENNIUM

EUROPE
Chess Champion
M800

User Manual

Further models:

M803 Chessmaster Pro
M807 Renkforce Chess Champion

Please note that the models are equipped differently. All functions are described in this manual, even if they are not available in some models.

How to insert the Batteries:

Place the game face down on a flat surface and locate the battery compartment on the bottom of the unit.

Open the battery compartment door by pressing on the tab with your thumb and lifting up. Your Chess Computer needs 3 x 1,5V "AA" or "LR6" batteries.

When inserting batteries, make sure that the positive tip of each battery matches up with the + sign inside the battery compartment. Close the battery compartment cover.

Do not forget to press the RESET button at the bottom side of the unit to ensure proper function.
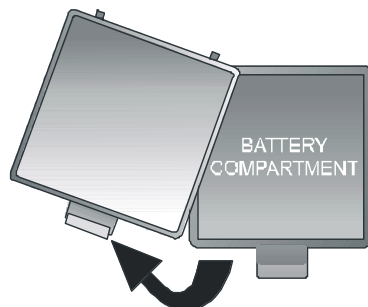
SAFETY INSTRUCTIONS FOR BATTERIES:

- WARNING! RISK OF EXPLOSION IF BATTERIES ARE NOT REPLACED PROPERLY. DISPOSAL OF USED BATTERIES ONLY TO BE DONE ACCORDING TO INSTRUCTIONS.
- NON-RECHARGEABLE BATTERIES ARE NOT TO BE RECHARGED. RISK OF EXPLOSION!
- RECHARGEABLE BATTERIES ARE ONLY TO BE RECHARGED WITH ADULT SUPERVISION.
- RECHARGEABLE BATTERIES MUST BE REMOVED FROM THE PRODUCT BEFORE BEING RECHARGED.
- ALWAYS REPLACE ALL BATTERIES AT ONCE.
- WHEN INSERTING BATTERIES, ENSURE CORRECT POLARITY!
- DIFFERENT BATTERY TYPES OR NEW AND USED BATTERIES MAY NOT BE USED TOGETHER.
- DO NOT MIX ALKALINE AND NORMAL BATTERIES (ZINC-CARBON) OR RECHARGEABLE BATTERIES.
- KEEP BATTERIES OUT OF REACH OF SMALL CHILDREN. DO NOT DISPOSE OF IN FIRE, SHORT-CIRCUIT OR TAKE APART BATTERIES.
- IF NECESSARY, CLEAN BATTERY AND DEVICE CONTACTS BEFORE INSERTING THEM.
- BATTERY CONNECTOR CLIPS ARE NOT TO BE SHORT-CIRCUITED.
- DO NOT EXPOSE BATTERIES TO EXTREME CONDITIONS; E.G. ON RADIATORS OR DIRECT SUNLIGHT! INCREASED RISK OF LEAKS!
- REMOVE FULLY DISCHARGED BATTERIES FROM DEVICE IMMEDIATELY. INCREASED RISK OF LEAKS!
- AVOID CONTACT WITH SKIN, EYES AND MUCOUS MEMBRANES. IN CASE OF CONTACT WITH BATTERY FLUID, IMMEDIATELY RINSE AFFECTED AREAS WITH COPIOUS AMOUNTS OF CLEAN WATER AND CONTACT A DOCTOR.
- REMOVE BATTERIES FROM DEVICE WHEN NOT IN USE FOR LONG PERIODS OF TIME.
- INSERTION AND REPLACEMENT OF BATTERIES IS ONLY TO BE DONE BY ADULTS.

Notes on power supply operation (available as an option)

You can also operate the product using an AC adaptor. Only use the adaptor specified for this purpose, part no. M811. This is available as an optional accessory from our online shop at www.computerchess.com. The port is located in the front left hand section to the side on the front of your chess computer.

NOTE: The AC adaptor has the following specifications: Output 5V DC 0.6A.
Only use the specified AC adaptor, M811.

When using the AC adaptor, please observe the following:
- The power socket should be located close to the device and should be easily accessible.
- The device should not be connected to more power sources than recommended.
- The electrical contacts must not be short-circuited.
- Always disconnect the adaptor from the mains before cleaning the device.
- Regularly check the product and the AC adaptor for damage, and do not use either of them if they are damaged. Never open them up.
- Please follow any safety instructions printed on the AC adaptor.

Content

Please note, that this product is not a toy as laid down in directive 2009/48/EC. If you allow your children to use the product, guide them to explain the machine properly and pay attention that they use it as intended by the manufacturer.

Warning! This product contains magnets. Magnets sticking together or becoming attached to a metallic object inside the human body can cause serious or fatal injury. Seek immediate medical help if magnets are swallowed or inhaled.

Disposal:

According to the EC directive 2012/19, the device must be disposed of properly at the end of its service life. Suitable parts of the device will then be recycled, reducing the environmental pollution. For more information, please contact your local disposal company or your municipal administration.

Disposal of batteries: Batteries are not to be disposed of in normal household waste. Each consumer is legally bound to dispose of batteries properly at collection points that have been set up for this purpose.

1 Setting Up

1.1 Batteries and choice of language

Insert the batteries into the compartment on the underside. Make sure they are the right way round ("+" matching with "+"). The computer should respond with a sound signal. The *Liquid Crystal Display* (LCD) should show the starting position for a game of Chess, with the word **English**, "blinking", in the bottom line.

If this display fails to appear, insert a thin object (e.g. paper clip) into the RESET hole on the underside of the computer, and press with it.

If you want the computer to give its messages in English, simply press the „E"- button. You can select one out of 13 different languages.

Language	Display shows
English	English
German	Deutsch
French	Français
Italian	Italiano
Spanish	Español
Dutch	NL
Portugese	POR
Swedish	Svenska
Finnish	Suomi
Czech	Čeština
Slovak	Sloven
Polish	Polski
Greek	Ελληνικά

To select a different language, keep pressing ▲ or ▼ until the desired option appears, *then* press „E". There are 7 choices: English, German, French, Italian, Spanish, Dutch (NL) and Portuguese (POR).
You may now start a game of Chess, with the computer playing at 10 seconds per move – see § 4.2.12 etc. For other possibilities, go to § 1.5 ("The Main Menu").

1.2 Switching Off/On

To switch on when not replacing the batteries, press the ON/OFF button
In general the computer will switch off automatically if left idle for 8½ minutes. When "off", it still retains the current game in its memory, and you can resume play later.

1.3   Backlight

The LCD has a backlight which can be switched on or off by holding down the SWAP button for about 1 second.
If the computer has waited over 1 minute for your next action, the light goes out automatically, then comes on again when you press any square or button.

1.4   Uses of the controls (summary)

ON / OFF	Switches the computer on or off. When "off", it still remembers the current game, which may be resumed later.
START	Gives access to the Main Menu, allowing you to start a new game or use any of the special features.
▲...▼	These buttons allow you to inspect all the items in a menu. Also, with ▼ you can retract one or more moves.
E (Enter)	Selects the currently displayed item in a menu. In some cases it takes you to the next stage in an operation.
ESC	Returns from a sub-menu to the Main Menu, or from the Main Menu to normal playing conditions. Used in some other cases to clear a message from the bottom line and allow play to proceed.
SWAP	Makes the computer play next, i.e. swap sides with you. At the start of a game, press SWAP if you want the computer to play first. When the computer is "thinking", SWAP interrupts it. When a Chess "tutor" message appears, SWAP gives further information. A long press on this button switches the Backlight on or off.
HELP	Displays a scrolling message which states what options you have available.
LEGAL	In Chess, after pressing a piece, you can press LEGAL to see what moves this piece may make. In a Chess exercise, press LEGAL if you "give up".
EXER CISE	Select one of the 100 Chess exercises. Find the solution!
RESET	Returns to the situation when the batteries were first loaded. Can be used in the event of a problem you do not understand.

1.5   The Main Menu

A press on the START button displays the first item on the Main Menu. By pressing ▲ or ▼ repeatedly, you can view all the items:

NEW GAME		See § 2
LEVEL		See §§ 4.2.12, 12.2
INVERT	(= Reverse board)	See § 12.7
OPTIONS		See § 12.1
RATING	(= "Rating number"; in Chess only)	See § 4.2.18
SET UP		See § 12.8
HINT		See § 12.5

To select an item, display it and press „E". (Instead, ESC returns to the previous situation.)

2 Choice of game

By selecting NEW GAME from the Main Menu then pressing ▲ or ▼ repeatedly, you can view all 8 game types:

CHESS		see § 4
CHECKERS		see § 5
REVERSI		see § 6
4 IN ROW	(= Four-in-a-Row, also called "Connect 4")	see § 7
FOX + G.	(= Fox and Geese)	see § 8
G/HOPPER	(= Grasshopper)	see § 9
NIM		see § 10
NORTH	(= Northcote's Game)	see § 11

To select a game, display it and press „E". (Instead, ESC returns to the Main Menu - § 1.5).)

3 General information for playing on the computer

3.1 General

The LCD (liquid crystal display) records the current situation in the game, and indicates the computer's play. In some games (Chess, Four-in-a-Row, Nim, Northcote's Game), you must take some decisions before play starts.

The computer or the user may play first. To make the computer play first, press SWAP when the game is ready to begin. The symbol □ or ■ (in the bottom left corner of the LCD) shows which side (White or Black) plays next.

Notation: Observe that the playing board is marked with the *co-ordinates* of each individual square, e.g. A1, G6 etc. These appear in the bottom line of the LCD when a move is being announced or carried out. *Example:* In Chess, the computer is moving its pawn from e7 to e5. The bottom line shows:

<div align="center">♟ E7E5</div>

The co-ordinates **E7** are shown "blinking", and so is the pawn on that square of the LCD board. Press the square on the playing board as you pick up the pawn. Then **E5** "blinks", and the pawn is shown alternating between e7 and e5. Press the e5 square as you place the pawn there.

When the computer is "thinking", the bottom line of the LCD displays a rotating "hourglass" symbol. It may also display the move that is being considered. To interrupt the computer and make it play at once, press SWAP.
When it is your turn to play, a press on SWAP makes the computer play next – i.e. it swaps sides with you.

An error (e.g. if you try to play an illegal move) is indicated by a buzz. If the co-ordinates are cleared from the bottom line, start your move again.

The rules of the games are explained in the relevant chapters.

3.2   End of the Game

This is announced as follows:

WW	White wins
BW	Black wins
1:0	First player wins
0:1	Second player wins
WW 29:35 (e.g.)	White wins with 35 pieces to 29 (in Reversi)

Draw

DRAW 3	Draw by 3-fold repetition (Chess only)
DRAW 50	Draw by 50-move rule (Chess only)
STALE	Draw by stalemate (Chess only)

4 Chess

4.1 How to play chess

4.1.1 _Chess pieces and basic positioning_

Each of the players ("White" and "Black") begins with 16 chessmen, or pieces, of his own colour – namely one _king,_ one _queen,_ two _rooks,_ two _bishops,_ two _knights_ and eight _pawns._

| KING: | ♔♚ | QUEEN: | ♕♛ | ROOK: | ♖♜ |
| BISHOP: | ♗♝ | KNIGHT: | ♘♞ | PAWN: | ♙♟ |

The most important piece is the king, since _the object of the game is to put your opponent's king in a position where it cannot avoid being captured._

At the start, the pieces are arranged like this:
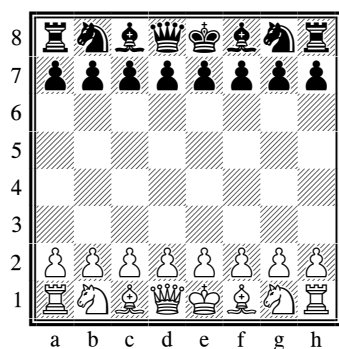
A common mistake during set-up is mixing up the queen and king, so remember: "white queen, white square" and "black queen, black square".

4.1.2 _The moves_

White makes the first move, then the players move alternately. When it is his turn, a player must move one of his pieces onto a square which is either vacant or occupied by an enemy piece. In the latter case the enemy piece is "captured", i.e. removed from the board. Each type of piece has its characteristic way of moving.

(a) *The king* moves one square at a time, in any direction – forwards, backwards, sideways or diagonally
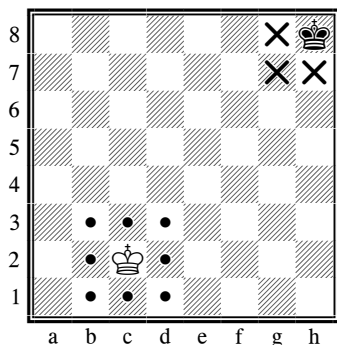
(b) *The queen* can move any number of squares at once, in a straight line – horizontally, vertically or diagonally
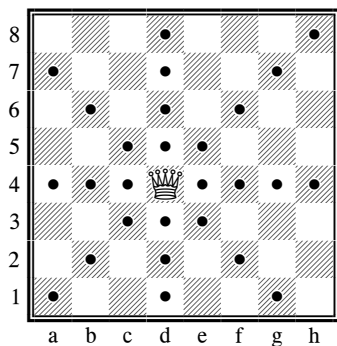
(c) The rook moves horizontally or vertically, any number of squares at once.
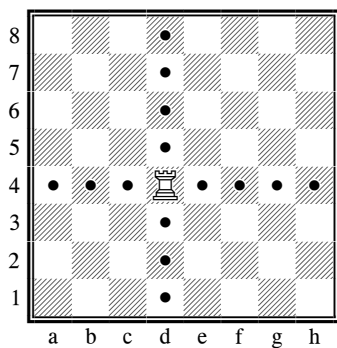
(d) *The bishop* moves diagonally, any number of squares at a time .
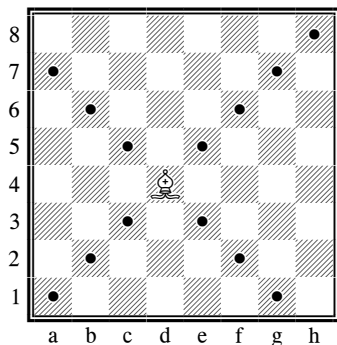
The queen, rook and bishop cannot "jump across" another piece. For the sole exception (where the rook "jumps over" the king), see "Castling" (§ 4.1.5.).

(e) *The knight's move* is like an "L-shape": two squares horizontally or vertically, then one square at right-angles. The knight is able to jump over other pieces (of either colour).
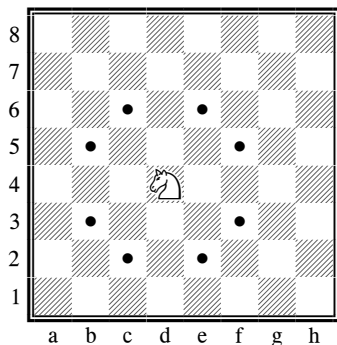
The pieces we have dealt with so far can *capture* enemy pieces by moving in their usual way. If it is White's turn to move in the position above, he may capture the black knight with his bishop if he wishes.

(f) The ordinary move of *the pawn* is simply one square straight forward – it cannot retreat. When making a *capture,* the pawn moves one square *diagonally* forward..
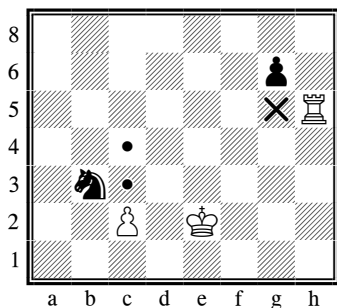
The pawn is the weakest chess piece, but there are some special points about the way it moves. From its initial position in the second row, it can advance by two squares. Whether to move it one or two squares is up to the player. However, once it has moved one square, a double move is no longer possible.

The pawn **captures in a different direction from the way it moves**, ie it captures diagonally one square left or right. This also applies to the pawn in its initial position. The diagram shows all possible pawn moves and captures.

The white pawn can advance one or two squares, or it can capture the black knight. The black pawn has already advanced one square from its initial position, and can therefore either advance another square, or capture the white rook. On reaching the far end of the board, a pawn is "promoted", i.e. changed into a queen, rook, bishop or knight. The player chooses the piece (normally a queen), and places it on the square to which his pawn has just advanced. The pawn is removed from the board.

4.1.3   *Check and checkmate: winning the game*

If a player attacks one piece unnoticed by his opponent, that piece is lost. With the king, however, the situation is different as it cannot be captured. It can be attacked like any other piece, but the attack must be countered in the next move. As this attack is actually threatening to **check** - with the king subsequently being in a **check position** – a less experienced player will at that moment announce "**check**" to warn the opponent. Your computer will do just that, but note that it is not really necessary.

There are basically three ways to counter a threatened **check**:

1) The king moves to a square not under threat;
2) The threatening piece is captured;
3) Another piece is positioned between the threatening piece and the king.
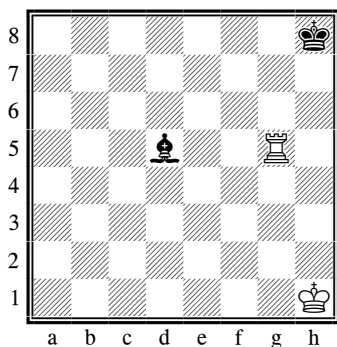
Here, all 3 situations are seen in a simple example. White is in check, threatened by bishop d5 and must make a move:

1) The king moves to h2 or g1 (not to g2 where it would remain in check);

2) The rook captures the black bishop;

3) The rook moves to g2, thus eliminating the check.

If a check cannot be countered by any of these 3 tactics, the king is checkmate, ie it couldn't possibly avoid being captured by the opponent's next move).

4.1.4   _Stalemate – drawn game_

If the player to move *cannot* make any legal move *and his king is not in check,* the game is a draw. This is called stalemate.
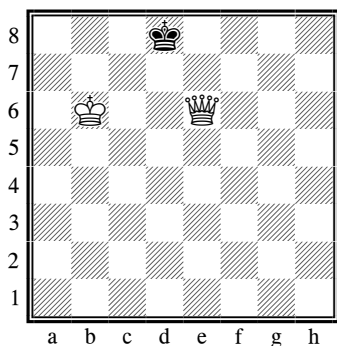
Here, it is Black's move. His king is not in check, but any move he makes with it would put it in check. Black therefore has no legal moves and is *stalemated*.

A draw may also be claimed if (a) exactly the same position occurs three times, with the same player to move; or (b) during a sequence of 50 moves for each side, no capture is made and no pawn is advanced.

A draw may also come about simply by agreement between the players.

4.1.5 _Castling_

This special move is made with the king and one of the rooks. The king moves two squares towards the rook; the rook jumps over the king, landing on the square next to it.
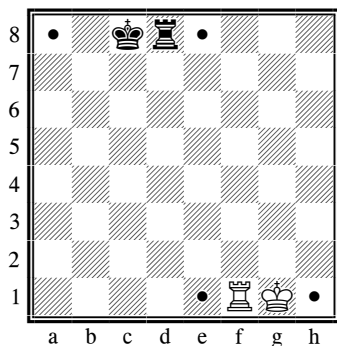
White has castled king's side; Black has castled queen's side

Note that a player may _not_ castle in the following circumstances:
- If there is any piece (of either colour) in between the king and the rook.
- If the king, or the rook with which the player wants to castle, has moved before.
- If the king is at present in check.
- If the square over which the king must pass (or, of course, the square where the king would arrive) is under attack from an enemy piece.

4.1.6 _En passant capture_

This rule originates from the pawn's double-step move. The diagram shows how it works:
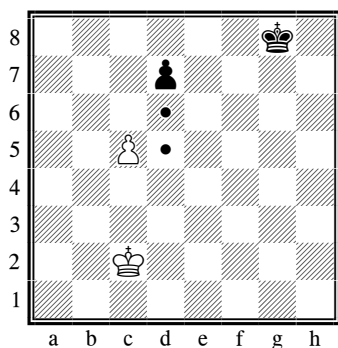
By advancing only one square, the black pawn would be captured by the white pawn. But is it possible to negotiate the danger zone by using the double-step move d7-d5? To prevent that from happening, the **en passant** capture (French.: _in passing_) was introduced:
If, after a double-step move, a pawn is positioned next to an opponent's pawn, this (latter) pawn is allowed to capture the other pawn as if it had been moved only one square. This move is executed exactly as a capture move after a single move: the white pawn moves from c5 to d6 and removes the black pawn

Important: Capturing en passant is possible only as a direct reply to a double-step move.

4.1.7 _Pawn promotion_

It is very unusual for a pawn to reach the opposite side of the board (normally it is captured on the way); however, on reaching the other side, it changes into a different piece of the same colour. It cannot become a king nor remain a pawn, so you have a choice between becoming a queen, rook, bishop or knight. Usually, the preferred promotion choice is the queen as it is the strongest piece, but in rare cases a knight promotion is preferable, as the knight has access to different squares.

Promotion is effected by removing the pawn and placing the new piece on the **promotion square**. Replacing the pawn by a piece captured before is not required, ie a player can have two queens or three knights on the board, even though it is not provided for in the original set-up.

This rule contributes a great deal to the fascination of chess since, without promotion, a chess game in its advanced phase could hardly be won with only the few pieces remaining.

4.1.8 _Material value of the pieces_

In chess, the material value of the pieces is not of ultimate importance, although the player with the more valuable pieces will usually win the game. For the strategic evaluation, the computer uses the following values:

Pawn   = 100 points
Knight   = 300 points
Bishop   = 300 points
Rook   = 500 points
Queen   = 900 points

The king has no material value as it cannot be captured. Here are some important terms regularly used: the difference in value between a knight (or bishop) and a rook is called **quality**. If both sides capture pieces of equal value, the term **exchange** is used. And it is not unusual for a player to lose a certain piece intentionally in order to gain an advantage elsewhere; this is called **sacrifice**.

4.2 Playing chess against the computer

4.2.1 Starting a game

Press **START**; "NEW GAME" starts blinking in the display. Press „**E**". Use ▲ or ▼ to select "Chess" and confirm with „**E**".

4.2.2 Selecting the mode

NORMAL	(rate of play initially set to 10 seconds/move)	see § 4.2.4 etc.
♙♕	(play with kings, queens and pawns only)	see § 4.2.3
♙♖	(play with kings, rooks and pawns only)	see § 4.2.3
♙♗	(play with kings, bishops and pawns only)	see § 4.2.3
♙♘	(play with kings, knights and pawns only)	see § 4.2.3
♙	(play with kings and pawns only)	see § 4.2.3
MT. IN 2	(computer searches for mate in 2 moves)	see § 4.2.10
RAPID 30	(rapid play: 30 minutes per player per game)	see § 4.2.12
RAPID 25	(rapid play: 25 minutes per player per game)	see § 4.2.12
BLITZ 5	(blitz Chess: 5 minutes per player per game)	see § 4.2.12
RATED	(rated game: points awarded for the user's moves)	see § 4.2.18
EXERCISE		see § 4.2.17

To select a mode, display it and press „E". (Instead, ESC returns to the list of game types – § 2.) We suggest that for your first games you select NORMAL.

4.2.3 Starting with reduced material

By selecting the appropriate mode (§4.2.2), you can start a game with 2 or 3 types of piece only. This offers practice for novices. The pieces start in their usual positions and play proceeds normally.)

4.2.4   *Making moves*

To carry out your move, press the squares you are moving from and to. Similarly for the computer's move: press the "from" and "to" squares which are shown "blinking" on the LCD.

4.2.5   *Captures*

If you want to capture one of the computer's pieces, proceed as if playing a regular move: press your piece successively first on the "from" and then on the "to" square and remove the captured piece (without pressing). The computer automatically registers that the piece has been captured and calculates its next move.

If the computer captures one of your pieces, it also proceeds as in a regular move; however, in this case, an "x" symbol flashes between the "from" and "to" squares. Simply execute the computer's capturing move as if it was your own, ie take the piece off the board after pressing the "from" and "to" squares.

4.2.6   *Special moves*

Castling: Make the king's move first, and the computer directs you to move the rook.

En passant capture: Move the capturing pawn, then press the square of the captured pawn – as indicated by the LCD.

Pawn promotion: Carry out the pawn move. Use ▲ or ▼ to select the type of piece for promotion. When the right piece is shown on the LCD, press the promotion square (or „E"). When promoting its own pawn, the computer always chooses a queen.

4.2.7   *Retracting your play*

If you have selected a "from" square but then change your mind, re-press the square or press ESC, and start again.

After carrying out your move and the computer's reply, you may want to retract these moves and play differently. To retract a move, press ▼. In some cases you will simply need to move the piece back, pressing on the "to" and "from" squares. In other cases, captured pieces will also need to be replaced, or Reversi pieces "flipped", etc. In every case, *press the square that is shown "blinking" on the LCD board and in the bottom line,* as you add, remove or change the piece on that square. Make sure that the position on the playing board corresponds to that on the LCD board. You can then play a new move (or press SWAP to make the computer do so.)

In Chess, by repeating the operation you can take back up to 8 moves by both sides, and the retracted moves may be replayed by means of the ▲ button. In other games, only the last pair of moves can be taken back.

4.2.8   *Changing sides – the "SWAP" key*

- Before the game starts, while "White" shows in the display, pressing **SWAP** results in the computer taking the white pieces.
- Also during the game, you can change sides by pressing **SWAP**, provided it is your turn. When pressing **SWAP** after each move, the computer plays against itself.
- Pressing **SWAP** while the computer is preparing to move will interrupt the calculation and force it to make its move immediately. It will execute the best move calculated up to that point, which will usually not be the best move in absolute terms.

4.2.9   *Hints for playing chess against the computer*

If you press one of your pieces then press LEGAL, the computer shows you all the moves that this piece can legally make. The destination squares are indicated, one after the other, by the "+" sign.

In the bottom line, a "+" sign shows you are in check; it is accompanied by a sequence of beeps.

While the computer is displaying its own move, the Main Menu (§1.5) can be accessed and contains an extra item: EVALUATE. By selecting this item you can see an assessment of the position, e.g.

192   The computer thinks it has an advantage worth nearly 2 pawns.
-54   It has a disadvantage worth a little more than half a pawn.
Opening The move is in the computer's "library" of standard openings.

Press ESC twice, and carry out the computer's move.

If the bottom line displays CAREFUL! or SURE ?, the computer is offering a "tutor" message – see § 12.1.6. You can continue by simply pressing ESC.

4.2.10   *Chess problems (mate in 2 or 3 moves)*

The computer can solve Chess problems for mate in 3 moves (unless they involve "under-promoting" a pawn to a rook, bishop or knight).

(1)   Set up the position, as described in § 12.8.
(2)   Select the level with "no limit" (§ 4.2.12).
(3)   Press SWAP. Provided there is a valid solution, the computer will keep analysing until it finds the move, then display it in the normal way.
(4)   After carrying the move out, you can play for the defending side, and the computer will find the 2nd and 3rd moves of the solution

There is also a special feature for mate in 2 moves, incorporating 10 standard problem positions. To use this feature, select "MT. IN 2" from the list of Chess modes (§4.2.2). Then press ▲ or ▼ repeatedly to view the 10 problems, plus one other item: **SU** (= set up). To select the problem position that is currently displayed, press „E". Then press SWAP, and the computer will find and display the solution. If you press „E" when **SU** is shown, this takes you into "set up" mode (§12.8). You can then set up (e.g.) a problem position from a magazine. On exit from "set up" mode, press SWAP and the computer will search for a mate in 2 moves.

4.2.11   *Check – Mate – Draw*

If the computer announces "check", it will do so by showing the "+" symbol in the display. This is just a reminder that you must counter the check with your next move. If you "**check**" the computer, no acknowledgement is given.

If one player (you or the computer) achieves a "checkmate", "**BW 0:1**" (ie black wins) or "**WW 1:0**" (ie white wins) appears in the display.

In a stalemate situation, "**STALEMATE**" is displayed.

In addition, a draw is indicated by a threefold repetition of position (but only in the simplified format, where the moves are repeated successively right away). After the third repeat, "**DRAW 3**" is displayed. In the same way, a stalemate according to the "fifty move rule" is announced and displayed as "**DRAW 50**". If only the kings remain on the board, a checkmate becomes impossible. In this case, both parties should agree on a draw to finish the game.

However, the computer will not end the game in any of these cases (except the draw situation), and you could theoretically continue playing as long as you wish.

4.2.12   *Levels of playing strength*

To alter the level:

(1) Select LEVEL from the Main Menu (§ 1.5).
(2) Press ▲ or ▼ repeatedly to inspect the levels.
(3) When the desired level is shown, press „E".

There are 30 Chess levels, as follows:
- 4 "fun" levels for novices. On these levels (1 is weakest), the computer makes deliberate mistakes.
- 15 "timed move" levels, e.g. **10 S/MV** (= 10 seconds per move). If the "tutor" feature is "off" (see § 12.1.6), the computer will move within the prescribed time. Otherwise it may take a little longer.
- 10 "timed game" levels, e.g. 30 M/GM (= 30 minutes per game). Each player has the prescribed number of minutes in which to complete all his moves. The symbol ☼ indicates that a "timed game" is in progress. On these levels the computer will not switch off automatically (§1.2). The time used so far is shown on the LCD. If the time runs out, a message announces that the player has lost, but the game may be continued in "normal" mode: press ESC, then make a move or press SWAP. Games on the 5, 25 or 30 minute levels can be started directly by selecting the appropriate mode (see § 4.2.2)
- 1 level with "no limit" – the computer will normally carry on thinking until you press SWAP.

4.2.13   Style

In addition to the various play levels. you can select the computer's playing style. Five different style levels can be selected, which can be roughly described as follows:

very passive   passive   normal   active   aggressive

To set the computer's Chess style:

(1)   Use **START** and ▲ or ▼ to access the sub menu **Options** and confirm with „**E**"
(2)   Select option **STYLE** and confirm with „**E**".
(3)   Use ▲ or ▼ to view the 5 styles: Normal, Active, Aggressive, Very Passive, Passive.
(4)   Press „E" when the desired style is displayed.
(5)   Press ESC twice to resume play.

With increasingly "active" settings, the computer usually pushes harder to advance across the board centre and attack your pieces.
In the context of the selected play level, it may possibly start somewhat less qualified attacks. At more passive style levels, the computer tends to keep its pieces within its own half and may even draw in on itself, ie take up very defensive positions.

4.2.14   Positional evaluation

While the computer is displaying its own move, the Main Menu (§1.5) can be accessed and contains an extra item: EVALUATE. By selecting this item you can see an assessment of the position, e.g.

192   The computer thinks it has an advantage worth nearly 2 pawns.
-54   It has a disadvantage worth a little more than half a pawn.
Opening The move is in the computer's "library" of standard openings.

Press ESC twice, and carry out the computer's move.

4.2.15   Hints –Suggestions on moves by the computer

To ask the computer to suggest a move for you, select HINT from the main menu (§1.5). The hint is displayed by a "scrolling" message. To reject the hint, press ESC. To accept it, press „E" and the computer directs you to carry out the move.

4.2.16   Tutor

In Chess, the "tutor" feature draws your attention to weak moves and warns you of the computer's threats. To switch this feature off or on:

(1)   Select TUTOR from the Options sub-menu (§ 12.1)
(2)   Press „E" to switch between **1** and **0**. (The symbol ♞ shows that the tutor feature is "on".)
(3)   Press ESC twice to return to the game.

When the "tutor" is "on", the computer will display **SURE ?** if it thinks your last move is a mistake. You may then do any of the following:

Press SWAP for explanation, e.g.:
- o   " You could checkmate me"
- o   "I can take that piece."
- o   "You could win material worth 3 pawns."

Press SWAP again, to see the move that the computer thinks you have missed.
Press ▼ and take your move (see § 12.3).
Press ESC to let your move stand.

If the computer displays **CAREFUL!**, its own last move contains a threat. You may then press SWAP for explanation, e.g.

"I am threatening checkmate."

A second press on SWAP displays the threatened move. When ready, press ESC and continue playing.

4.2.17   Chess exercises – find the solution

The computer has a set of 100 Exercise positions in which you can try to find the correct move. The higher the number of the Exercise position, the more difficult it is to find the correct solution.   The   solutions   are   shown   at   the   end   of   this   manual.

To use this feature:
(1)   Select EXERCISE from the list of Chess modes (§ 4.2.2)
(2)   Use ▲ or ▼ and „E" to select an Exercise number. The symbol □ or ■ shows which side is to move, and a scrolling message indicates the task – e.g. "Find the move that will lead to checkmate." The symbol ↕ ("blinking") indicates that the position on the board is an exercise.
(3)   Play the move that you think is correct.

<u>If your move is right</u> :
- The computer displays your score for this exercise. Press ▼ if you want to see your percentage for all exercises solved so far.
- Press „E", and the next Exercise number is shown. Press „E" again to select it (or use ▲ or ▼ and „E" to obtain a different exercise).

<u>If your move is wrong:</u>
- The computer buzzes and gives a corresponding message.
- You may now press LEGAL for further explanation. If you press LEGAL a second time, the computer tells you the correct move.
- You may press ▲ or ▼ to retract your move (see § 12.3) and try another one.

Generally you score 6 points for being right first try, 4 points for second try, 2 for third try. If the computer has shown you the solution, you score zero. During an exercise, your percentage score can be seen as an item in the Main Menu (§1.5). After a break in the sequence of exercises (e.g. if you skip from number 5 to number 10), the percentage starts again from zero.

If your move (right or wrong) does not give checkmate, you may press SWAP and play against the computer from the resulting position. This allows you to explore the consequences of your move, e.g. to see how checkmate is actually brought about. In these circumstances the computer will give "tutor" messages (see § 4.2.16), but some other functions (hints, as in § 4.2.15,; retraction of moves, as in § 12.3) will be unavailable.

4.2.18   *"Rated" game*

In a "rated" game, the computer gives you:
- a score (0-6) for each move;
- a "performance rating", i.e. an overall assessment of your play in the current game, provided that 10 moves have been made by both sides;
- a "rating number", based on your accumulated performances in rated games.

To play a "rated" game:
(1) Select RATED from the list of Chess modes (§ 4.2.2)
(2) Using ▲ or ▼ and „E", select the time limit in seconds per move. (*Note:* In "rated" mode, the ordinary system of levels – see § 4.2.12 – does not apply.)

The symbols ↕🕑 show that the computer is in "rated" mode. Your time for the current move "counts down" on the display. You can score more points by taking less time. If the time runs out, you can still move but will gain fewer points.

The score for your move is indicated by a sequence of "beeps". (A single low-pitched beep denotes 1 or 0.) Your total so far is displayed for 3 seconds. During that time you may
- press „E" to see your current percentage;
- press „E" again to see your "performance rating" for the game.

To view your "rating number", i.e. the average of performances so far, select RATING from the Main Menu (§1.5). To resume play, press ESC twice.

5   Checkers

5.1   How to play checkers

5.1.1   *The Checkers board and pieces*
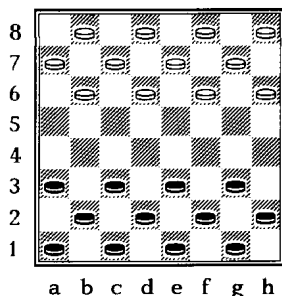
Checkers (or Draughts) is played on an 8x8 chequered board, but the pieces only move on squares of one colour. Each of the opponents ("Black" and "White") starts with 12 pieces, arranged like this:

The players take it in turns to move one piece at a time. Black moves first. *The object of the game is to leave your opponent without any moves.* This is usually achieved by capturing all his pieces, but you also win if you immobilize them all by blocking them.

Sometimes neither player is able to win. This is often the case when only a few pieces remain, the same number on each side.

5.1.2   *The man and how it moves*

At the start, each of the 24 pieces is called a *man.* Its ordinary move is one square diagonally forward, onto a vacant square. In the starting position (e.g.), the black man on c3 may move to b4 or d4. In reply, White may move his man from b6 to either a5 or c5; or his man on h6 may go to g5; etc.

5.1.3   *Capturing enemy pieces*
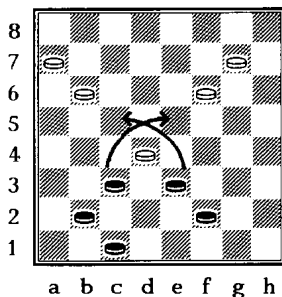
A man captures an enemy piece by moving *two* squares forward along the diagonal, jumping over the enemy to land on the vacant square beyond. The enemy piece is removed from the board. *In Checkers, if you can make a capture, you must do so.*

In this position Black has the choice of two captures:

- The man on c3 can capture the white man on d4 by jumping over it and landing on e5.
- The man on e3 can capture the same white man by jumping to c5.

In either case, the man making the capture will be captured in turn. Then (as you can see), each player will capture one more man.
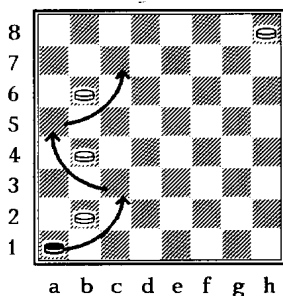
Multiple captures: If a capturing piece lands on a square from which it can make another capture, then it must do so – as part of the same move. In the left-hand diagram below, the black man on a1 must capture the white man on b2, landing on c3. The same man must then jump to a5 (removing the white man on b4), then c7 (removing the man on b6).

In a situation where two different capturing moves are possible, one of which would lead to the capture of more pieces than the other option, the decision on which option to choose is left to the player. Note, however, that one of the two moves must be chosen. Here is an example:
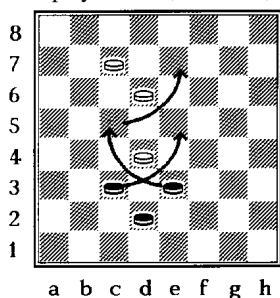
The black piece on C3 can capture the white piece on D4 and ends up on E5. with this move, black only captures one piece. However, from E3, black can capture the white piece on D4, ends up on C5, takes the white piece on D6 and finishes its move on E7. Although the latter move by black captures 2 pieces, black can decide freely which capturing move should be chosen. Usually (but not always) the best move is the one that captures the most material.

5.1.4   *The king and how it moves*

When a man reaches the far side of the board it is immediately "crowned" – promoted to a *king*. (To show this on a traditional Checkers board, we place one man on top of another.) Kings can move (and capture) backwards as well as forwards. For illustration, here are some examples:
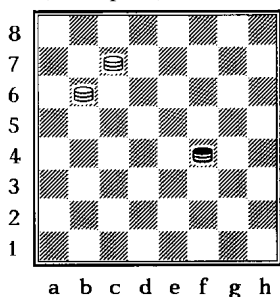
In this position, the black **queen on F4** can move to G5, E5, G3 or E3 since, in contrast to normal pieces, the black queen also has access to squares E3 and G3, which are inaccessible to a normal piece on F4.
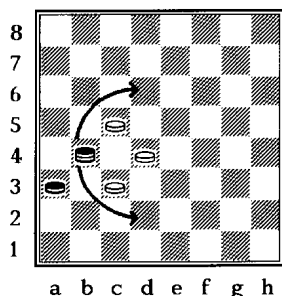
Here, the black queen on B4 can either capture the white piece on C5 and end up on D6, or capture the white piece on C3 and end up on D2. A normal black piece could **not** execute the capturing move via C3 to D2, as it only moves forward.

Note: If a man lands on its crowning square by making a capture, it may *not* capture another enemy piece as part of the same move.

5.2   Playing against the computer

Press **START**; "NEW GAME" starts blinking in the display. Press „**E**". Use ▲ or ▼ to select "CHECKERS" and confirm with „**E**."

Press the squares you are moving *from* and *to*. For a multiple capture, press each square where the capturing piece lands.

Computer's move: The LCD indicates the *from* square ("blinking") and the *to* square, e.g. **D6C5** – press the square marked D6 then the square marked C5, as you move the piece. For a multiple capture, press each square that "blinks" on the LCD.

After a capture, the bottom line shows (e.g.) **E5=X**. Press the square as you remove the piece that was captured there.

If you reach the opposite back rank, thereby acquiring a queen, the coordinates for the promotion square and the symbol for the queen start blinking. Change your man into a queen (by adding another piece on top) and **press** the promotion square **again** to confirm. Follow the   same   steps   if   the   computer   acquires   a   queen.

Note: The computer's level of play can be adjusted as in § 12.2. For players who are no longer novices, Level 7 or above is recommended.

6 Reversi

6.1 How to play Reversi

6.1.1 The board and pieces

In Reversi the players use a set of 64 discs, or playing pieces, which are coloured white on one side and black on the other. At the start, the 8x8 board is empty. One player ("Black") has 32 pieces with the black side turned up. His opponent ("White") has 32 pieces with the white side showing.

Whenever it is his turn, a player places one of his pieces, with his own colour uppermost, on a vacant square of the board – provided he can do so according to the rules which will be explained.

6.1.2 Beginning the game

Black places a piece on one of the four central squares: d4, e4, d5 or e5. White responds by placing a piece on another of these squares. Black then occupies a third central square, and White occupies the remaining one. At this point there are two possible patterns:
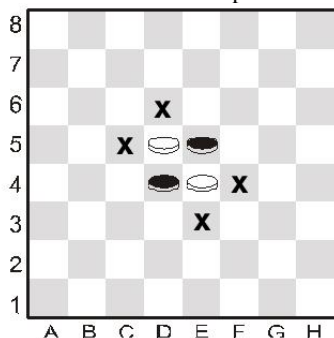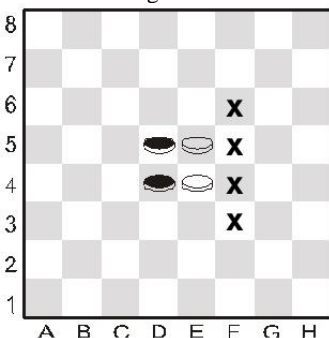
6.1.3 Continuing the game

Play now continues according to the following rule:

When it is his turn, a player places a piece on the board in such a way that one or more pieces of the opposite colour are enclosed, in an unbroken straight line, between this new piece and another of the player's own colour.

The line of pieces may be horizontal, vertical or diagonal.

So in the left-hand position (above), Black can insert a piece at f4, "sandwiching" the white piece on e4 between the black ones on f4 and d4. Black could also play at f3, f5 or f6. In the right-hand position, he can play at c5, d6, e3 or f4. The piece of the opposing colour, "sandwiched" between the player's new and old pieces, is flipped over to show the same colour as the two pieces enclosing it.

Also, several pieces in one line can change colour simultaneously. Eg, with three white pieces in a horizontal, vertical or diagonal line between a black piece already in position and another one just moved there, all three change colour simultaneously. One piece can change colour several times during a game. In the position on the right, for example, White can counter the last move by Black by moving to e1, causing all black pieces from e2 to e3 to change to white.

If a player *cannot* place a piece in such a way as to surround and capture one or more pieces of the opposite colour, he must "pass" and his opponent has another turn.

6.1.4   *Result of the game*

Neither player can insert more than 32 pieces. The game ends when they are both unable to play, and the winner is the one with more pieces of his own colour on the board. If they both have the same number, the game is a draw.

6.2   Playing against the computer

6.2.1   *Starting a game*

To start a game of Reversi, first press **START**. Then use ▲ or ▼ to select "NEW GAME" and confirm with „**E**". Now use ▲ or ▼ to select **Reversi** and confirm with „**E**" again. Press your piece (with your colour facing up) on to the target or "to" square. With the computer playing, a "blinking" piece is displayed. Press down on the appropriate square to "place" the piece.

6.2.2   *How to „E" a move*

Press with your piece as you insert it on its square with your own colour uppermost. On the computer's turn, a piece is shown "blinking" on the LCD. Press the corresponding square as you insert the piece.

When a piece must be "flipped", it is shown oscillating between white and black on the LCD board. Press the square as you turn the piece over.
When the computer must "pass": There are 3 "beeps", the display briefly shows **PASS**, and the user has another turn.
When the user must "pass": The display shows **PASS**. Press „E", and play continues.
End of game: The winner is shown as WW (White wins) or BW (Black wins), and the number of pieces remaining for each player is displayed. The black pieces are always shown first, followed by white, e.g. **WW 29:35:** White wins, 35 to 29 pieces.

7   Four-in-a-row

7.1   The rules

4 Four-in-a-row is a game for two players. The game board is limited to 7 vertical rows. Although the rows usually offer space for 6 pieces, the computer offers you the choice of using a larger board. One player ("White") uses the white pieces, his opponent ("Black") the black pieces.

"White" starts by placing a piece on any square in the bottom row (a1-g1). The players then take turns to place their pieces, one each move. Each piece must be positioned on a free square, either in the bottom row or above a piece already in place.

Here, White begins by placing a piece on d1. Black can now place a piece directly on top of the white piece (d2), or any free square on the bottom row (a1, b1, c1, e1, f1, g1, h1). If Black places a piece on e1, White can place a piece on d2, e2 or in the bottom row. The positioning could look like this: On his second move, Black can occupy one of the squares a1, b1, c1, d3, e2, f1, g1 or h1. The aim of the game is to place four pieces of the same –colour in such a way that they form a **continuous vertical, horizontal or diagonal straight line**. The first player to achieve this wins the game. If neither of the players succeeds, the result is a draw.
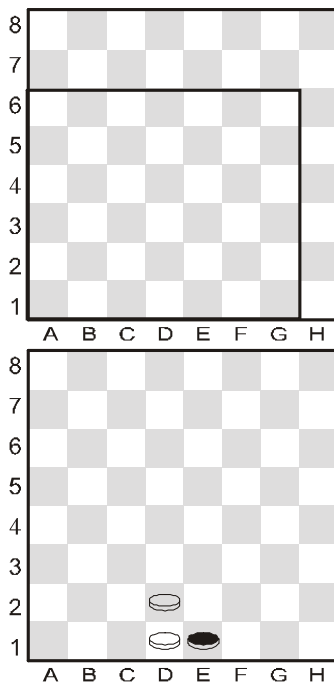
7.2   Playing against the computer

To start a game of **Four-in-a-row**, first press **START**. Then use ▲ or ▼ to select "NEW GAME" and confirm with „E". Now use ▲ or ▼ to select **4 in ROW** and confirm with „E" again.

The squares in the playing area are marked by "+" signs. The area may be 6, 7 or 8 rows high. At the start, the bottom line shows (e.g.) ROWS 6

You may alter the number of rows with ▲ or ▼ . When the playing area is the desired size, press „E".

<u>On your turn</u>: You may press any square in the column where you are inserting a piece.

<u>On the computer's turn</u>: Insert a piece on the square indicated by the LCD, and press down with it.

8   Fox and Geese

8.1   The rules

One player has four white pieces – the "geese", which start on b8, d8, f8 and h8. On each turn, he moves a goose diagonally forwards onto an adjacent vacant square – like a man in Checkers.

His opponent has a single black piece – the "fox". The fox moves like a *king* in Checkers – diagonally forwards *or* backwards onto an adjacent vacant. When one player is unable to make any more moves, his opponent wins.

8.2   Playing against the computer

To start a game of Fox and Geese, first press **START**. Then use ▲ or ▼ to select "NEW GAME" and confirm with **„E"**. Now use ▲ or ▼ to select **FOX + G** and confirm with **„E"** again.

If you want to play the fox: Begin by choosing your starting square: a1, c1, e1 or g1. Place a black piece on the square, press it, and confirm with „E".
On subsequent turns, simply press the square you are moving *to*.

To play the geese: Begin the game by pressing SWAP. Place the fox on its starting square as indicated by the LCD, and press on it. To move a goose, press the squares you are moving *from* and *to*.

On the computer's turn: Press the squares that the piece moves *from* and *to* – as indicated on the LCD.

9   Grasshopper

9.1   The rules

Each player has 10 pieces which start the game in the area in the bottom corner on his right.
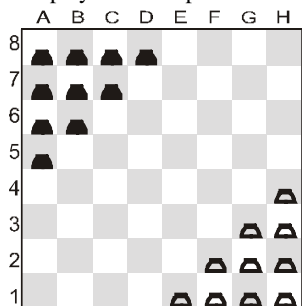
White moves first. On his turn, a player moves a piece in one of two ways:

(a)   The piece can move to any adjacent vacant square – e.g. from e1 to d1, d2 or e2.

(b)   It can jump *over* an adjacent piece (of either colour), onto the vacant square beyond – e.g. the piece on g1 (see diagram) can jump to e3. The piece on f1 can jump to d1 or f3 (or move to e2).

Object of the game: To occupy your opponent's "starting area". After the first move, *you lose if your own starting area is completely occupied* (by pieces of either or both colours).

9.2   Playing against the computer

To start a game of **Grasshopper**, first press **START**. Then use ▲ or ▼ to select "NEW GAME" and confirm with „**E**". Now use ▲ or ▼ to select **G/HOPPER** and confirm with „**E**" again.

To make your move: Press on the squares you are moving *from* and *to*.

Multiple jumps: If a piece completing a jump is in a position to make another jump, it may do so as part of the same move (though this is not obligatory, as it is in Checkers). Up to 8 jumps may be made at a time (though without landing twice on the same square). When carrying out a multiple jump, press every square in the sequence. To terminate your move when a further jump is possible, press the destination square a second time.

Computer's move: The LCD indicates the *from* square ("blinking") and the *to* square, e.g. **A8C6** – press the square marked A8 then the square marked C6, as you move the piece. In the case of a multiple jump, continue by pressing each square as it "blinks" on the display.

10 NIM

10.1 The rules
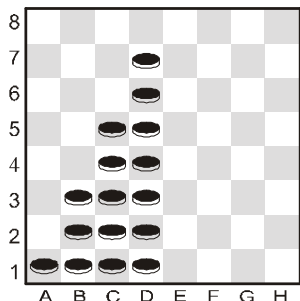
In the "default" starting position, there are 4 piles of pieces: The players take it in turns to remove pieces from the board. On his turn, a player takes a number of pieces from a single pile – it may be the whole pile, or just one piece, or any number in between. The player who takes the last piece wins – unless the opposite was agreed at the start of the game.

10.2 Playing against the computer

10.2.1 *Before play starts*

The bottom line shows **LW** (= "Last to play wins") or **LL** (= "Last to play loses"). You can switch between the two by using ▲ or ▼. When the desired option is shown, press „E".

The display then shows **DEFAULT**, and you have these choices:
- To play from the "default" starting position: press „E".
- To play from an alternative starting position:
  o Press ▲ or ▼ (this displays: **COLUMNS?**).
  o Press a square in one of the columns c-h. This column will contain the rightmost pile of pieces.
  o Press „E", and the number of pieces in each pile is decided at random. Place the pieces on the board as indicated on the LCD.

10.2.2 *The play*

Press the *top* and *bottom* pieces that you want to remove. Take these pieces off the board, together with any that are in between. To remove a single piece, press its square *twice*.

On the computer's turn:
(1)   The top piece to be removed is shown "blinking" on the LCD. Press this piece.
(2)   The top and bottom pieces now "blink" alternately. Press the bottom piece.
(3)   Remove this piece and those above it.

11 Northcote's Game

11.1 The rules

The "default" starting position looks like this:
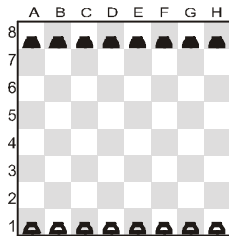
The player with the white pieces begins by moving one piece forward. It can go as far as he likes, but must stop short of the black piece in the same column. Black replies by doing the same. The players move alternately until all the pieces are blocking each other. The player who makes the last move loses, *unless* the opposite was agreed beforehand.

11.2 Playing against the computer

11.2.1 *Before play starts*

The bottom line shows **LL** (= "Last to play loses") or **LW** (= "Last to play wins"). You can switch between the two by using ▲ or ▼. When the desired option is shown, press „E".

The display then shows **DEFAULT**, and you have these choices:
- To play from the "default" starting position: press „E".
- To play from an alternative starting position:
  - o Press ▲ or ▼ (this displays: **COLUMNS?**).
  - o Press a square in one of the columns c-h. This column will contain the rightmost pile of pieces.
  - o Press „E", and the number of pieces in each pile is decided at random. Place the pieces on the board as indicated on the LCD.

11.2.2 *The play*

On your turn, press the squares you are moving *from* and *to*. Similarly to carry out the computer's move, press the "from" and "to" squares which are shown "blinking" on the LCD.

12 Special Features

12.1 Options

You can adjust various parameters after selecting OPTIONS from the Main Menu (§ 1.5). This displays the first item in the "Options Sub-menu". Press ▲ or ▼ repeatedly to view all the items:

SOUNDS		see § 12.1.1
STYLE	(chess only)	see § 12.1.2
CONT..	(= LCD-contrast)	see § 12.1.3
REF.	(= "Referee" mode)	see § 12.1.4
LANGUAGE		see § 12.1.5
TUTOR	(chess only)	see § 12.1.6

To select an item, display it and press „E". (Instead, ESC returns to the Main Menu § 1.5)

12.1.1 Sounds

To switch the sound signals off or on:

(1)   Select SOUNDS from the Options sub-menu (§ 12.1).
(2)   Choose an Option between 0 (quiet) and 3 (loud) with ▲ and ▼ confirm with "E"
(3)   Press ESC twice to return to the game.

With the sound "off" (**0**), the computer displays **ERROR** in the bottom line instead of giving its "error buzz". Press any square on the board to clear this message.

12.1.2 Playing styles in chess

To set the computer's Chess style. Detailed information on the various styles can be found in chapter 4.2.13.

(1) Select STYLE from the Options sub-menu (§ 12.1).
(2) Use ▲ or ▼ to view the 5 styles: Normal, Active, Aggressive, Very Passive, Passive.
(3) Press „E" when the desired style is displayed.
(4) Press ESC twice to resume play.

12.1.3 LCD- contrast

To alter the contrast:
(1)   Select CONT. from the Options sub-menu (§ 12.1)
(2)   Use ▲ or ▼, to inspect the 10 contrast settings.
(3)   Press „E" when the desired style is displayed.
(4)   Press ESC twice to resume play.

12.1.4   *"Referee" mode*

In "referee" mode, the computer allows you to play for both sides. (For example you can play against a friend – the computer will merely act as a "referee", checking that the moves are legal and announcing the result etc.) To switch this mode on or off:

(1)   Select REF. from the Options sub-menu (§ 12.1).
(2)   Press „E" to switch between **0** and **1**.
(3)   Press ESC twice to resume play.

In "referee" mode there are no hints (§12.5) or "tutor" messages (§12.1.6).

12.1.5   *Language*

To alter the language of the messages:
(1)   Select LANGUAGE from the Options sub-menu (12.1)
(2)   Use ▲ or ▼, to view the languages:

Language	**Display shows**
English	English
German	Deutsch
French	Français
Italian	Italiano
Spanish	Español
Dutch	NL
Portugese	POR
Swedish	Svenska
Finnish	Suomi
Czech	Čeština
Slovak	Sloven
Polish	Polski
Greek	Ελληνικά

(3)   Press „E" when the desired language is shown.
Press ESC twice to return to the game.

12.1.6   *Chess tutor – hints and warnings*

In Chess, the "tutor" feature draws your attention to weak moves and warns you of the computer's threats. To switch this feature off or on:

(1)   Select TUTOR from the Options sub-menu (§ 12.1)
(2)   Use the arrow keys to select between 2, 1 and 0 and confirm with "E". (The arrow symbol means that the trainer function is switched on))
(3)   Press ESC twice to return to the game .

When the "tutor" is on level 1, the computer will display **SURE ?** if it thinks your last move is a mistake. You may then do any of the following:

Press SWAP for explanation, e.g.:
- o " You could checkmate me"
- o "I can take that piece."
- o "You could win material worth 3 pawns."

Press SWAP again, to see the move that the computer thinks you have missed.

Press ▼ and take your move (see § 12.3).

Press ESC to let your move stand.

If the computer displays **CAREFUL!** (tutor level 2), its own last move contains a threat. You may then press SWAP for explanation, e.g.

"I am threatening checkmate."

A second press on SWAP displays the threatened move. When ready, press ESC and continue playing.

12.2   Levels of playing strengths (Games other than chess)

In Checkers, the levels are numbered 1-16. In other games (apart from Chess), they are 1-10. Level 1 is fastest and weakest. To inspect and alter the level:

(1)   Select LEVEL from the Main Menu (§1.5), so that the level number "blinks".

(2)   Keep pressing ▲ or ▼ until the desired level number is shown.

(3)   Press „E" and resume play.

12.3   Retracting your play

If you have selected a "from" square but then change your mind, re-press the square or press ESC, and start again.

After carrying out your move and the computer's reply, you may want to retract these moves and play differently. To retract a move, press ▼. In some cases you will simply need to move the piece back, pressing on the "to" and "from" squares. In other cases, captured pieces will also need to be replaced, or Reversi pieces "flipped", etc. In every case, *press the square that is shown "blinking" on the LCD board and in the bottom line,* as you add, remove or change the piece on that square. Make sure that the position on the playing board corresponds to that on the LCD board. You can then play a new move (or press SWAP to make the computer do so.)

In Chess, by repeating the operation you can take back up to 8 moves by both sides, and the retracted moves may be replayed by means of the ▲ button. In other games, only the last pair of moves can be taken back.

12.4   Changing sides – the "SWAP" key

During your turn, you can swap sides at any time in a game by using the **SWAP** key. If **SWAP** is pressed after each move, the computer plays against itself. Pressing **SWAP** while the computer is preparing to move will interrupt the calculation and force it to make its move immediately. It will execute the best move calculated up to that point, which will usually not be the best move in absolute terms.

12.5   Hints – suggestions for moves by the computer

To ask the computer to suggest a move for you, select HINT from the main menu (§ 1.5). The hint is displayed by a "scrolling" message. To reject the hint, press ESC. To accept it, press „E" and the computer directs you to carry out the move.

12.6   The "Help" Feature

In most situations if you press the HELP button, a "scrolling" message explains what you can do next. To break off the message, press ESC.

12.7   Reverse board (◎)

You may want Black to play "up the board" in Chess (etc.), or "down the board" in Checkers. To switch the board round, select INVERT from the Main Menu (§ 1.5), then press ESC to continue play.
The symbol ◎ shows that the two sides are playing in the reverse direction from normal. Remember that the co-ordinate markings on the squares must now be disregarded, e.g. the square marked "C3" is being treated as f6.) .

12.8   Setting up a position

You can set up a special position on the board, e.g. a Chess problem from a magazine. To do this, begin by selecting SET UP from the Main Menu (§ 1.5). The bottom line then contains:

- The colour symbol □ or ■.
- The symbol #, "blinking", which shows that the computer is in "set-up mode".
- The symbol of a piece type (except in Nim).
- The co-ordinates of a square where a piece can be inserted or removed.

(In Four-in-a-Row, there is only the letter denoting a column. In Nim there is the letter for a column, followed by the number of pieces that the column contains.)

While the computer is in "set-up mode", you can do any of the following:
- To clear a piece from a square: Press the square, then press ESC.
(Not possible in Northcote's Game. In Four-in-a-Row, press the column, then ESC to remove the top piece. In Nim, to clear an entire column, press the column then ESC. To alter the size of a pile, press the column, then the square where you want the top piece to be.)
- To clear the entire board: Keep pressing ▲ or ▼ until the bottom line shows **Clear ?**. Then press „E". (Not possible in Northcote's Game.)
- To select a type of piece for insertion: Keep pressing ▲ or ▼ until the desired piece appears in the bottom line. (Chess and Checkers only.)
- To alter the colour (□ / ■): Press SWAP.
- To insert a piece of the current colour (and type): Press the desired square, then press „E".
(In Four-in-a-Row, press the column, then press „E" to add a piece "on top of" any that are there already. In Nim, press the column, then the top square for the pile. In Northcote's Game, simply press the desired square – the piece moves there from its previous square in the column.)
When a king is inserted in Chess, the king of the same colour is automatically removed from its previous square.

When the position is complete, make sure that the current colour is the same as the side that will make the next move. Then:

- To exit from "set-up" mode: Keep pressing ▲ or ▼ until the bottom line shows **Ready ?**. Then press „E". You can now play from the new position – make a move or press SWAP to instruct the computer to do so.

If play is impossible from the position you have constructed, the display shows **???** and the computer remains in "set-up" mode. A press on HELP may give further explanation – for instance in Chess, a king may be missing, or the player whose turn it is to move may be giving check. You can modify the position to make it legal. If instead you want to abandon it, keep pressing ▲ or ▼ until the bottom line shows **Cancel ?**. Then press „E" to return to the Main Menu (§ 1.5).

Note: In Chess you cannot castle with a piece inserted in "set-up" mode. To construct a position where castling is possible, you can begin from the "new game" position and leave the kings and rooks alone, while other pieces are rearranged individually.

12.9   Interrupting / saving a game

To continue a game at a later time, simply use the **ON/OFF** switch to turn the unit off. Note that the **ON/OFF** switch is active only when it's your turn to play. If you continue the game later, but find that some of the pieces are no longer in their previous positions on the board, they may be re-positioned by following the position indication on the LCD display.

13   Troubleshooting

Your computer has been manufactured and thoroughly checked with great care before delivery. It is therefore unlikely to contain any technical fault. Experience shows that most apparent "faults" result from wrong user operation, incorrect data input when preparing a move, or simply from pressing the wrong key. This may cause the computer - even at a later time - to react in an "unexpected" manner.

Again, before "blaming" a "malfunction" on the computer, thoroughly check that all operational steps have been properly followed and that all inputs are correct. The most common cause of operational problems is the incorrect input of a move. Ensure your move was "E"ed in compliance with the rules. Below you will find some hints and tips which may help you if such a problem occurs. Here, the most common causes of operational problems are described.

13.1   The LCD display shows no information

No information shows on the display, and the unit does not react to any key or move input; the following factors may be responsible:

1.   Ensure that you are using the correct batteries (Type AAA; do not use rechargeable batteries). Are the batteries inserted correctly? Ensure correct polarity (+/- poles) and that the batteries are firmly seated in the compartment. If the batteries have been used for a certain length of time, they may be exhausted. We recommend inserting a fresh set of batteries in that case.
2.   Even with fresh batteries, it is possible for the computer's functional ability to be impaired as a result of a static charge. In this case, the unit must be reset by inserting a suitable thin object into the opening marked **RESET** at the back of the unit and then pressing the internal **RESET** switch. This should cause the computer to function normally again.

13.2   The computer will not make a move

The computer has been functioning without trouble, but now refuses to make a move. What could be the cause?
1.   If the hourglass is still rotating in the display, the computer is still calculating. Wait until the computer has made its move, or press **SWAP** to interrupt the calculation. In that case, the computer will immediately make the best possible move based on its calculations up to that point.
2.   If one of the colour symbols is permanently displayed, the computer assumes that you have not yet concluded or "E"ed your move. Ensure that the position of the pieces on the board is identical to those in the computer's internal memory. Single positions may be checked with the help of the LCD display. If all positions match, it means that it is your turn to make a move.

13.3 The computer does not accept your move

You want to „E" a move, but the computer refuses to accept; the most likely cause:

13.3.1 *In all game types*

Always ensure that any input for a move is properly executed by pressing the target or "to" square.

13.3.2 *In chess mode*

- If you want to „E" a castling for yourself or the computer, ensure that not only the "from" and "to" squares for the king, but also those for the rook are pressed. (see also chapter 4.2.6). If you have „E"ed the special "en passant" move for yourself or the computer, ensure that the captured pawn has been correctly removed from the board. Note: you must **not** forget to press down on the square of the captured pawn; otherwise the computer cannot register the pawn as captured (see chapter 4.2.6).
- When performing a pawn promotion on the last row, ensure that you press down on the promotion square with the new piece in order to complete the promotion correctly (see chapter 4.2.6).
- If the symbol "+" is shown in the display, the computer has issued a check warning. In this case, you **must** counter the check threat with your next move.
- If no check threat is issued, ascertain whether you have left your king vulnerable to a check threat. The king must only be moved to squares where it is not threatened by any other of the opponent´s pieces. On the other hand, you must not move any piece protecting the king from a possible threat.
- If the symbol # flashes in the LCD display, the computer is in move-"E"ing mode. It may happen that you forget to exit this mode before you continue playing. In chapter 12.8, you will find a detailed description of how to exit this mode.
- If the symbol # stays steady in the display, the computer is in the data bank mode for world-championship games. You can exit this replay mode by pressing START.

13.3.3 *In checkers mode*

- When playing checkers, after a capturing move, ensure that the captured piece is not only physically removed from the board, but also "erased" from the computer's internal memory; this is always achieved by pressing down on the square with the captured piece. Only then is the piece removed from the board.
- If your last move was the promotion of a piece to a queen, **do not forget** to press down on the promotion square with the promoted queen in order to conclude the promotion successfully.

13.4 Are you familiar with all the rules?

One of the most common causes of problems is non-compliance with the rules when making a move. Before you assume that the computer is malfunctioning, double-check that your move is 100% legal and in accordance with the rules. If in doubt, consult the appropriate chapter in the rule book of the game in question.

13.5   The computer makes "illegal" moves

If the computer makes what seem to you to be illegal moves (which is basically impossible, of course), one of the following could be the cause:

- Verify that the position of the pieces on the playing board corresponds to that in the computer's internal memory. This can be done by using the LCD display. If the positions are not identical, the cause of the problem is probably the result of a misinterpretation of the rules. A common cause of such misinterpretation is the use of special moves such as castling, en passant or pawn promotion in the eighth row.

- Press **SWAP** to force the computer to make its move. If the computer plays its move, the fault cannot be in the computer. Take back the computer's and your last move and try again to „E" a move and continue the game.

13.6   No sound

If no sound signals are heard, refer to chapter 12.1.1. to check how the sound can be activated.

13.7   The RESET switch

The proper functioning of this unit can be affected by electrostatic discharge, strong electromagnetic radiation or other electrical disturbances (such as computers or TV sets nearby). This is perfectly normal and no cause for concern. In such cases, the **RESET** switch located on the underside of the unit should be used to perform a complete reset, ie to return the unit to its original configuration. You should then be able to start a new game.

14 Solutions to Exercises

Exercise 1:
1.♕h2-c7 mate

Exercise 2:
1.♕a2-g8 mate

Exercise 3:
1.♔d4-e5 ♔h7-h8 2.♔e5-f6 ♔h8-h7 3.♕g5-g7 mate

Exercise 4:
1.♕c1-f4 ♔c8-d8 2.♕f4-f8 mate

Exercise 5:
1.♖a6-h6 mate

Exercise 6:
1.♖a2-e2 ♔d8-c8 2.♖e2-e8 mate

Exercise 7:
1.♔c5-b6 ♔c8-b8 2.♖d2-d8 mate

Exercise 8:
1.♔e5-f6 ♔g8-h8 (on ♔g8-f8, White mates at once with 2.♖a7-a8) 2.♔f6-g6 ♔h8-g8 3.♖a7-a8 mate

Exercise 9:
1.♗f8-g7+ ♔h8-g8 2.♗g2-d5 mate

Exercise 10:
1.♔f5-g6 ♔h8-g8 2.♗g2-d5+ ♔g8-h8 3.♗d6-e5 mate

Exercise 11:
1.♗h6-g7+ ♔h8-g8 2.♘e4-f6 mate

Exercise 12:
1.♘f7-h6+ ♔g8-h8 2.♗c5-d4 mate

Exercise 13:
1.♘f5-d6 mate

Exercise 14:
1.g2-g4 mate

Exercise 15:
1.♔e6-f7, and any Black pawn move is answered by 2.g6-g7+ ♔h8-h7 3.g7-g8♕+ ♔h7-h6 4.♕g8-g6 mate.

Exercise 16:
White mustn't fall for 1.♔c6-d6? ♔g6-f5, because then he would be in *Zugzwang*. The right way is 1.♔c6-d7!. Then only after 1. ... ♔g6-f5 or 1. ... ♔g6-f7, White plays 2.♔d7-d6 – and Black loses his pawn and the game.

Exercise 17:
1.♘e4-d6+ forks the king and the pawn on f7.

Exercise 18:
With 1. ... ♘a7-c6+ followed by 1. ... ♘c6-e7, the knight successfully crosses the whole board

Exercise 19:
1.♘e3-d5+, and if Black takes the knight, the white pawn queens at once. Otherwise of course White captures the black knight first.

Exercise 20:
After 1.♔d2-c1, Black is helpless against 2.♘b4-c2 mate!

Exercise 21:
After 1.♗g1-c5 White can pick off all the black pawns by 2.♗c5-d6, while Black can't get at the white ones.

Exercise 22:
1.♗a6-b7+

Exercise 23:
After 1. ... c7-c5+ followed by 2. ... c5-c4, the white bishop is trapped.

Exercise 24:
1.♔d5-c5+ ♔a8-a7 2.b5-b6 mate

Exercise 25:
1.♖b7-h7+ ♔h8-g8 2.♖a7-g7 mate

Exercise 26:
1.♖d2-d8+ ♖a8xd8 2.♖d1xd8 mate

Exercise 27:
After 1.♖a1xa6, Black can't take the rook on account of 2.♖e1-e8 mate.

Exercise 29:
1.♕b2-g7 mate, but not 1.♕b2-b8+ because Black could interpose with 1. ... ♕c5-f8!.

Exercise 31:
1.♕h4-c4+, and now if 1. ... ♔c8-d8, White mates immediately with 2.♕c4-g8. If instead the black king goes to b8 or b7, there follows 2.♕c4-c7+ ♔b8(b7)-a8 3.♕c7-c8 mate.

Exercise 33:
1.♗d8-f6 mate.

Exercise 35:
1.♕f1-f4 (cross-pin!), and if 1. ... ♗e5xb2, then 2.♕f4xc7+.

Exercise 37:
1.♖b3-b8+ ♗d6xb8 2.♖f1-f8 mate

Exercise 39:
1.♖e1-e8+ ♖d8xe8 (the only move) 2.♕d3xd5

Exercise 41:
1.♕h3-b3+ wins the bishop on b7.

Exercise 43:
1.♘d3-e5 exploits the pin on the d6-pawn – the rook on d7 is attacked, and a fork on f7 is threatened. On 1. ... d6xe5 2.♖d1xd7, Black loses the exchange.

Exercise 45:
1.♘g3-f5+ and 2.♕g2-g7 mate, but not 1.♘g3-h5+? because Black could defend with 1. ... ♕b5-g5.

Exercise 47:
1.♘e5xg6 (double check) ♔h8-g8 2.♘g6-e7+

Exercise 49:
1.♖h1-h8+ ♔g8xh8 2.♕d3-h7 mate.

Exercise 28:
1.♖d8-e8+ ♖b6-e6 (otherwise the rook on e2 is lost at once) 2.♖e8xe6+ ♔e5xe6 3.♖a8-e8+

Exercise 30:
After 1.♔h2-g3, there is no defence against 2.♕h4-f4 mate.

Exercise 32:
1.♕b3-b8+ ♕e5xb8 2.h7-h8♕ mate! (It wouldn't work the other way round, for after 1.h7-h8♕+ ♕e5xh8 2.♕b3-b8+ ♔f8-g7 White achieves nothing.)

Exercise 34:
1.♕e2-a6+ ♔a8-b8 2.♕a6xb7 mate

Exercise 36:
1.♖d3-d7+, and the pinned queen can't capture. The covering move ♔h7-g6 is also unavailable because of the pawn on h5. Black therefore loses his queen..

Exercise 38:
1.♕f5-c8+ ♗b7xc8 2.♖b1-b8 mate

Exercise 40:
After 1.f6-f7!, Black loses with either 1. ... ♘e5xf7 2.♖d2xd7 or 1. ... ♖d7xf7 2.♖d2-d8 mate. But he has no other way to stop the pawn.

Exercise 42:
1.♗g2-e4+ picks up the rook on b1!

Exercise 44:
1.♕c2-g6+ wins the knight on b6, as the pawn on f7 is pinned!

Exercise 46:
After 1.d5-d6, the queen is attacked and mate on h8 is threatened.

Exercise 48:
White can ignore the attack on his queen; with 1.♖e1xe7 ♘d4xb3 2.♖e7xh7 he delivers mate himself!

Exercise 50:
1.♗b7xc6+ ♔d5xc6 2.♘b3-d4+

Exercise 51:
1.♖c1xc7+, and on 1. ... ♔d7xc7 2.♖b3xb7 Black is mated; if the king moves elsewhere, the bishop on g7 is lost.

Exercise 53:
1.♖c1-c7 attacks the queen and threatens mate on a7, which would also occur after 1. ... ♘e6xc7.

Exercise 55:
1.♖g7xh7+ ♔h8xh7 2.♕g1-g7 mate

Exercise 57:
1.♕a1xa7+ ♔a8xa7 2.♖f1-a1 mate

Exercise 59:
1.♘h4-g6+ h7xg6 2.h5xg6 mate

Exercise 61:
1.♕e2-e4 threatens mate on h7 and simultaneously attacks the rook on a8.

Exercise 63:
1.♗c4xf7+ ♔e8xf7 2.♕d1xd8

Exercise 65:
1.♕d5-g8+ ♖f8xg8 2.♘g5-f7 mate

Exercise 67:
1.♘g5xe6, and if 1. ... f7xe6, then 2.♕d1-h5+ wins the bishop on c5.

Exercise 69:
1.♕d1-d2 (again the notorious cross-pin!)

Exercise 71:
1.g6xh7+ ♘f6xh5 2.♗d3-g6 mate

Exercise 73:
1. ... ♘f5-g3+ 2.h2xg3 ♕d5-h5 mate

Exercise 75:
1. ... ♗f5xc2 wins the queen, for 2.♖c1xc2 is met by ♘b4-d3 mate.

Exercise 77:
1.♕e4xe6+ f7xe6 2.♗d3-g6 mate

Exercise 52:
1.♕a3-f8+ ♔g8xf8 (or ♔g8-h7 2.♕f8xg7 mate) 2.♖a1-a8 mate

Exercise 54:
1.♘e4-f6+, and whatever Black does, White plays 2.♕h4xh7 mate.

Exercise 56:
1.♖a5-g5!, and whichever way Black captures the rook, a white pawn queens.

Exercise 58:
1.♗f4xc7+ ♔b8xc7 2.♕d2-d6 mate

Exercise 60:
1.♕d3xh7+ ♘f6xh7 2.♘f4-g6 mate

Exercise 62:
1.♘e4-f6 mate (double check; Black can't capture on e2 or move his king to d7 either!)

Exercise 64:
1.♘d4xe6, and whether Black re-captures with the queen or the pawn, his d5-pawn is pinned, so that 2.♖e1xe4 wins a piece.

Exercise 66:
1.♘d4-e6+ wins the queen.

Exercise 68:
1.♗c4-d6+, and whether or not Black takes the knight, he loses his queen! (1. ... ♗b4xd6 would unpin the knight on c3.)

Exercise 70:
1.♕d2-d8+ ♗e7xd8 2.♖e1-e8 mate

Exercise 72:
1.♕f3xd5+, and now 1. ... c6xd5 2.♗c4-b5 mate; or 1. ... ♗e7-d6 2.♕d5xd6 mate; or 1. ... ♔d7-e8 2.♕d5-f7+ ♔e8-d7 3. ♗c4-e6 mate

Exercise 74:
1.♗f4xc7 wins the queen, for if 1. ... ♕d8xc7, Black is mated by 2.♕e2xe7.

Exercise 76:
1.♕c3xf6+ g7xf6 2.♗b2xf6 mate

Exercise 78:
1.♖d1-d8+ ♗e7xd8 2.♖e1-e8 mate

Exercise 79:
1.♖e5-h5 g6xh5 (otherwise mate on h7) 2.♕h6-f6 mate

Exercise 81:
After 1.♖h7-g7, Black is powerless to prevent 2.♖h3-f3 mate (Karpov-Mecking, Hastings 1971/72).

Exercise 83:
1. ... ♗f4-c1 threatens mate on h2 and simultaneously attacks the queen! (A variation from Smejkal-Karpov, Leningrad 1973.)

Exercise 85:
1. ... ♖e3xg3+ 2.f2xg3 ♕f4xg3 mate, or 2.♔h3-h2 ♕f4xf2+ 3.♔h2-h1 ♖e3-e1 mate (Tarjan-Karpov, Skopje 1976).

Exercise 87:
1.♘f7-d8+ is the only correct dis-covered check, stopping the black king from taking refuge on g8. Black now resigned, for wherever he moves his king, White plays 2.♕f3-f8 mate. The only other possibility is 1. ... ♗d7-f5 2.♕f3xf5+ ♔f8-e7, as the escape square d7 is now free. However, White still has many ways of winning, e.g. 3.♕f5-e5+ ♔e7xd8 4.♖f1-f8+ ♔d8-d7 5.♕e5xg7+ ♔d7-c6 6.♖f8-f6+ winning the queen. (Karpov-Korchnoi, 8th match game, Baguio 1978.)

Exercise 89:
1.♖c1-h1+ ♖d4-h4 2.g2-g4 mate (Karpov-Larsen, Linares 1983).

Exercise 91:
Oddly enough, the solution is another queen sacrifice on c4: 1.♕d3xc4, and if 1. ... ♖c8xc4, then 2.♖f1-f8 mate (a variation from Karpov-Kasparov, 9th match game, Seville 1987).

Exercise 93:
1.♕d3-d8+ ♔g7-f8 2.♗d2-h6, and Black can only prevent mate with the pointless queen sacrifice ♕c6-c1+ (a variation from Karpov-Kasparov, 17th match game, Lyon 1990).

Exercise 80:
1.♘e5xd7+ ♘d4xe2 (nothing is altered by ♘d4-e6 either) 2.♘d7-f6 mate (double check!)

Exercise 82:
1.♕e6-g4+ ♔g3-f2 2.♘c3-d1 mate (a variation from the game Karpov-Cobo, Skopje 1972).

Exercise 84:
1. ... f3xg2+ 2.♔h1-h2 ♗f8-d6 mate (a variation from Ljubojević-Karpov, Manila 1976).

Exercise 86:
1.♖e8xg8+ ♔h8xg8 2.♖e1-e8 mate (a variation from Karpov-Dorfman, Moscow 1976).

Exercise 88:
White can capture the queen with 1.♕e5xa1, because 1. ... ♖e3-e1 isn't mate – White would parry the check with 2.♖f6-f1, delivering mate himself! (A variation from Karpov-Hübner, Bad Kissingen 1980.)

Exercise 90:
After 1.♕d3xc4 Black resigned, as he can't recapture on account of 2.♖a7xf7 mate (Karpov-Geller, Moscow 1983).

Exercise 92:
1. ... ♗d6-h2+ 2.♔g1xh2 ♕a1xf1 (a variation from Timman-Karpov, World Championship Candidates final 1990).

Exercise 94:
1.g2-g3 threatens mate by 2.♕h8-h4 or 2.f3-f4. Black can only delay the mate by one move, with a desperate sacrifice such as 1. ... ♕e6xe4 (a variation from Karpov - Van der Wiel, Haninge 1990).

Exercise 95:

1.♕e6-g8+ ♖a8xg8 2.♘h6-f7 mate (a variation from Karpov-Shirov, Biel 1992).

Exercise 96:

1.♖d8xf8+ ♔g8xf8 2.♖d1-d8 mate (a variation from Karpov-Timman, World Championship match game, Djakarta 1993).

Exercise 97:

1.♕h3xh7+ ♔h8xh7 2.♖g5-h5 mate (a variation from Karpov-Ljubojević, Buenos Aires 1994).

Exercise 98:

1. ... ♕e5-e7 wins the bishop on a7, as White must first break the pin on his queen. White therefore resigned (Kamsky-Karpov, World Champion-ship match game, Elista 1996).

Exercise 99:

1.♘f4-e6+ ♔c5-c4 2.♖b6-b4 mate (a variation from Karpov-J.Polgar, Linares 2001).

Exercise 100:

1. ... ♕a4-a3 attacks the rook and bishop; White can't defend both. He therefore resigned, as his material deficit becomes too great (Kasparov-Karpov, New York 2002).

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