Mephisto® polgar

Hegener + Glaser AG

Dear Chess Friend!

Congratulations on the purchase of your MEPHISTO Polgar chess- computer!!

We would like to welcome you to the growing club of owners of MEPHISTO chess-computers and hope that you will have many hours of entertainment with your new partner. Your MEPHISTO is a high-quality product, manufactured in Germany. It is simple to use and yet offers a large number of features, which make your MEPHISTO an ideal tournament and training partner for everyone interested in chess.

As you now have a lot of features at your disposal, we have written this instruction manual in a way to make it possible to learn how to use them in the shortest possible time. The manual is divided into sections containing the most important information for normal games at the beginning and has references to other sections later in the book with more details.

We recommend that you read the entire manual at least once so that you know what your MEPHISTO is capable of. After you have played with the computer a little you can then start to read about the special functions, which you will want to use in time.

We would like to wish you hours of fun and exciting chess with your MEPHISTO!

EXCHANGING THE MODULES:

The computer should be switched off (1) before you exchange or replace modules or introduce extension modules.
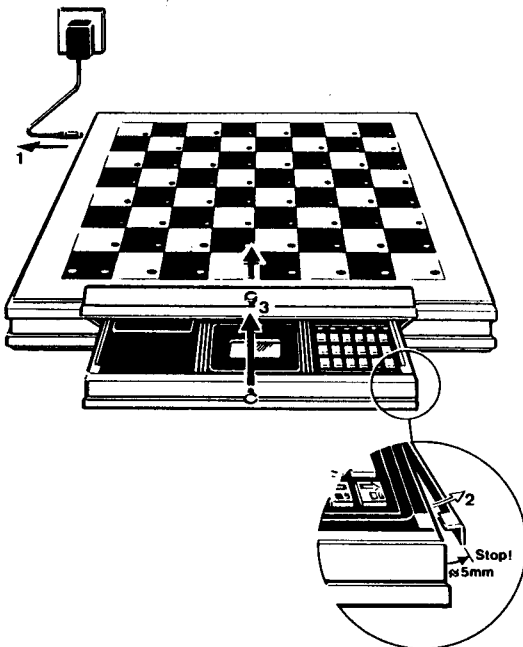
EXCLUSIVE or MÜNCHEN boards: First pull out the module drawer as far as possible. The modules are secured by the drawer frame.

Push the securing plastic latch on the top right hand side of the module drawer frame away (2) so that the drawer frame is released and can be tilted upwards, away from the modules (3).
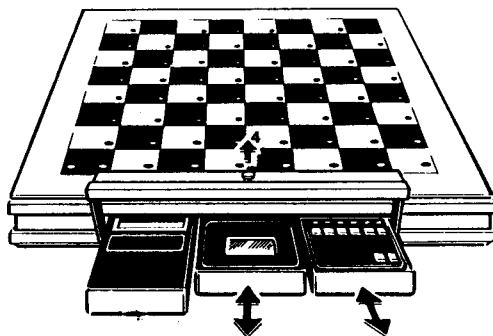
You can now pull out the modules (sharp tug!) and re-arrange or swap them. Note that when pushing modules back into the bays they have to be pushed in firmly until solidly in place.

PART 1: YOUR FIRST GAME AGAINST THE COMPUTER

1. GENERAL NOTES

Despite its large number of special features, your MEPHISTO is simple and logical to operate.

You can make all the necessary settings and exploit a vast number of features with the use of only 8 keys. To make things even easier there are 6 LED's which show which mode is presently activated, a 32-character 'dot-matrix' LCD display and 64 square LED's (one on each square).

It is the objective of this detailled manual to help you operate the computer and to allow you to exploit to the special functions it offers.

2. GETTING STARTED

First plug the jackplug of the power supply into the back of the computer. Then plug the power supply into the mains socket in the wall. Set up the chessmen on the board (White on the two rows, or ranks, closest to the keyboard, Black at the opposite end) and pull the switch (top lefthand side) ON towards you as shown in the diagram below.

```
MEPHISTO polgar
by  Ed  Schröder
```

Next take a look at the board. If any of the LED's (red) are flashing it means that the piece on that square is not properly centered. Move the piece to the centre of the square and the LED will switch off. Don't forget that a piece standing on top of the LED will inhibit you seeing it flashing! If MEPHISTO ever refuses to accept your first move, this is the first thing to check for.

After you switch MEPHISTO on, the computer is automatically set to play at the normal level of an **average** thinking time of 10 seconds per move.

MEPHISTO modular: This machine can also be powered by batteries. The battery compartment has room for 5 alkaline cells or accumulators (rechargeable cells). Accumulators are charged if the computer is powered via the power supply.

Important: If you use normal batteries instead of accumulators then always unplug the power supply from the wall socket or mains when the machine is not in use – otherwise your batteries could be damaged.

To insert batteries into your MEPHISTO modular first remove all three modules from the computer (pull out of the front) and then reach into the empty bays and tilt up the silver board to an angle of about 45 degrees. You will then see the battery compartment at the back of the machine. Rebuilding the computer is done in reverse order. Please don't place your old batteries in your household waste.

Select language

Using this function you can decide whether MEPHISTO displays comments in German or English. Press the FCT (Function mode) key once.

```
┌──────────────────────────────┐
│   --    SPRACHE    --         │
│   --    DEUTSCH    --         │
└──────────────────────────────┘
```

By pressing ENT you tell the computer that you which to alter the preset language. The display will change to show "LANGUAGE ENGLISH". If you press ENT again the display will change back to "DEUTSCH" etc. Leave by pressing CL.

3. MAKING MOVES

3.1 Starting a game

If you have just set up MEPHISTO as described in chapter 2, then MEPHISTO is ready to go and is waiting for your first move. The magnetic sensors under the board allow you to make moves by simply **lifting** a piece and then by **placing** it on the board.

If you push or slide a piece across the board MEPHISTO will either register a false move or refuse it as illegal. This is a small price to pay for the luxury of being able to avoid keying-in the co-ordinates of the two squares involved in a move as was necessary with 'pioneer days chess-computers'.

Back to making your first move. Let's assume you want to play E2E4. First lift up the white pawn on E2 (the LED of this square starts to flash) and then place it on E4 (LED there lights very briefly). Done that? As you can see, MEPHISTO didn't waste any time and immediately replied because MEPHISTO knows a large number of standard openings (stored in a part of its memory appropriately called the 'Opening Book'), to which it refers at the beginning of a game. The lower line of the LCD shows the move and the fact that it is a book move. The following may thus be shown in the display after your move:

```
┌──────────────────────────────┐
│   E2 - E4                     │
│   BOOK MOVE                   │
└──────────────────────────────┘
```

In the course of time openings in chess have been classified and given names such as Spanish, the French Defence etc. MEPHISTO has these lines stored in its memory and as soon as it recognizes a line will change the lower line of the LCD from BOOK MOVE to show its name. If you have played E2E4 the computer may show the following in its display:

```
┌──────────────────────────────┐
│   C7 - C5                     │
│   SICILIAN-DEFENCE            │
└──────────────────────────────┘
```

The opening book part of the computer will also recognize move transpositions (alterations in the move sequences which still lead to the same position). MEPHISTO may then leave its opening book for a short time and then return to this when it recognizes the transposition!

When MEPHISTO find a reply it write this in the LCD and flashes the LED's on the squares on the board. Pawn moves are only shown in the LCD by the co-ordinates, other pieces' moves are shown with the respective symbol before the co-ordinates.
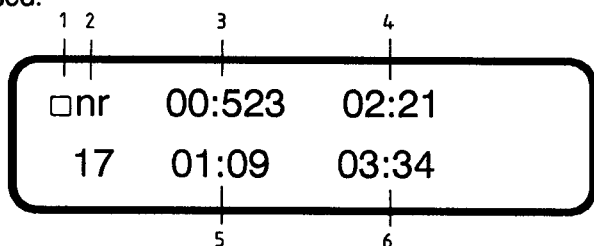
When making the moves for the computer don't forget to **lift** and **place** the piece – don't slide it across the board! As soon as you have made the move the computer will change the display back to the chess clock and it is your turn to move.

As long as the computer can refer to its opening book (i.e. the moves are all chess theory and stored in the computer) the moves will be shown immediately and no time will be registered on the computer's clock (after all, it did find an answer in a split second). If MEPHISTO leaves the opening book it will only go back to the clock mode after finding a move and showing this. In addition, a black dot is flashed in the top line of the LCD (left) to show that the computer is thinking.

3.2 Chess clock

When it is your turn to move the computer will automatically show the chess clock, whose turn it is and the move counter.

The chess clock is a so-called 'four time clock' which means that it shows the time for each player, the individual time for each move and the total time used.

```
 1 2        3          4
 | |        |          |
┌──────────────────────────────┐
│                              │
│  □nr    00:523    02:21      │
│                              │
│  17     01:09     03:34      │
│                              │
└──────────────────────────────┘
         |          |
         5          6
```

1) Side to play

2) Move counter

3) Total time for computer (hours/minutes)

4) Move time for computer (minutes/seconds)

5) Total time for player (hours/minutes)

6) Move time for player (minutes/hours)

3.3 Capturing pieces

To capture a piece first remove the piece you are capturing (LED of that square flashes) and replace it with your capturing piece (LED switches off). The same applies for the computer. First remove your piece where the LED is flashing (LED keeps flashing), then replace it with the capturing piece (LED switches off).

3.4 The en passant rule

Contrary to the beliefs of many, this move **is** actually legal and is **not** a computer error (although it may be played when you least expected/wanted it!). To play an en passant move first make the Pawn's move (past the captured piece), then remove the captured Pawn (the LED flashes to remind you to do this).

3.5 Castling

In accordance with the official rules of chess **the King must be moved first.** If you move the Rook first the computer must (and will) assume that this is a Rook's move. If you move correctly (King first) the computer will flash two LED's to show the correct second part of the castling move (Rook's move). The computer will only display the King's move when castling itself e.g. E1G1 or E8G8 etc.

3.6 Pawn promotion

If the computer's Pawn reaches the opposite side of the board then it will show the piece into which the pawn has been promoted in the display (lower line). Exchange the pawn (on the last rank) for this piece. If promoting yourself (Pawn on last rank), MEPHISTO will ask (in the display) what you want to promote to with "PROMOTE to ?".

```
┌──────────────────────────────┐
│                              │
│   D7 - D8                    │
│                              │
│   PROMOTE to  ?              │
│                              │
└──────────────────────────────┘
```

At the same time the LED's above the Knight, Bishop, Rook and Queen symbols on the keyboard will flash. Press the corresponding key and exchange the piece on the board.

3.7 Illegal moves

Making Queens leap around corners to escape capture is something MEPHISTO will take offence at! If you try to make a move which isn't possible/legal then MEPHISTO will show "ILLEGAL MOVE" and sound a single 'wrong again...' protest tone. Whatever your immediate reaction may be when this happens (disgust, insult etc.) **assume the computer is right** and look at the position again. Sometimes there may be a nasty hidden check which you didn't notice!

```
┌──────────────────────────────┐
│                              │
│   G1 - G3                    │
│                              │
│   ILLEGAL MOVE               │
│                              │
└──────────────────────────────┘
```

To carry on with the game simply put the piece back and play a legal move.

3.8 Check, checkmate

If the computer puts you in check then it will happily remind you of this by announcing it in the display (next to the move co-ordinates). If the move was the last i.e. fatal, then MEPHISTO will write "CHECK-MATE" instead.

```
E4 -E3  CHECK
```

3.9 Mate announcal

Causes some to be amazed at MEPHISTO's ability (and learn to respect it), whilst others may think about pulling the power supply from the wall! When MEPHISTO finds a line which inevitably leads to a checkmate it will announce this and show it in the display with e.g. "MATE in 4 MOVES".

```
C7 -C5
MATE  in  3
```

You may be happy to know that when the tables are turned MEPHISTO will dejectedly show "MATE in –4 MOVES" and will even let you go ahead and deliver the final blow (get that satisfaction!).

3.10 Stalemate, draw

If the computer can not play another move (stale-mate) it will show "STALEMATE" instead of a move. Draws are announced in the lower line of the display, also quoting the reason for the draw as follows:

- – not enough pieces left to win: "DRAW – MATERIAL"
- – position repeated 3 times "REPETITION –3"
- – 50 moves rule: "DRAW 50 MOVES"

3.11 Giving up

Try not to. When the computer gives up (or **wants to**) it will show "I RESIGN" in the lower line of the display (below the move being made).

```
H7 – H5
I RESIGN
```

You can then either accept or go ahead and press CL to continue the game to a (probably gory) end. MEPHISTO will only offer you this once, so if you insist on thrashing it, it will fight on to the bitter end (in digital defiance).

3.12 New game

To finish the present game or start again press the ENT and CL keys together. MEPHISTO sounds a double tone and shows "MEPHISTO polgar" again. Set the pieces up and you are ready to go.

This point marks the end of the 'essentials' section of the manual. The following part of the manual shows you all the finesse of your machine and let you know how to get it to really improve your game rather than just play against it.

4. USER MENU

MEPHISTO is operated via 8 keys; 6 function keys (black) and 2 input keys (red). The use of a 16x2 character 'dot matrix display' (the technical name for your display) and the use of a logical operation system make the limitation to only 8 keys possible.

Each of the 6 function keys activates a mode as follows:

- ● – TRN (Training mode)
- ● – INFO (Information mode)
- ● – MEM (Memory mode)
- ● – POS (Position mode)
- ● – LEV (Level mode)
- ● – FCT (Function mode)

If you press one of the keys, the LED above it lights (red) and the mode is switched on. Leave the mode by pressing CL.

5. TRAINING MODE

5.1. Looking at the opening book (width)

Switch the computer on and briefly press the TRN key (LED lights in red). MEPHISTO will then show you a part of its opening book.

```
        E2 E4
E7 E5   E7E6   C7C6
```

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The top line of the LCD (display) shows a move for the player whose turn it is e.g. "E2E4", and the lower line shows three answering moves e.g."E7E5 E7E6 C7C6". Although there may be more moves in MEPHISTO's memory only three replies are shown. If there are less replies in memory the computer will leave a space in the LCD. If you want to see another possible line of play, press the ENT key. MEPHISTO switches the display and now shows e.g. "D2D4" and "D7D5 G8F6 f7f5". Pressing ENT repeatedly (or holding the key down) calls up different lines finally returning to E2E4.

Note that some moves are written with capital letters, others with smallcap (e.g. C2C4 and g1f3).

```
┌─────────────────────────────────┐
│            g1 f3                 │
│  D7 D5                           │
└─────────────────────────────────┘
```

This is the way MEPHISTO distinguishes between **active** opening moves **(capitals)** and **passive** opening moves **(smallcap)**. If the computer is allowed to start the game it will play the active moves in its memory (passive ones could lead the computer into a bad position for a machine).

Press CL and the chess clock returns to the display as you leave the TRAIN mode. Using the TRAIN mode you can refer to the opening book even after having played a few moves in a game.

If you have played a lot of moves then pressing ENT may possibly not change the display, meaning that you have exhausted this part of the line in MEPHISTO's memory.

If there are no more moves in the opening book the display will show "NO BOOK MOVE AVAILABLE". Then press CL to return to the clocks.

```
┌─────────────────────────────────┐
│   NO  BOOK  MOVE                 │
│     AVAILABLE                    │
└─────────────────────────────────┘
```

5.2 Looking at the opening book (depth)

If you want to know to what 'depth' (number of moves) MEPHISTO has an opening stored, then proceed as follows;

(Switch MEPHISTO on)

Press TRN once (E2E4 is displayed in the top line)

(replies are shown in lower line)

Make the move shown (when the piece is put down the display jumps to E7E5 for Black)

Make the move shown (when the piece is put down the display jumps to G1F3 for White)

.. and so on until the line comes to an end (MEPHISTO announces this with "NO BOOK MOVE AVAILABLE" in the display.

To continue to play against the computer from this position simply press CL (which you can do before the end of a line is reached of course).

5.3 Opening lines

Combining the functions mentioned in the previous two sections allows you to really use the computer's abilities.

Switch MEPHISTO on and press TRN. Either play E2E4 or press ENT to look at alternatives, and play one of these. After the display has changed to show replies you can press ENT to look at other moves possible. Play one of these and press ENT again. By repeating this you can investigate different opening lines. If the display doesn't change after you have pressed ENT then only a continuation is stored. If you have reached the end of the line the computer shows "NO BOOK MOVE AVAILABLE". Press CL to continue with a game from this position (can be done before reaching the end of a line).

If you now leave the training mode with CL you can continue the game from the position reached with the side whose turn it is.

You can also leave the training mode before the end of the line by pressing CL too.

5.4 Repetion of opening lines

If you have read an opening from MEPHISTO's memory you can call it up again. To do this press the TRN key instead of CL as previously. The display shows:

```
┌─────────────────────────────────┐
│   BOOK  TRAINING                 │
│   ENT = yes                      │
└─────────────────────────────────┘
```

Press ENT to confirm and the display shows "BOOK-TRAINING START OF GAME". Set up the pieces as at the start of a game and press the ENT key again.

The computer will now show you the line in the display and on the board. Make the move and press ENT again to see the reply. Make this move and press ENT again etc. You can do this until you reach the end of the line.

```
┌─────────────────────────────┐
│                             │
│   BOOK – TRAINING           │
│                             │
│   END OF GAME               │
│                             │
└─────────────────────────────┘
```

If you want to practise again, press ENT again and set up the pieces in their starting positions. Continue as described above and you can train the line until you know it backwards!

Another possibility which MEPHISTO offers is:

5.4.1 Practising opening lines

Instead of keying in ENT from the starting position and looking at the line move for move, you can play the opening from memory (yours!). MEPHISTO will monitor your moves and see if you get them right.
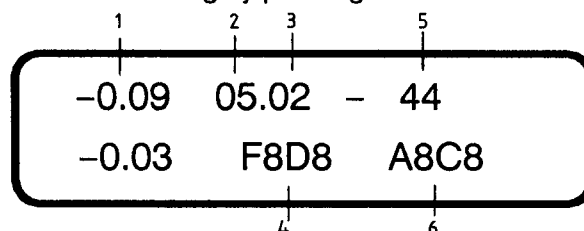
Correct moves are rewarded with a bright beep, wrong ones denoted with an error tone and the LED's of the piece just moved won't switch off. Try the move again until the computer confirms you got it right and continue. If you can't find the right move then the computer will show it to you if you press ENT.

Having reached the end of a line ("BOOK-TRAINING END OF GAME") press ENT to return to the start ("BOOK-TRAINING START OF GAME") to practise the line again.

Leave the mode with CL and continue from the position you have on the board if you like. To see whose turn it is, check the LED's on the module.

6. INFORMATION MODE

Press INFO (LED lights). The computer then shows information about the moves calculated for your interest and use.

Note that the Information mode can be switched on even when the computer is thinking – in contrast to the other modes.

6.1 Info 1:

If the computer has left its opening book and is in the

middle of finding a move, then you can take a look at the move counter and **main line** by pressing the INFO key once. Up to 4 plys (half moves, or a move for White OR for Black) are shown in the LCD (look at the diagram below).

```
┌─────────────────────────────┐
│                             │
│  □nr    D8–D6    A4–A5      │
│                             │
│  14     B6–D5    E5–C6      │
│                             │
└─────────────────────────────┘
```

If you call up the main line when it is your turn to move then you can use the second move as a **move suggestion**.

Leave the mode by pressing CL (returns to the chess clock display).

6.2 Info 2:

If the computer is calculating a move, or has just done some work to find one, then you can take a look at the following by pressing INFO twice:

```
     1        2  3         5
     │        │  │         │
┌─────────────────────────────┐
│                             │
│  –0.09    05.02   –   44    │
│                             │
│  –0.03    F8D8    A8C8      │
│                             │
└─────────────────────────────┘
           │         │
           4         6
```

1) the **position evaluation** (measured in 'Pawn units') – a positive value means the computer is doing well, a negative value means its losing.

Where possible the computer will show the deviation from the main line; this is the position evaluation. The function and use of this display is described exactly in section 6.3

2) the **depth of analysis** reached in plys

3) the **number of the branch being calculated**

4) the **co-ordinates of the branch being calculated**

5) the **number of possible branches**

6) the **best move found so far**

You can leave the Information mode with CL again (returns to the chess clock display).

6.3 Chess Tutor:

The newly-developed chess tutor by MEPHISTO evaluates your moves.

As far as previous calculations allow, the computer will show you whether, and by how much, your move deviates from the machine's own calculations. This is shown under the position evaluation (Info 2) in Pawn units.
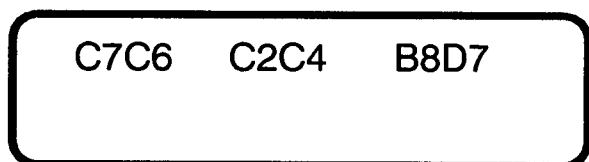
0.00 means that your move was what the computer expected.

Values between –0.30 and +0.30 stand for playable moves.

Values below –0.30 mean that the computer has found a positionally better move. A value of –0.90 or greater means that MEPHISTO sees a material loss is pending.

6.4 Info 3

Pressing the INFO key three times during a game gives you **access to the computer's main line calculations**.

```
┌─────────────────────────────────┐
│                                 │
│   C7C6    C2C4     B8D7          │
│                                 │
└─────────────────────────────────┘
```

The upper display line shows the line calculated to a depth of three plys. Whilst the computer is just starting to look for a move the display will change very quickly. Then, when it gets down to the details of sorting out what it has found, the display will not change nearly as quickly (start a game with h2h3 and hit INFO three times to see what we mean).

The lower line of the display is reserved for another feature. If, whilst the computer is thinking, you actually make one of the moves the machine is thinking about, the lower line of the LCD will show the next three moves of the line developing from the move played. If it sounds complicated just try it using h7h6. Note that MEPHISTO doesn't show the best move sequence, but one that it has already rejected. Taking the move back removes the second line from the LCD.
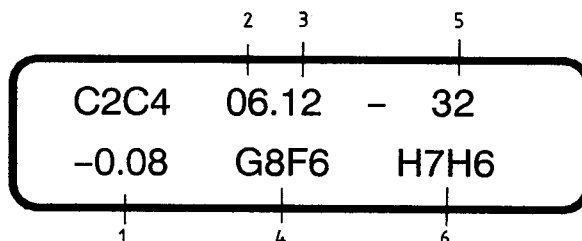
Really this function is only useful when you are playing on a higher level (see section 9) as otherwise the computer will interrupt you to play its move before you can look for too long.

Leave the mode with CL as before.

6.5 Info 4:

As you may already know, MEPHISTO (like a human)

uses your thinking time to consider its own moves too. Information about these 'thoughts' (the feature is called 'permanent brain') can only be looked at when it is **your move**. If the computer has already calculated then it will show the **expected opponent's move** in the top left hand LCD line and then the following information if you press INFO four times:

```
        2      3            5
        |      |            |
┌─────────────────────────────────┐
│                                 │
│   C2C4    06.12    –    32       │
│                                 │
│   –0.08   G8F6      H7H6         │
│                                 │
└─────────────────────────────────┘
        |          |         |
        1          4         6
```

1) the **position evaluation** (in Pawn units)

2) the **analysis depth** (in plys)

3) the **number of the present branch**

4) the **co-ordinates of the present branch**

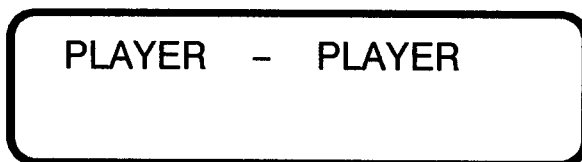5) the number of possible branches

6) the best move found so far

7. MEMORY MODE

Press the MEM key to activate the mode (LED lights red above the key). Now you will be able to record moves in the computer's memory (or recall them) without having to play a game against MEPHISTO.

The Memory mode can only be switched on when it is **your move**.

7.1 Storing move sequences, monitor function:

If you want to store a sequence of moves in MEPHISTO (from the starting position or any other position), then first press MEM once.

```
┌─────────────────────────────────┐
│                                 │
│   PLAYER    –    PLAYER          │
│                                 │
└─────────────────────────────────┘
```

The upper line of the LCD shows "PLAYER–PLAYER". Make the moves (the computer will not start thinking) for both sides until you get to the position you want. If you now press CL you can carry on by making the next move for the side whose turn it is (don't forget to check the LED's for whose turn it is next).

You could also play an entire game against a human on the board and MEPHISTO will act as a judge, checking the legality of the moves, in the same way as previously described.

7.2 Taking moves (or move sequences) back:

MEPHISTO's memory allows it to take back any number of moves during or after a game. When it is your turn, press MEM twice.

```
--  TAKE  BACK  --
E7 - E5
```

The top line of the LCD will then show "TAKE BACK". The lower line will show the move being taken back (also shown on the board). Take this move back on the board.

After you have replaced the piece the computer will sound a beep and the display will change to show the co-ordinates of the previous move. This move will also be shown on the board. Each time you take a move back the computer will switch to the previous move. In this way you can retract all the moves of a game ("START OF GAME" will then also be shown in the LCD).

If you take back a move in which a piece was captured, the LED of the square where the captured piece was standing will keep blinking. To remind you what piece was captured an LED will flash above the symbol for that piece on the keyboard. Replace the previously captured piece and the computer will show its last move. The MEM LED will light again when the captured piece is replaced.

To leave the Memory mode press CL. You can then continue the game against MEPHISTO from the position on the board.

7.3 Automatic Move takeback function:

Assume you have made a bad move, have noticed it immediately and want to take it back. First you have wait for the computer's move to be found (or press ENT), then make the move.

From here you have two possibilities:

1) you switch into the Memory mode (as described in 7.2) and take back the last two plys, OR

2) without activating the Memory mode, you simply play the moves in reverse, **on the board**. MEPHISTO's automatic takeback function recognizes what you are doing and registers each move with a single beep.

When taking back a lot of moves it is best to use the first method. The second method is quickest when you only have a few moves.

Another tip: this system also works in the training mode and therefore makes reading openings much easier, as the alternative moves can simply be made and then taken back.

7.4 Playing a move (sequence) for- wards.

The built-in memory which MEPHISTO has allows it to not only take back moves which have been played but also to play these forwards again. After taking the move back press the MEM key again instead of the CL key to leave the mode.

```
- MOVE FORWARD -
F1 - C4
```

The lower line of the LCD shows the last move taken back (it is also indicated on the board). Make the move on the board.

The moment the piece is put down again the computer will sound a beep tone and the next move is shown both in the LCD and on the board.

This can be repeated until all the moves in memory have been played through. At the end the LCD shows "END OF GAME".

Leave the mode with CL and continue the game from the position on the board.

7.5 Replaying a game

MEPHISTO's memory allows you to jump back to the start of a game after or during a game. When it is your turn press MEM four times.

```
REPLAY  GAME  ?
ENT  =  yes
```

Confirm that you want to go back to the start by pressing the ENT key and set up the pieces in their starting positions. As soon as this is done the display will change to show "FORWARDS" in the upper line. The lower line shows the first move (also shown on the board). Make the move.

After the piece has been placed on the board again the computer will beep and the co-ordinates of the next move will be shown in the display. The move will also be shown on the board again.

Make this move too and again the computer will beep and show the following move. You can continue this until all of the moves in MEPHISTO's memory have been made (when the LCD lower line will show "GAME END".

Leave the mode with CL at any time to take up the game from the position on the board.

7.6 Position memory

If you want to interrupt a game for some reason but don't want to lose the last position in the game, press MEM (Memory mode) once **before switching off**. Then switch the ON/OFF key to the OFF position.

The last position reached is then stored in the computer and will be restored when you switch back on again. If you have had to remove the pieces for some reason then refer to section 8.1 to check the position of the pieces.

8. POSITION MODE

In the Position mode (press POS key) you can check and change stored positions e.g. for chess problems. The Position mode can only be activated when it is your move.

8.1 Checking positions

If you need to check the position on the board, e.g. for a chess problem after you have entered it into the computer's memory, pieces knocked over etc, then the first thing you have to do is switch to the Position mode by pressing POS (LED over the key lights).

The LCD's top line shows "POSITION MODE" whilst the lower line shows the symbol for the white Rooks. The LED over the Rook key also lights, and the LED's on the board where White's Rooks are standing start flashing.

The symbols for the pieces shown under the keys tell you which key activates a check of which type of piece. Pressing the key twice switches to show the pieces for Black. Pressing the key once more jumps back to White etc.

When you want to leave the Position mode (CL) then you should note the following important point: when you press CL the computer leaves the position so that it is the turn of the side whose pieces were last being shown i.e. if you checked **Black's** Rooks last, then pressing CL will mean that you can resume the game **with Black** and vice versa for White.

8.2 Changing positions

To change a position press POS to activate the Position mode ("POSITION" is shown in the LCD top line, the symbol for White's Rooks in the lower line, the LED above the Rook key lights and the LED's on the board where White's Rooks are standing start flashing).

To tell the computer that you want to **alter** the position and not just check it, press the ENT key. The Rook key LED starts to **flash** to show that an alteration can now be made. You can now remove the white Rooks or re-position them as you like. You can also introduce new Rooks as long as the position permits this.

Press the key for the piece concerned (once for White, twice for Black) and carry out the change. The last piece altered should be of the side whose turn it is to resume the game (White for White to move). Press CL to leave the mode.

Note that MEPHISTO checks the position on the board when you press CL. If the position is **illegal** e.g. 2 Kings, 9 Pawns, King in check and therefore captured with the next move, then it will sound a warning tone and protest via the LCD too. If possible it will light the LED's of the illegal piece on the board.

```
┌─────────────────────────────────┐
│  POSITION MODE                  │
│                                 │
│  ILLEGAL                        │
└─────────────────────────────────┘
```

Press CL and then ENT, then correct the position. Having done this press CL again to resume the game with the side whose LED is lit on the keyboard.

8.3 Setting up a position

If you want to set up a new position on the board (for analysis or problem-solving) then first **remove all the pieces from the board.**

Next press POS and then ENT as when altering a position. The upper LCD line shows "POSITION", the lower line shows the symbol for White's Rook. The LED above the Rook key flashes.

Place the white Rooks you need on the board (you can change your mind and remove them or put them somewhere else if you haven't changed anything on the keyboard). For other pieces, press the piece key (twice to change the colour) and place them on the board in the same way.

When you have placed all the pieces you need on the board, press CL to leave the mode. Remember the colour of the last piece placed decides which side's turn it is.

Make sure that the position you have set up is legal (max. 8 Pawns each, max. 2 Kings , Kings not in check etc). MEPHISTO will check the position and beep and show "CHECK POSITION" if it is illegal, besides showing you the incorrect piece if possible.

Press CL and then ENT before correcting the position and returning to the 'normal' mode with CL.

You can either then continue with a game from the new position or use this to solve a 'mate–in–...' problem (see section 9. Level mode).

9. LEVEL MODE

Press the LEV key to enter this mode which allows you to alter the style of MEPHISTO's play, its playing strength and its thinking time.

You can only activate this mode when it is your turn to move.

9.1 General information

When you switch on, or reset the computer (ENT + CL together), the normal playing level with an **average** of 10 seconds per move is automatically set.

If you would like to play with another level rather than that which is automatically set, MEPHISTO offers you the following alternative levels:

– normal playing level

– tournament level

– Blitz chess level

– search depth limitation level

– problem solving levels

– ELO points tournament

– ELO action chess

– analysis level

Apart from the analysis level, all of these can be **freely set** so that there are virtually unlimited playing levels.

Pressing LEV shows you the level presently set.

Note that when you leave the Level mode with CL the computer automatically accepts the last level set and shown in the LCD.

9.2 Normal playing level

Whilst set to this level MEPHISTO plays with an **average** thinking time per move. The computer may exceed or undercut this average time in certain cases but the average will be the time setting shown.

When switched on or reset (ENT and CL), the computer plays with an average of 10 seconds per move. This can be altered as follows:

Press the LEV key (Level mode, LED over key lights).

```
┌─────────────────────────────────┐
│  LEVEL MODE                     │
│                                 │
│  NORMAL TIME    0.10            │
└─────────────────────────────────┘
```

To tell MEPHISTO you want to change the level press ENT. The first digit of the time set is now flashing and is ready to be changed. Press the far left key TRN once to change the digit to 1, twice to change it to 2 etc.(after 9 it returns to 0). Press the INFO key to change the second digit in the display and press the MEM key to change the third digit. Trying this out is simpler than explaining it.

Every setting from 0 seconds to 9 minutes and 59 seconds is possible. When you have finished, press CL and MEPHISTO will accept the setting and stop flashing the LCD.

If you have made a mistake, press ENT and correct the error, otherwise press CL to leave the mode.

9.3 Tournament game level

In the tournament game level you can set a **number of moves** to be played within a **particular time limit** e.g. 40 moves in 2 hours).

If you want to play against MEPHISTO with the normal tournament timing of 40 moves in 2 hours, then first press LEV, and then LEV again. The setting is shown in the LCD.

```
┌─────────────────────────────┐
│  LEVEL   MODE               │
│  TOUR    40    in    2:00   │
└─────────────────────────────┘
```

All you have to do now is leave the mode with CL and MEPHISTO has accepted (it always takes the last setting shown in the LCD before leaving the mode with CL).

If you want to (re)set the number of moves or the time control then proceed as follows:

Press ENT to indicate a desired change (LCD flashes on number of moves 'digit 1'). Alter this digit with TRN, and the next with INFO (settings between 01 and 99 possible). Confirm your setting with CL (LCD flashes 'digit 1' of the time control, which is the next alteration to be made).

Press TRN, INFO and MEM to alter the time control (settings between 0:01 and 9:59 are allowed) and confirm your choice with CL.

At this point you can go back to alter a setting with ENT, else leave the mode with another CL. During the game the setting is shown on the far left of the LCD, next to the clocks.

When set to the Tournament, ELO Tournament, ELO action chess and Blitz chess levels, the computer will show the chess clock as the total time of the player and the computer in a countdown mode (i.e. the clock counts down to zero).

In the Tournament level the clock also shows the number of the move with which the next time check is due.

```
┌─────────────────────────────┐
│  □40    00:53    02:21      │
│  17     01:09    03:34      │
└─────────────────────────────┘
```

You can see from the example above that 17 moves have already been played. The next time check is at the 40th move. Another 23 move must therefore be made before the time check. The player has a total time of 1 hour and 9 minutes to make these moves in.

If the time is exceeded by either the player or the computer (means the loss of the game) then this is shown in the LCD.

9.4 Blitz chess level

In this level **you can set the total time for a game**. You can even set different times for the player and the computer so that MEPHISTO has a handicap (less time than yourself).

If you want to play a Blitz chess game against MEPHISTO then first press the LEV key three times.

```
┌─────────────────────────────┐
│  LEVEL   MODE               │
│  BLITZ   0:05    0:05       │
└─────────────────────────────┘
```

If you are happy with this setting (5 minutes per side) then merely press CL and leave the mode. If you want to change the setting for either side (or both) then first press ENT, confirming that you want to make a change, and the LCD will blink the first number of the **player's** setting (on the left).

You can alter this digit (hours) with the TRN key. The next digit can be altered with the INFO key (minutes) and the last digit (seconds) can be changed with the MEM key. Each time you press the key, the digit is increased. When the maximum setting is exceeded, the digit starts again from 0 (try this out to see how simple it is). Having set the players time, press CL and the computer will switch to allow you to set the time for MEPHISTO in the same way as before. To confirm both settings press CL, alternatively press ENT to go back and reset both times. Leave the mode with CL again.

9.5 Analysis depth level

In this level the **computer's maximum allowed analysis depth in plys is set**. By limiting this, you limit MEPHISTO's chances of peering into a position's possiblities too far, which means you limit the computer's playing strength (without having to give it a direct handicap such as a piece less). Press the LEV key four times.

```
LEVEL MODE
PLY - DEPTH     03
```

If you want to limit MEPHISTO to a move search depth of 3 plys, press CL to confirm before carrying on.

To alter the search depth, press ENT first. The computer will flash the first digit, showing it is ready to alter this. Use the TRN key to alter this (runs through 0 to 9 and back to 0 again) and the INFO key to alter the second digit. The settings can be set from 01 to 99 in the display, however the computer's maximum search depth is 30 (!) plys. Every setting over 30 is therefore accepted as 30 as this is the maximum.

Press CL to continue, check the times and if alright, press CL again, alternatively ENT to go back and reset the times.

9.6 Problem-solving levels

These levels are exclusively for **solving chess problems**. MEPHISTO therefore doesn't search for moves in the same way as during a normal game, but concentrates on finding the quickest checkmate combination. If you want MEPHISTO to solve a chess problem you have already set up first press the LEV key five times.

```
LEVEL MODE
MATE   in   3 MOVES
```

If the problem you are going to solve is a mate-in-3-moves problem then all you have to do is press CL to confirm your choice and to leave the mode simultaneously.

If your problem has another number of moves then press ENT to tell MEPHISTO you want to change the setting shown and the LCD will flash the present setting (in our case the 3).

Next press the TRN key to increase the setting by 1 until you reach the number you need (after 8, the computer goes back to 1) and then press CL. The number stops flashing and if it is correct you can press CL again, alternatively press ENT to go back and alter.

To start the search for the solution press the ENT key (but make sure that it is White's turn to play first by checking which of the LED's above the ENT and CL keys is lit).

9.7 ELO tournament level

With this level you can set the **approximate ELO strength** that you want MEPHISTO to play against you with at the tournament level of 40 moves in 2 hours. As in a game with a human opponent, the MEPHISTO now won't show you it's intended moves, it's evaluation of the position etc.

Press the LEV key six times.

```
LEVEL  MODE
ELO - TOUR    2000
```

If you want to play against MEPHISTO set at 2000 ELO points then press CL to confirm and you can start.

If you want to change the setting, press ENT to announce an alteration (the first digit starts blinking), then use the TRN, INFO, MEM and POS keys (each corresponds to a digit in the LCD) to alter the setting. The possible settings in the LCD range from 0000 to 9999, however MEPHISTO is programmed to accept an approximate maximum of 2000 ELO (value setting over 2000 are accepted as 2000). Settings under ELO 1200 cause MEPHISTO to play at approximately 1200.

Press CL to stop the flashing and check your setting. If alright, press CL else press ENT to go back and reset. The chess clock is the same as for the tournament level i.e. is shown in the countdown mode.

9.8 ELO active chess (speed chess) level

This is the same as the previous section 4.5.7 except that the computer now plays at the active (action, rapid or quick) chess level timing of 30 minutes for the whole game. As before, it is not possible to obtain the position evaluation, intended moves etc.

To set this level, press the LEV key seven times.

```
LEVEL  MODE
ELO - ACTIVE     2000
```

If you are happy with a strength of ELO 2000 for the game then press CL. If you want to change the level then do this as described in the previous section. First press ENT. Then use the TRN, INFO, MEM and POS keys to alter the setting. Press CL to finish the setting, check the setting (ENT allows you to go back and correct) and CL again to leave the Level mode.

The chess clock shown is set to the countdown mode as previously described.

9.9 Analysis level

This level was designed for those who want to play correspondence chess. The computer will then think out moves until you press the ENT key (it then plays the move on the board) or until its memory space is full (can take several days!).

In addition you can tell MEPHISTO which moves it should take account of and which it should ignore whilst analysing.

Assume you have reached a position in your correspondence game from which you believe there are only three sensible continuations. You now wish to ask the computer which is the best. To do this carry on as follows:

Store the position in memory as described in section 8.3 or via the memory mode (section 7.1).

Press the LEV key eight times.

```
LEVEL  MODE
ANALYSE
```

Next press CL to confirm your choice and ENT to start the analysis.

Now you have to tell MEPHISTO which moves it should look at. Do this by making the move on the board and taking it back again whilst the computer is thinking. As soon as the machine has recognized a move the LCD will change.

MEPHISTO will then only analyse from this move and will ignore all others. This has the great advantage of eliminating millions of positions which need not be looked at, greatly saving time. If the computer only analyses 40 or 50 moves from a few selected starting moves instead of all the possibilities, then it will be able to peer into the position more deeply i.e. further ahead.

If you want the machine to look at all the possibilities then don't make any starting move on the board.

If you want to look at the result after a few hours or days then you can look at the main line in the information mode as well as the analysis depth and position evaluation for the best of the moves made on the board.

If you let the computer continue to think it will give you information about other moves you selected.

Make one of these moves on the board and the display will change to Info 3 (see section 6.4). The upper line will show the present line being calculated, whilst the lower line shows the first three plys of the line following the move made on the board.

Having obtained all the information you wanted about the moves you made you can terminate the analysis by pressing ENT.

10. FUNCTIONS MODE

You can activate this mode (when it is your turn) to obtain access to a number of MEPHISTO's special functions. Press the FCT key (LED above it lights).

The following special functions are now available to you as below:

– select language

– tournament openings

– turn the board – turn beep tone off

– switch random move generator on

– set selective analysis depth

– set learn factor

– ELO calculation

10.1 Select language

Using this function you can decide whether MEPHISTO displays comments in German or English. Press the FCT (Function mode) key once.

```
SPRACHE

DEUTSCH
```

By pressing ENT you tell the computer that you which to alter the preset language. The display will change to show "LANGUAGE ENGLISH". If you press ENT again the display will change back to "DEUTSCH" etc.

If you leave the function mode with CL whilst "LANGUAGE ENGLISH" is displayed the computer will switch to show reports in english and vice versa for German.

10.2 Tournament openings

This function limits the openings used by MEPHISTO to those which it can play best.If you want to use this function then switch it on as follows:

Press the FCT key twice (Function mode).

```
TOURNAMENT BOOK

OFF
```

By pressing ENT you tell the computer that you want to alter the setting. The display is changed to "TOURNAMENT BOOK" and "ON". Pressing the ENT key switches it off again etc.

Leave the mode with CL and the computer will accept the last setting shown in the LCD.

10.3 Turn the board function

There may well come a time when you would like to change sides and play with Black against MEPHISTO. If you would prefer to play with Black **but with the black pieces at the bottom (keyboard) end of the computer** (i.e. infront of you) then you have to switch the turn the board function ON.

Note that the co-ordinates marked on the board are of course no longer valid.

To activate the function press the FCT key three times.

```
CHANGE BOARD

OFF
```

By pressing ENT you tell the computer that you wish to alter the setting. Each time you press ENT the setting will toggle from on to off etc.

When you leave the mode with CL the last setting shown will be accepted by the computer.

10.4 Beep tone

With this function you can switch off the acustic signal that you get when making moves and when errors are made. To switch off the sound continue as follows:

Press the FCT key four times.

```
SOUND FUNCTION

ON
```

By pressing ENT you tell the computer that you wish to alter the setting. Each time you press ENT the setting will toggle from on to off etc.

When you leave the mode with CL the last setting shown will be accepted by the computer.

10.5 Random move generator

Normally MEPHISTO plays the best move it can find (that **is** normal, isn't it?). By switching this function ON you cause MEPHISTO to select a random move of the best ones it can find which are similarly evaluated.

To switch the function on press the FCT key five times.

```
RANDOMIZING

OFF
```

By pressing ENT you tell the computer that you wish to alter the setting. Each time you press ENT the setting will toggle from on to off etc.

When you leave the mode with CL the last setting shown will be accepted by the computer.

10.6 Selective analysis depth

MEPHISTO looks at all the possible moves up to a particular search depth and then carries on using a selective method. It does this because the number of possible moves soon becomes impossible to count, let alone analyse.The default setting is 3 plys.

If you want to alter the depth to which MEPHISTO searches by 'brute force' (looking at all the possibilities) you must first call up the function as follows:

Press the FCT key six times.

```
┌─────────────────────────────┐
│  SELECTIVE  SEARCH          │
│                             │
│  DEPTH :   3                │
└─────────────────────────────┘
```

Next press ENT (digit in the LCD for the selective depth setting flashes) and then use the TRN key to alter from 0 to 8.

Press CL (display stops flashing), and if the setting is correct CL again to leave the mode, else ENT to go back and correct. Settings between 0 and 8 are allowed.

The lower the value of the setting (start of selective search method) the less tactical moves the computer will overlook. However as it now has to examine a vast number of possible moves, it will play slower, but shouldn't overlook any nasty tricks you have laid in ambush for it. As there are settings from 0 to 8 you have 9 different playing styles available.

10.7 Learn factor

This is another possible method to reduce MEPHISTO's playing ability if you have the feeling it's far too strong for you. The higher the learn factor, the weaker the computer will play, i.e. at factor 8 (maximum) combined with the analysis depth limitation at a setting of 1, MEPHISTO is set to play at its weakest. You can set the learn factor by doing the following.

Press the FCT key six times.

```
┌─────────────────────────────┐
│  FUNCTION  MODE             │
│                             │
│  EASY – LEVEL  :  0         │
└─────────────────────────────┘
```

Next press ENT (digit in the LCD for the selective depth setting flashes) and then use the TRN key to alter from 0 to 8.

Press CL (display stops flashing), and if the setting is correct CL again to leave the mode, else ENT to go back and correct. Settings between 0 and 8 are allowed.

10.8 ELO calculation

It is exciting to be able to monitor your progress when training. As your MEPHISTO has the offical formula from the International Chess Federation (FIDE) stored in its memory, it can rate your last game against the computer in ELO (maximum 2400 ELO) and show this to you.

To find out your new ELO rating after a game first call up the special function by pressing the FCT key seven times.

```
┌─────────────────────────────┐
│  FUNCTION  MODE             │
│                             │
│  YOUR ELO  :  0000          │
└─────────────────────────────┘
```

Next you have to press ENT to tell MEPHISTO that you want to enter your last ELO rating (if this is the first time, then you can start with a rating of e.g. 1500). Then use the TRN, INFO, MEM and POS keys to alter the digits in the display for your ELO rating. Settings between 0000 and 9999 can be written in the display, but don't forget the maximum of ELO 2400.

Having typed in your rating, press CL and continue by typing in the rating of your opponent in the same way as before – maximum ELO 2400 and finish by pressing CL again.

```
┌─────────────────────────────┐
│  FUNCTION  MODE             │
│                             │
│  ELO PLAYER  :  0000        │
└─────────────────────────────┘
```

The first digit on the display is flashing to show that an alteration can be made. Use the TRN, INFO, MEM and POS keys to alter the digits in the display for your ELO rating. Settings between 0000 and 9999 can be written in the display, but don't forget the maximum of ELO 2400.

Having entered the ELO rating of your opponent, press CL.

```
┌─────────────────────────────┐
│                             │
│  FUNCTION   MODE            │
│                             │
│  RESULT  :  +               │
│                             │
└─────────────────────────────┘
```

The character for the result is now flashing, asking for the result of the game as follows:

+ means game won by first player

= means game drawn

– means game lost by first player

Having entered your result press CL and the display immediately jumps to show you "ELO (NEW) : " and then your new rating. Using CL you can leave the mode.

Your MEPHISTO is the first commercial chess-computer which has this feature!

11. THE KEYBOARD
11.1 The ENT key

The ENT key forces MEPHISTO to play the next move (if you think it is taking too long or if you want to see what the computer would play next). Please remember that the key also allows you to switch various special functions on and off and therefore has a multiple function.

11.2 The CL key

The CL key is also a multiple function key. When leaving a mode the key also confirms the last setting shown in the display.

Pressing CL whilst the computer is still in the opening book shows you a limited number of alternative moves.

11.3 New game

Pressing the ENT and CL keys together resets all MEPHISTO's settings (playing level, tone switched off etc), ready for a new game. This is the more elegant method of starting again, rather than pulling the plug or switching MEPHISTO off and back on again.

Hegener + Glaser