Creating diagrams for chess problems

Version v1.11.1

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Abstract

It have been more than ten years now, since we last published a documented version of the `diagram.sty`, which is mainly intended to be used for typesetting chess problems. Since 1994 I (Stefan H"oning) made a couple of enhancements to the sourcecode of the style, without publishing and putting this into the documentation. We also needed to upgrade to LaTeX 2_ε. The major change is the documentation language, which is english now.

The style itself tries to collect very detailed information about a chess problem by providing a lot of commands, which you may use to specify the necessary information. There are different reasons for this. One idea was to enable people to read LaTeX-diagrams into databases with information as detailed as possible. Otherwise it should be easy to change the layout of a diagram by applying a changed style - not by changing the source.
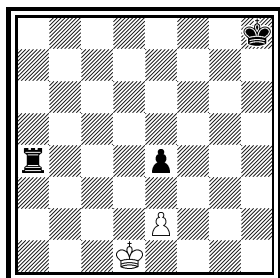
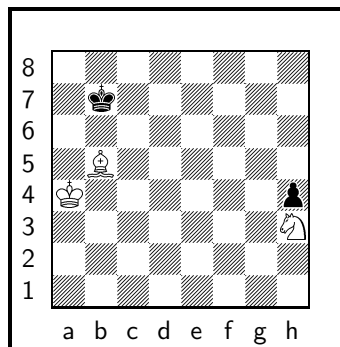# Contents

1 Creating diagrams

1.1 An introductory example

Let us first take a look at a simple example which should only show what you have to type into your LaTeX-code to get nice looking diagrams.

1
Thomas Brand
Problemkiste 1992
Elmar Bartel gew.

h#7   C- (2+3)

2
Thomas Brand
Problemkiste 1992

h#5   C- (3+2)

1) Thomas Brand:
1.Ta3 Kc2!, 2.Tf3 e×f3, 3.e3 f4, 4.e2 f5, 5.e1T f6, 6.Th1! (Te7?) f7, 7.Th7 f8D#

2) Thomas Brand:
1.Ka8 Sg1, 2.h3 Ka5, 3.h2 Kb6, 4.h×g1L+ Kc7, 5.La7 Lc6#

To use the package you have to make it available to LaTeX using `\usepackage{diagram}` inside the preamble of your document.

Then you may use the `diagram` environment to create the diagrams. For the above example I had to type the following:

```
 \begin{diagram}
  \author{Brand, Thomas}
  \source{Problemkiste} \year{1992}
  \dedic{Elmar Bartel gew.}
  \pieces[2+3]{wKd1, wBe2, sKh8, sBe4, sTa4}
  \stip{h\#7}
  \sol{1.Ta3 Kc2!, 2.Tf3 e\x f3, 3.e3 f4, 4.e2 f5, 5.e1T f6,
      6.Th1! (Te7?) f7, 7.Th7 f8D\#}
 \end{diagram}
%
 \hfill
%
 \begin{diagram}
  \setboolean{legend}{true}
  \author{Brand, Thomas}
  \source{Problemkiste} \year{1992}
  \pieces[3+2]{wKa4, wLb5, wSh3, sKb7, sBh4}
  \stip{h\#5}
  \sol{1.Ka8 Sg1, 2.h3 Ka5, 3.h2 Kb6, 4.h\x g1L+ Kc7, 5.La7 Lc6\#}
 \end{diagram}
```

`\putsol`

diagram

Any information which belongs to a problem should be put between `\begin{diagram}` and `\end{diagram}`. The above examples contains information for *authors, source, year of publication, stipulation, solution* and (in diagram 1) a *dedication*.

This information is shown around a chessboard except the solution, which is collected and put into the output using the `\putsol` command.

1.2 Elements of a diagram

This section describes the elements which may be used inside a `diagram` environment. For most of these elements there is no sense using them between `\begin{diagram}` and `\end{diagram}`. Some of them will not work outside of the environment (like —). In case you use these switches anywhere outside you will specify the information for all problems in your surrounding environment (which may be the complete document).

1.2.1 Collecting the problem information

The following information is typically given with a problem:

`\author`
- With the `\author` tag you specify one author or a list of authors. If you specify more than one author, you must separate them with "; ". Normally an author is given as *"sirname, givenname"*. You may change the way, how the name is interpreted by LATEX using `\normalnames` and `\reversednames`. This `\author` command does only overwrite the default behaviour when used inside a diagram environment.

`\Dr`
`\Prof`
`\ProfDr`
- Within the Authors command you should use the commands `\Dr`, `\Prof` and `\ProfDr` to specify these academic titles. So one may switch off the display of these titles — like it is generally done inside **Die Schwalbe**.

`\pieces`
- With `\pieces` you specify the position to be displayed on the board. For each kind of piece you may specify a list of fields. Different lists of fields are separated by ", ". So the general syntax for specifying the position of a specific piece is:
  [color][piece]{rotation of piece}[list of squares];
  e. g. `wTa1h1` should be clear, `nKa4` is a neutral king on a4
  w s n may be used to specify the color of the piece.
  K D T L S B C E X may be used to specify the piece. A **C** is used for an imitator, **E** for an equihopper and **X** for a rotated equihopper. You may *not* use an optional rotation with **C, E** and **X**.
  R U L may be used to specify an optional rotation: right, upside-down, left. So you may use `sDUc7` for a grashopper on c7 — displayed as an upsidedown queen.
  The characters used to specify color, piece and rotation may be changed using the `\DefinePieces` command.

  You may also optionally specify the number of pieces in your diagram, which then will be used to control your input automatically.

There is also support for an imitator, which is typically displayed as a black filled circle. So `sCf4` will produce the symbol of an imitator. This is shown in diagram 3.

`\stipulation`
`\stip`
- is used to specify the stipulation of the problem, e.g. `\stipulation{\#2}` may be used to specify a *mate in two*. There is also an abbreviation `\stip` for this macro.

`\city`
- may be used to specify the city and country, where the author or the authors live. I use this inside the original section of **Die Schwalbe**. You should separate multiple cities (for multiple authors) with "; ". There is also a boolean switch `showcity`, which contols, whether this information is displayed.

`\specialdiagnum`
- May be used to suppress the default diagram numbering (which uses a counter) and instead directly providing a diagram "number" which may be an arbritary text.

`\sourcenr`
- May be used to specify the number which was used for the problem inside an originals section.

`\source`
- May be used to specify the book or magazine where the problem was issued first.

`\issue`
- May be used to specify e.g. the issue of a magazine where the problem was issued.

`\pages`
- May be used to specify the page (or pages) where the problem was issued.

`\day`
`\month`
`\months`
`\year`
- May be used to specify the different parts of the date of publication of the problem. (E.g. for problems issued in the german magazine **Die Schwalbe** you will typically only specify the `\month` and the `\year`. For problems issued in **feenschach** you may specify a period of months like `\months{7-10}`.)

`\tournament`
`\award`
- May be used to specify an award and a tournament for the problem.

`\dedication`
`\dedic`
- May be used to specify a dedication which was given by the author of the problem.

`\condition`
`\cond`
- May be used to specify the fairy conditions of a problem. Different conditions should be separated with "; ".

`\twins`
- May be used to specify the different twins of a problem. Different twins should be separated with "; ".

`\remark`
`\rem`
- May be used to specify remarks to the problem. I typically use this to explain fairy pieces on the board. You may also use the abbreviation `\rem`.

`\piecedefs`
- May be used to explain rotated pieces. An example:
  `\piecedefs{{ws}{TL}{Turm-L\"aufer-J\"ager}; {wn}{SU}{Nachtreiter}}`
  will create
  ⌶⌶= Turm-Läufer-Jäger
  ♘♞= Nachtreiter
  under the diagram.

\solution \sol	• \solution may be used to specify the solution of the problem. Normally this information is not used while displaying the board but it is only collected and may be put into your text using \putsol. There is also an abbreviation \sol.
\judgement	• May be used to describe the judgement given for a problem, e. g. when you are working on an award or when you are selecting problems for a "best of . . ." book.
\comment	• May be used to specify some comment on the problem (e. g. the authors original comment.)
\themes	• May be used to specify themes displayed in the problem. Different themes should be separated with "; ". When creating a theme index, the themes will automatically be used to create the register.

There are some commands which not only collect information but normally direct result in a change of the diagram. These are:

\verticalcylinder	• does not display the outer vertical lines to symbolize a verticalcylindric board.
\horizontalcylinder	• does not display the outer horizontal lines to symbolize a horizontalcylindric board.
\noframe	• does completely suppress the outer frame e. g. to symbolize a torus board.
\noinnerframe	• sometimes you need to suppress the inner frame instead of the outer frame which is achieved by using \noinnerframe. You may not use this together with \noframe.
\gridchess	• displays lines to seperates fieldsections for gridchess.

1.2.2 Modifying the layout of the diagram (and the solution)

There are a couple of switches which control the layout of the diagrams. These are typically used more generally, so you may specify these switches outside the `diagram` environment or use them in your own style, which depends on `cpd.sty`.

There are some switches which control the layout of the information which is displayed above a diagram:

\diagleft	• displays the information left aligned
\diagcenter	• displays the information centered
\diagright	• displays the information right aligned
\widedias	• is like \diagcenter but the information shown above the diagram may span the whole width of the page. So LATEX will not wrap long author names.
\dianamestyle \solnamestyle	Using \dianamestyle (or \solnamestyle) you may specify how author-names are written above the boards (or before the solutions). You may use this only if you use \reversednames (which is the default). Otherwise it is not possible to distuingish between firstname and sirname. You must specify one of the following options as parameter to \dianamestyle (or \solnamestyle):

fullname Writes the authorname as *firstname sirname*. This is the default.

sirname Writes the *sirname* only.

short Writes an abbreviation of the *firstname* and the *sirname*. The abbreviation is calculated as follows:

- The first letter of the *firstname* will be used.
  `\author{Brand, Thomas}` will be displayed as **T. Brand**
- When there is a combined *firstname* separated with a hyphen, each first letter will be used. (see below)
  `\author{Reich, Hans-Peter}` will be displayed as **H.-P. Reich**
- When specifying the author name, you may provide the abbreviation for the firstname using the form *sirname, firstname/abbreviation*.
  `\author{Brand, Thomas/Th.}` will be displayed as **Th. Brand**

noname displays nothing

`\diagnumbering` The same way you may specify `\pagenumbering` you may specify the format the diagrams are numbered using `\diagnumbering` and `\pagenumbering` you may specify `arabic`, `Roman`, `roman`, `Alph` or `alph`. The default used is `arabic`. This command also switches the display for diagram numbers on.

`\setmonthstyle` You may also specify the way a month is displayed using `\setmonthstyle`. There are some boolean switches, which control whether a specific information is displayed. These are as follows:

`piececounter`
- This is a LaTeX boolean, which is used to specify whether the number of pieces is displayed below the board. So you may change its value using `\setboolean{piececounter}{true}` or `\setboolean{piececounter}{false}`.

`showcomputer`
`\nocomputer`
`\showcomputer`
- There is a boolean value `computer`, which controls whether the infomration about a computer proof is displayed or not. This value may be changed using `\setboolean{showcomputer}{true}` or `\setboolean{showcomputer}{false}` For backwards compatiblity we support the macros `\nocomputer` and `\showcomputer`.

`showcity`
- This is a boolean switch, which controls whether the informated gathered using the `\city` command is displayed. The default of this value is `false`.

`showacademictitle`
- This is a boolean switch, which controls whether academic titles `\Dr`, `\Prof` or `\ProfDr` — typically used within the `\author` command — are displayed. The default is `true`.

`legend`
- This boolean controls whether a legend is displayed. The default value of this value is `false`. When legends are displayed the distance between inner and outer frame is automatically adjusted.

`\notcomputerproofedsymbol`
`\computerproofedsymbol` You may specify the text, which is used indicate, whether a problem is proofed by a computer. To specifiy the symbol for a problem, which is proofed, is created by `\computerproofedsymbol`. To specifiy the symbol for a problem, which is not computer proofed, is created by `\notcomputerproofedsymbol`. You may redefine these commands by standard LaTeX means (`\renewcommand`).

`\selectelchfont` You may specify which font is used for the chesspieces. There are two possible fonts:

pk for the font which was originally used in the german magazine ***Problemkiste*** ♔♕♖♗♘♙♚♛♜♝♞♟

fs for the font which was first used (and was created for) the magazine ***feenschach*** ♔♕♖♗♘♙♚♛♜♝♞♟

\diagramx
\diagramxi
\diagramxii

In analogy to the defaults for fontsizes of a document you may specify sizes of the fonts used in a diagram. The default will be set according to the fontsize specified as the \documentclass option.
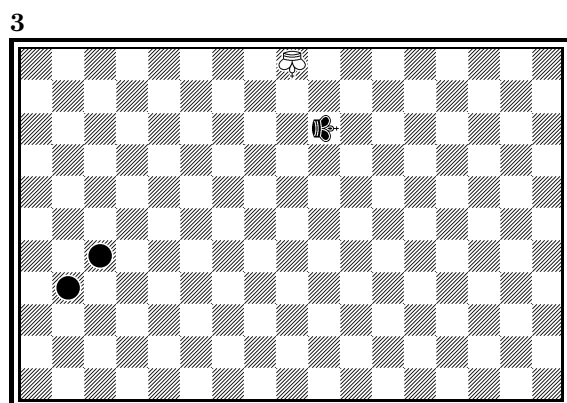
1.2.3 Other commands

\label
- This overrides the normal \label definition such that the diagram number is displayed when using \ref instead of the page number.

\diagnum
- This macro expects a number as a parameter. The number will be used to (re-)initialize the diagram number counter. With this command the output of diagram numbers also is switched on. It must be used outside the diagram environment. As an optional parameter you may specify something, which will be used as prefix before the automatically updated diagram numbers. E. g. the command \diagnum[T-]{4} will produce the following diagram numbers for the following diagrams: **T-4**, **T-5**, **T-6**, ...

1.3 Special boards

1.3.1 Changing the boardsize

diagram[]
Instead of using a boardsize of 8×8 some fairy problems need smaller or larger boards. This can be achieved by specifying the rows and columns as an optional parameter to the \begin{diagram} environment. You first have to specify the lines and then the rows as the following examples shows.

3

is created by

```
\begin{diagram}[17x11]
\label{bigdia}
\pieces{wKUi{11}, sKRj9, sCc5b4}
\end{diagram}
```

C- (1+1)

As you can see in the example, pieces are set using the \pieces macro. When using boards with more than 8 lines you have to continue with charachters **i, j, k, ...** In a board with more than 9 rows you have to specify the rows in curly braces { } as shown in the example.

1.3.2 Stereo- and Space-Chess-Diagrams

Other boards which are used from time to time are stereochess or spacechess boards (although there are quite few people which really have such boards!). To create these boards you just have to use either the `stereodiagram` or `spacediagram` environment instead of the normal `diagram` environment. Here is an example:

4
Gerhard W. Jensch
3104. feenschach 1980
Preis
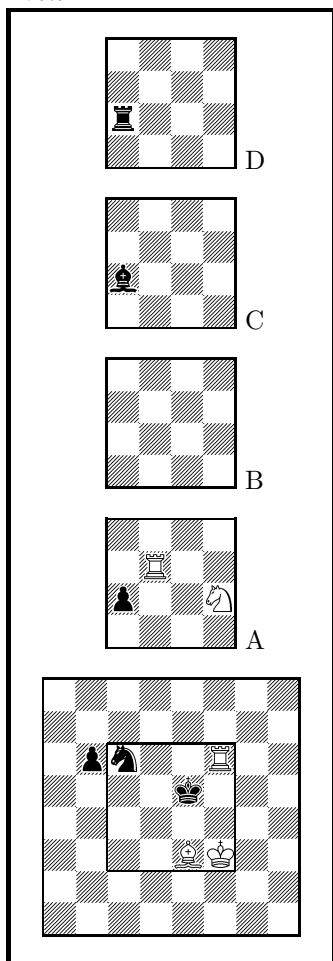
#9   C- (5+6)

5
T. R. Dawson
6595. Fairy Chess
Review 12/1945
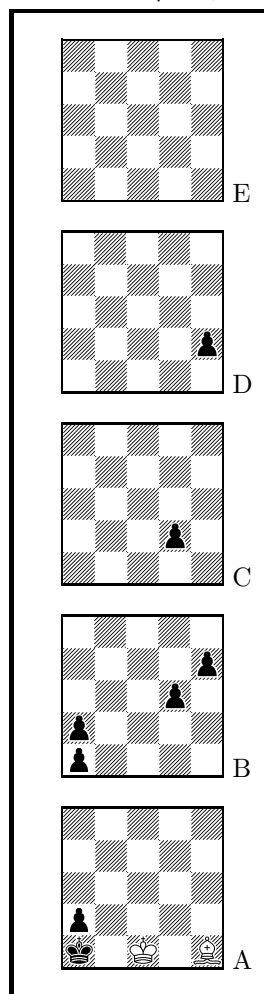
#2   C- (2+8)

These diagrams have been produced by the following code:

```
\begin{stereodiagram}
\author{Jensch, Gerhard W.}
\sourcenr{3104.}
\source{feenschach}
\year{1980}
```

```
\award{Preis}
\pieces{wKf3, wTf6d5A, wLe3, wSf4A, sKe5, sTc4D, sLc4C, sSc6, sBb6c4A}
\stip{\#9}
\end{stereodiagram}
\hfill
\begin{spacediagram}
\author{Dawson, T. R.}
\sourcenr{6595}.
\source{Fairy Chess Review}
\month{12}
\year{1945}
\pieces{wKc1A, wLe1A, sKa1A, sBa2Aa1Ba2Bd3Be4Bd2Ce2D}
\stip{\#2}
\end{spacediagram}
```

The main change is within the notation of the pieces, but people knowing space- or stereo-chess problems see that the notation is just one would expect.

\spacelayout   Sometimes one would like show the different planes of a space diagram from left to right. This may be switched using the \spacelayout command, which takes one parameter:

vertical for planes organized bottom up

horizontal for planes organized left to right

Is produced by


```
\begin{spacediagram}[4x2x3]
\spacelayout{horizontal}
\end{spacediagram}
```

C- (0+0)
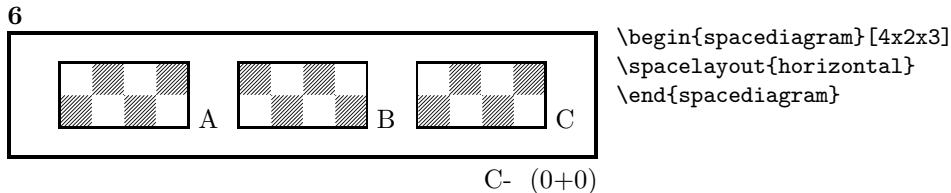
1.3.3 Cylindric boards / suppressing frames

\horizontalcylinder   To stylize a cylindric board one typically does not show parts of the frame.
\verticalcylinder   When using \verticalcylinder the horizontal lines of the outer frame will
\noframe   not be drawn. \horizontalcylinder suppresses the drawing of the verti-
\noinnerframe   cal lines of the outer frame. Using \noframe completely supresses the outer frame. \noinnerframe suppresses the innerframe. In case of stereo- or space-chess-diagrams \verticalcylinder, \horizontalcylinder and \noframe sup-presses the inner frame.

1.4 Change the coloring of the fields

\allwhite   The allwhite boolean can be used to have all white squares. Therefore dot-ted lines are produced to separate the squares. For convenience we provide a command allwhite which switches the value of the allwhite boolean to true.

10

7
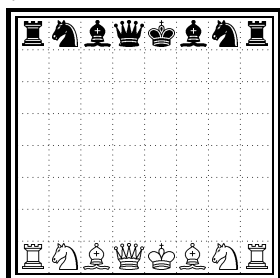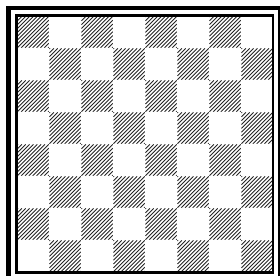
This was produced by:

```
\begin{diagram}
\allwhite
\pieces{wKe1, wDd1, wTa1h1, wLf1c1, wSb1g1, %
    sKe8, sDd8, sTa8h8, sLf8c8, sSb8g8}
\end{diagram}
```

C- (8+8)

\switchcolors   The boolean `switchcolors` may be used to switch the coloring of white and black fields. For convenience we provide a command `switchcolors` which switches the value of the `switchcolors` boolean to true.

8

C- (0+0)

1.4.1 figurine Notation

figurine   Instead of using the `diagram`, `stereodiagram` or `spacediagram` environment one may use the `figurine` environment. This suppresses the diagram output and produces a figurine notation inside the current text.

1.4.2 Changes within the board

\nofields   You may remove single fields by using the `\nofields` or `\nosquares` command.
\nosquares   Using this command does make sense for empty black fields only. This command expects a list of squares separated by "', "'. You may also use this command within a stereo- or space-diagram. In this case you must specify the fields the same way you do it inside the `\pieces` command.

\fieldframe   You may specify single fields, which should be surrounded by a frame. This is possible using the `\fieldframe` command. You must specify the list of fields which should have frames the same way you specify fields within the `\nofields` command.

\gridlines   A more general form of lines within diagrams is possible by using the `\gridlines` command. You may specify a list of horizontal or vertical lines within the diagram. Different lines should be separated by "', "'. A single line must be specified as:
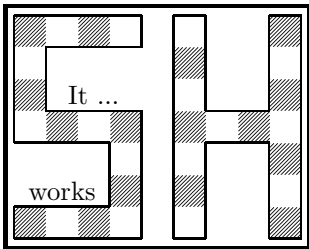
[plane](v or h)(x-coordinate)(y-coordinate)(length in squares)

11

You must specify a plane in case of stereo- or space-chess only. For a vertical line starting at the lower left corner of "'c2"' ending at the upper left corner of "'c8"' the command to use is: `\gridlines{v217}`. Concerning the coordinates and length specifications you should pay attention to put values greater 9 in curly braces { }.

`\fieldtext` Sometimes you need to show text on some squares. This is done using the `\fieldtext` command. The syntax for a single text is: {Text}(x-coordinate)(y-coordinate)

Now an example how to use `\gridlines`, `\nofields` and `\fieldtext` to create some "'*Letter-Board*"' with text inside.

9


```
\begin{diagram}[9x7]
\noinnerframe
\nofields{a2, b2, c2, a3, b3, c3, %
 b5, c5, d5, b6, c6, d6, %
 e1, e2, e3, e4, e5, e6, e7, %
 g1, h1, h2, h2, g3, h3, g5, h5, g6, h6, g7, h7}
\gridlines{h004, h013, h033, h143, h163, h074, %
 v001, v034, v142, v312, v404, v461, %
 h501, h571, h632, h642, h801, h871, %
 v507, v603, v643, v803, v843, v907}
\fieldtext{{It ...}c5, {works}b2}
\end{diagram}
```

C- (0+0)

1.5 Misc

1.5.1 Chess pieces within normal text

Sometimes you may need symbols of chess pieces within your normal text, e. g. to show the *Viele-Väter-Stellung* ♔c8, ♙b6, ♛a8, ♟a7. This is possible by {\wK}c8, {\wB}b6, {\sK}a8, {\sB}a7. Additionally you may use some of these symbols:

`\swL` ♗ a white bishop on a black square

`\ssL` ♝ a black bishop on a black square

`\wNr` ♘ a white nightrider

`\nNr` ♞ a neutral nightrider

`\sNr` ♞ a black nightrider

`\wGh` a white grashopper

`\nGh` a neutral grashopper

`\sGh` a black grashopper

`\Imi` ● an imitator, you may also use the **Circle** notation:

`\wC` ○ a white circle

\nC	◐	a neutral circle
\sC	●	a black circle
\wE	⋈	a white equihopper
\sE	⋈	a black equihopper
\nE	⋈	a neutral equihopper
\wX	⧖	a white rotated equihopper
\sX	⧗	a black rotated equihopper
\nX	⧗	a neutral rotated equihopper

1.5.2 Other often used symbols

The style also defines commands for other symbols, which are often used within the declaration of twins or when writing a solution:

\set	*	setplay
\ra	→	a left to right arrow
\lra	↔	a double ended arrow
\OO	**0-0**	king side castling
\OOO	**0-0-0**	queen side castling
\x	×	for "'takes"'
\any	∼	for any move (you may not simply use a ∼ within your text because TEX handles this as a protected space)

1.5.3 Internationalization

\DefinePieces   This part is relevant for people who do not like the german notation for pieces and therefore want to change this within their sources. Using the german notation, you specify the color of a piece as **w**, **s** or **n**, the type of a piece as **K**, **D**, **T**, **L**, **S**, **B** and a possible rotation of a piece as **L**, **R** or **U**. To use another notation you may use the \DefinePieces command which takes 3 parameters.

1. the letters used to specify the colors of the pieces using the order white, black, neutral

2. the letters used to specify the type of a piece using the order king, queen, rook, bishop, knight, pawn. You may not use the characters **C, E** and **X**, because these are used for Circle, Equihopper and rotated Equihopper.

3. the letters used to specify an optional rotation using the order left-turned, right-turned, upside-down. You must use capital letters for this.

When using a `\DefinePieces` command, the commands are changed to its next usage (or to the end of the document). The command not only changes the pieces you may use within the `\pieces` command but also defines commands to be used within normal text, as the following example shows:

`\DefinePieces{wbn}{KQRBNP}{LRU}`
`\wDU\bKR\bwB`

creates ▦ ♟ ♞

1.5.4 When writing books

`\develop`   To simplify your writings you may use the macro `\develop`. This will create the following additional information during developement:

- when you use `\label` in your diagrams the label will be shown at the left upper corner of the diagram.

- The given label will also be shown inside the solution and also in any register entry.

- when you have specified a `\judgement` this information will be put into the solution.

Most books on chessproblems contain registers for authors, sometimes also on themes and sources. As you already collect all these information very detailed within the `diagram` environment the generation of registers is very simple.

`\makeaindex`
`\authorindex`
   To create a registers of authors you need to put the `\makeaindex` command inside the preamble of your document. This instructs latex to write an intermediate file containing information about authors and the numbers of the diagrams.[1] After a first LATEX run on your document, you need to convert the intermediate file. This may be done with the `makeindex` program, which will typically called like

`makeindex -o <filename>.and <filename>.adx`

The resulting register may be put into your document using the `\authorindex` command.

`\makesindex`
`\sourceindex`
`\maketindex`
`\themeindex`
   Like an index for authors you may also create indices for sources and/or themes. For an source register you need to put `\makesindex` into your document preamble; for a theme register the command is `\maketindex`. The conversion commands for the intermediate files are

`makeindex -o <filename>.snd <filename>.sdx`

for the source register and

`makeindex -o <filename>.tnd <filename>.tdx`

for the theme register.

The source register is inserted into the text using `\sourceindex` and the theme register using `\themeindex`.

1.5.5 Other useful stuff

`\solpar`   In some environments — like `window` — the use of `\par` leads to unwanted effects. Therefore we use the command `\solpar` inside the definition of `\@dia@solution`, which is used to display a single solution when using

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[1] Normally registers contain page numbers but with chess problems normally people refer to the diagram numbers.

`\putsol`. You may use `\renewcommand{\solpar}` to provide another definition of `\solpar` in such situations.

2   The documentation driver

The following code will generate the documentation. Since it is the first piece of code in the file, the documentation can be obtained by simply processing the file with LaTeX 2_ε.

```
1 ⟨∗driver⟩
2 \documentclass[a4paper]{article}
3 \usepackage{doc}
4 \usepackage{diagram}
5 \EnableCrossrefs
6 \CodelineIndex
7 \RecordChanges
8 \begin{document}
9 \DocInput{diagram.dtx}
10 \end{document}
11 ⟨/driver⟩
```

3   The implementation of the style

Specifies the preamble of our style file.

```
12 ⟨∗style⟩
13 \ProvidesPackage{diagram}[2015/03/16]
```

`\DefaultDiagramSize`   The `\DefaultDiagramSize` may be used in code to switch to the default diagram size. As this depends on the documents default font size we use the same option and execute *10pt* as default.

```
14 \newcommand*{\DefaultDiagramSize}{}
15 \DeclareOption{10pt}{\renewcommand*{\DefaultDiagramSize}{\diagramx}}
16 \DeclareOption{11pt}{\renewcommand*{\DefaultDiagramSize}{\diagramxi}}
17 \DeclareOption{12pt}{\renewcommand*{\DefaultDiagramSize}{\diagramxii}}
18 \ExecuteOptions{10pt}

19 \ProcessOptions
20 \AtBeginDocument{\DefaultDiagramSize}

21 \RequirePackage{ifthen}
22 \RequirePackage{calc}
23 \RequirePackage{pstricks}
```

Now we declare some constants to unify its usage within the style file.

```
24 \chardef\f@ur=4
25 \chardef\@ight=8
26 \newcount\elchfont
27
28 \chardef\@pkelch=0
29 \chardef\@fselch=1
30
31 \newcount\dia@type
32
```

```
33 \newboolean{@textproblem}
34 \setboolean{@textproblem}{false}
35 \def\textproblem{\setboolean{@textproblem}{true}\let\@dia@stipulation=\relax}
36
37 \newboolean{@solafterdiagram}
38 \setboolean{@solafterdiagram}{false}
39 \def\solafterdiagram{\setboolean{@solafterdiagram}{true}\ignorespaces}
40
41 \newif\if@vframe\@vframetrue
42 \newif\if@hframe\@hframetrue
43 \newif\if@leaveOuter\@leaveOutertrue
44
45 \newif\if@shortform
46
47 \newif\ifspace@vertical
48 \def\spacehorizontal{\space@verticalfalse}
49
50 \newif\ifdi@no
51 \newcounter{board@nr}
52 \renewcommand{\theboard@nr}{\thediag}
53 % \newif\iffigcnt
54 \newboolean{piececounter}
55 \newcount\r@w
56 \newcount\lin@
57 \newcount\pl@ne
58 \newcount\current@plane
59
60 \newcount\w@cnt
61 \newcount\b@cnt
62 \newcount\n@cnt
63 \newboolean{showcity}
64 \setboolean{showcity}{false}
65 \newboolean{showacademictitle}
66 \setboolean{showacademictitle}{true}
67 \newboolean{legend}
68 \setboolean{legend}{false}
69
70 \newcount\@blackfield
71 \newboolean{allwhite}
72 \setboolean{allwhite}{false}
73 \newcommand{\allwhite}{\setboolean{allwhite}{true}}
74 \newcounter{field@border}
75 \newcount\@whitefield
76 \newboolean{switchcolors}
77 \setboolean{switchcolors}{false}
78 \newcommand{\switchcolors}{\setboolean{switchcolors}{true}}
```

We have counters for each color to count the pieces on the board.

```
79 \newboolean{cpd@checkPieceCounts}
80 \newcounter{cpd@defWhitePieces}
81 \newcounter{cpd@defBlackPieces}
82 \newcounter{cpd@defNeutralPieces}
83
84 \newcounter{cpd@whitePieces}
85 \newcounter{cpd@blackPieces}
```

```
86 \newcounter{cpd@neutralPieces}
87
88 \newcommand{\cpd@stepcounterWhite}{\stepcounter{cpd@whitePieces}}
89 \newcommand{\cpd@stepcounterBlack}{\stepcounter{cpd@blackPieces}}
90 \newcommand{\cpd@stepcounterNeutral}{\stepcounter{cpd@neutralPieces}}
91 \global\let\cpd@stepcounterPieces\relax
92
93 \newcount\help@a
94 \newcount\help@b
95
96 \newbox\dia@box
97 \newbox\@cnt@box
98 \newdimen\@cnt@wd
99 \newbox\@stip@box
100
101 \newdimen\topdist\topdist\z@
102 \newbox\@test@box
103 \newdimen\@test@dimen
104 \newif\if@left
105
106 \newcount\brd@ff
107
108 \newdimen\dia@lineskip
109
110 \newdimen\board@width
111 \newdimen\bd@width
112 \newdimen\head@width
113 \newdimen\sq@width
114
115 \newdimen\grid@width
116 \newdimen\inner@frame
117 \newdimen\outer@frame
118 \newdimen\space@frame
119 \newdimen\v@frame@dist
120 \newdimen\h@frame@dist
121 \newdimen\space@frame@dist
122 \newdimen\v@space@dist
123 \newdimen\h@space@dist
124
125 \newbox\sq@box
126 \newbox\plane@box
```

We need a lot of token registers to register the information from within the `diagram` environment. These token registers are defined here. Initially each token register is defined to contain `\relax`, which serves as an *end-marker* when parsing lists.

```
127 \newtoks\typis@tk\typis@tk={\relax}
128 \newtoks\label@tk\label@tk={\relax}
129 \newtoks\sol@tk\sol@tk={\relax}
130 \newtoks\number@tk\number@tk={\relax}
131 \newtoks\aut@tk\aut@tk={\relax}
132 \newtoks\city@tk\city@tk={\relax}
133 \newtoks\sourcenr@tk\sourcenr@tk={\relax}
134 \newtoks\source@tk\source@tk={\relax}
```

```
135  \newtoks\day@tk\day@tk={\relax}
136  \newcount\from@month\from@month=\z@
137  \newcount\to@month\to@month=\z@
138  \newtoks\year@tk\year@tk={\relax}
139  \newtoks\issue@tk\issue@tk={\relax}
140  \newtoks\pages@tk\pages@tk={\relax}
141  \newtoks\tournament@tk\tournament@tk={\relax}
142  \newtoks\award@tk\award@tk={\relax}
143  \newtoks\after@tk\after@tk={\relax}
144  \newtoks\version@tk\version@tk={\relax}
145  \newtoks\correction@tk\correction@tk={\relax}
146  \newtoks\dedic@tk\dedic@tk={\relax}
147  \newtoks\fidealbum@tk\fidealbum@tk={\relax}
148  \newtoks\theme@tk\theme@tk={\relax}
149  \newtoks\twins@tk\twins@tk={\relax}
150  \newtoks\judgement@tk\judgement@tk={\relax}
151  \newtoks\comment@tk\comment@tk={\relax}
152  \newtoks\computer@tk\computer@tk={-}
153  \newtoks\nofields@tk\nofields@tk={\relax}
154  \newtoks\fieldframe@tk\fieldframe@tk={\relax}
155  \newtoks\gridlines@tk\gridlines@tk={\relax}
156  \newtoks\pieces@tk\pieces@tk={\relax}
157  \newtoks\fieldtext@tk\fieldtext@tk={\relax}
158  \newtoks\text@tk\text@tk={\relax}
159  \newtoks\stipulation@tk\stipulation@tk={\relax}
160  \newtoks\condition@tk\condition@tk={\relax}
161  \newtoks\remark@tk\remark@tk={\relax}
162  \newtoks\piecedefs@tk\piecedefs@tk={\relax}
```

To remember, which information has been specified, we define TeX-booleans for each command.

```
163  \newif\if@label\@labelfalse
164  \newif\if@number\@numberfalse
165  \newif\if@special\@specialfalse
166  \newif\ifauth@r\auth@rfalse
167  \newif\if@city\@cityfalse
168  \newif\if@sourcenr\@sourcenrfalse
169  \newif\if@source\@sourcefalse
170  \newif\if@date\@datefalse
171  \newif\if@day\@dayfalse
172  \newif\if@year\@yearfalse
173  \newif\if@issue\@issuefalse
174  \newif\if@pages\@pagesfalse
175  \newif\if@tournament\@tournamentfalse
176  \newif\if@award\@awardfalse
177  \newif\if@after\@afterfalse
178  \newif\if@version\@versionfalse
179  \newif\if@correction\@correctionfalse
180  \newif\if@dedication\@dedicationfalse
181  \newif\if@fidealbum\@fidealbumfalse
182  \newif\if@twins\@twinsfalse
183  \newif\if@theme\@themefalse
184  \newif\if@computer\@computerfalse
185  \newif\if@judgement\@judgementfalse
```

```
186 \newif\if@comment\@commentfalse
187 \newif\if@pieces\@piecesfalse
188 \newif\if@fieldtext\@fieldtextfalse
189 \newif\if@nofields\@nofieldsfalse
190 \newif\if@gridlines\@gridlinesfalse
191 \newif\if@fieldframe\@fieldframefalse
192 \newif\if@stdgrid\@stdgridfalse
193 \newboolean{showcomputer}\setboolean{showcomputer}{true}%
194 \newcommand*{\computerproofedsymbol}{C+}
195 \newcommand*{\notcomputerproofedsymbol}{C-}
196 % \newif\if@show@computer\@show@computertrue
197 \newif\if@stipulation\@stipulationfalse
198 \newif\if@condition\@conditionfalse
199 \newif\if@remark\@remarkfalse
200 \newif\if@piecedefs\@piecedefsfalse
201 \newif\if@typis\@typisfalse
202 \newif\if@widedias\@widediasfalse
203 \newif\ifx@twins\x@twinsfalse
204 \newif\ifx@cond\x@condfalse
205 \newif\ifimitator\imitatorfalse
206 \newif\ifnormal@names\normal@namesfalse
207 \newif\ifs@lu
208 \newif\if@develop\@developfalse
209 \newif\if@notfirst
210 \newif\if@first

211 \newwrite\s@lfd
212 \let\below@newline=\relax
213 % These are used by the "old" board creating mechanism
214 \newcount\@lines
215 \newcount\@rows
216 \newcount\lines@max
217 \newcount\rows@max
218 \newcount\planes@max
```

The following counters are used when creating the diagram itself.

```
219 \newcounter{cpd@rowsmax}
220 \newcounter{cpd@linesmax}
221 \newcounter{cpd@current@row}
222 \newcounter{cpd@current@line}
223 \newcounter{cpd@maxsquare}
224 \newcounter{cpd@helper}
225 \newcounter{cpd@current@square@index}
226 \newcounter{cpd@current@square@value}
```

Some boolean TeX-switches used whithin stereo- or spacechess diagrams.

```
227 \newif\if@stereo\@stereofalse
228 \newif\if@space\@spacefalse
```

These boolean switches are used to control the output of registers.

```
229 \newif\if@aindex\@aindexfalse
230 \newif\if@sindex\@sindexfalse
231 \newif\if@tindex\@tindexfalse
232 \newif\ifds@label
```

\diagram Defines the code executed in \begin{diagram}. In case no optional size is given,
\@diagram a normal 8×8 board is generated.

```
233 \def\diagram{%
234     \begingroup%
235     \@ifnextchar [{\@diagram}{\@diagram[\@ight x\@ight]}%
236 }
237
238 \def\@diagram[#1x#2]{%
239     \lines@max=#1%
240     \rows@max=#2%
241     \setcounter{cpd@linesmax}{#1}%
242     \setcounter{cpd@rowsmax}{#2}%
243     \setcounter{cpd@maxsquare}{\value{cpd@rowsmax}*\value{cpd@linesmax}}%
244     \pl@ne=\z@%
245     \current@plane=\z@%
246     \let\put@sqs=\put@sqs@normal%
247     \let\read@plane=\read@plane@normal%
248     \@start@diagram%
249 }
250 \def\stereodiagram{%
251     \begingroup%
252     \@stereotrue%
253     \let\put@sqs=\put@sqs@stereo%
254     \let\read@plane=\read@plane@stereo%
255     \@start@diagram%
256 }
257 \def\spacediagram{%
258     \begingroup%
259     \@spacetrue%
260     \@ifnextchar [{\@spacediagram}{\@spacediagram[5x5x5]}%
261 }
262
263 \def\@spacediagram[#1x#2x#3]{%
264     \lines@max=#1%
265     \rows@max=#2%
266     \planes@max=#3%
267     \let\put@sqs=\put@sqs@space%
268     \let\read@plane=\read@plane@space%
269     \@start@diagram%
270 }
271 \def\@start@diagram{%
272     \init@vars%
273     \let\author=\ds@author%
274     \let\day=\ds@day%
275     \let\month=\ds@month%
276     \let\year=\ds@year%
277     \let\label=\ds@label%
278     \ignorespaces%
279 }
280
281 \def\showtypis#1{%
282     \@typistrue%
283     \typis@tk={#1}%
```

```
284    \ignorespaces%
285 }
286
287 \def\enddiagram{%
288    \let\author=\orig@author%
289    \let\day=\orig@day%
290    \let\month=\orig@month%
291    \let\year=\orig@year%
292    \let\label=\orig@label%
293    \if@number%
294    \else%
295       \refstepcounter{board@nr}% so \label and \ref work properly
296    \fi%
297    %
298    % Now \label@tk should be set, if wanted, so
299    % we can generate the index entries
300    %
301    \@aindex%
302    \@sindex%
303    \@tindex%
304    %
305    % Now \@currentlabel will be set right, so we can use
306    % the original label
307    \if@label%
308       \expandafter\@set@label\the\label@tk;%
309    \fi%
310    %
311    % Now we know, if we have frames so we can setup our dimensions
312    %
313    \global\sq@width=\fontdimen\tw@\chessfont%
314    \if@stereo%
315       \bd@width=\@ight\sq@width%
316       \board@width=\@ight\sq@width%
317       \ifdim\h@frame@dist<\sq@width%
318          \h@frame@dist=\sq@width%
319       \fi%
320       % We do already skip with \v@space@dist
321       % So we use the additional skip \space@frame@dist here
322       \v@frame@dist=\space@frame@dist%
323       \ifdim\space@frame>\outer@frame%
324          \outer@frame=\space@frame%
325       \fi%
326       \advance\bd@width\tw@\inner@frame%
327       \advance\board@width\tw@\inner@frame%
328       \advance\board@width\tw@\h@frame@dist%
329       \advance\board@width\tw@\outer@frame%
330    \else\if@space%
331       \ifdim\h@frame@dist<1.5\sq@width%
332          \h@frame@dist=1.5\sq@width%
333       \fi%
334       % We do already skip with \v@space@dist
335       % So we use the additional skip \space@frame@dist here
336       \v@frame@dist=\space@frame@dist%
337       \ifdim\space@frame>\outer@frame%
```

```
338        \outer@frame=\space@frame%
339      \fi%
340      \ifspace@vertical%
341         \bd@width=\lines@max\sq@width%
342         \board@width\bd@width%
343         \advance\bd@width\tw@\inner@frame%
344         \advance\board@width\tw@\inner@frame%
345         \advance\board@width\tw@\h@frame@dist%
346         \advance\board@width\tw@\outer@frame%
347      \else%
348         \bd@width=\lines@max\sq@width%
349         \advance\bd@width\tw@\inner@frame%
350         \ifdim\h@space@dist<1.5\sq@width%
351            \h@space@dist=1.5\sq@width%
352         \fi%
353         %\h@space@dist=0.7\sq@width%
354         % Now we can compute the width of the complete board
355         \board@width\bd@width%
356         \advance\board@width\h@space@dist%
357         \multiply\board@width\planes@max%
358         \advance\board@width\h@space@dist%
359         \advance\board@width\tw@\outer@frame%
360      \fi%
361   \else%
362      \ifthenelse{\boolean{legend}}{\v@frame@dist=1.5em\h@frame@dist=1.5em}{}%
363      \bd@width=\lines@max\sq@width%
364      \ifnum\lines@max>\@ight%
365         % Make the board wider
366         \board@width=\lines@max\sq@width%
367      \else%
368         % Make a normal width
369         \board@width=\@ight\sq@width%
370      \fi%
371      \advance\bd@width\tw@\inner@frame%
372      \advance\board@width\tw@\inner@frame%
373      \advance\board@width\tw@\h@frame@dist%
374      \advance\board@width\tw@\outer@frame%
375   \fi\fi%
376   \if@widedias%
377      \head@width=\textwidth%
378   \else%
379      \head@width=\board@width%
380   \fi%
381   %
382   % Now we should build the diagram itself
383   %
384   \ifthenelse{\boolean{@textproblem}}{%
385      % Put the stipulation into the \sq@box
386      \setbox\sq@box=\hbox{\vbox to \board@width{\hsize\board@width%
387         \stipfont%
388         \raggedright%
389         \sloppy%
390         \the\stipulation@tk%
391         \vfil%
```

```
392         }}%
393     }{%
394         \put@sqs% This builds up the \sq@box
395         % Check, if the given number of pieces is reached
396         \ifthenelse{\boolean{cpd@checkPieceCounts}}{%
397             \ifthenelse{\value{cpd@defWhitePieces}=\value{cpd@whitePieces}}{}%
398                 {\errmessage{Wrong number of white pieces}}%
399             \ifthenelse{\value{cpd@defBlackPieces}=\value{cpd@blackPieces}}{}%
400                 {\errmessage{Wrong number of black pieces}}%
401             \ifthenelse{\value{cpd@defNeutralPieces}=\value{cpd@neutralPieces}}{}%
402                 {\errmessage{Wrong number of neutral pieces}}%
403         }{}%
404     }%
405     %
406     \global\setbox\dia@box=\hbox{\vbox{%
407         \parindent\z@%
408         \parskip\z@%
409         \baselineskip11\p@\advance\baselineskip\dia@lineskip%
410         \hsize\head@width%
411         \centering%
412         % diagram header
413         \vskip\topdist%
414         \vbox{\hsize\board@width\hbox{%
415             \if@develop\if@label%
416                 \noindent\raggedright\llap{\labelfont\the\label@tk\ }%
417             \fi\fi%
418             \vbox{%
419                 \he@dpos\dia@above%
420             }%
421         }}%
422         \vskip\tw@\p@%
423         % diagram itself
424         \vtop{\hsize\board@width%
425             \hbox to \head@width{\hss\vbox{%
426                 \hsize\board@width%
427                 \ifthenelse{\boolean{@textproblem}}{%
428                     \box\sq@box%
429                 }{%
430                     \outer@henbox{\box\sq@box}%
431                 }%
432             }\hss}%
433             % diagram trailer
434             \hbox to \head@width{\hss\vtop{%
435                 \hsize\board@width%
436                 \parskip\z@%
437                 \raggedright%
438                 \put@count%
439                 \dia@below%
440             }\hss}%
441         }%
442     }}% End of \dia@box
443     \do@dia@job%
444     \endgroup%
445 }
```

```
446
447 \def\do@put@count{%
448    \ \ (\arabic{cpd@whitePieces}+\arabic{cpd@blackPieces}%
449    \ifthenelse{\value{cpd@neutralPieces}>0}{+\arabic{cpd@neutralPieces}}{})%
450 }
451
452 \def\put@count{%
453    % First we build the box with the figure count
454    \ifthenelse{\boolean{showcomputer}\OR\boolean{piececounter}}{%
455       \global\setbox\@cnt@box=\hbox{%
456          \stipfont%
457          \ifthenelse{\boolean{showcomputer}}{%
458             \ \ \if@computer\computerproofedsymbol\else\notcomputerproofedsymbol\fi%
459          }{}%
460          \ifthenelse{\boolean{piececounter}}{%
461             \do@put@count%
462          }{}%
463       }%
464       \@cnt@wd=\wd\@cnt@box%
465       \hangindent-\@cnt@wd%
466       \hangafter\m@ne%
467       \noindent%
468       \hbox to \z@{%
469          \hbox to \board@width{\hfil\unhbox\@cnt@box}\hskip -\board@width%
470       }%
471    }{}%
472 }
473
474 \let\endstereodiagram=\enddiagram
475 \let\endspacediagram=\enddiagram
476 \def\figurine{%
477    \begingroup%
478    \init@vars%
479    \let\author=\ds@author%
480    \let\day=\ds@day%
481    \let\month=\ds@month%
482    \let\year=\ds@year%
483    \let\label=\ds@label%
484 }
485
486 \def\endfigurine{%
487    \let\author=\orig@author%
488    \let\day=\orig@day%
489    \let\month=\orig@month%
490    \let\year=\orig@year%
491    \let\label=\orig@label%
492    \if@number%
493    \else%
494       \refstepcounter{board@nr}% so \label and \ref work properly
495    \fi%
496    %
497    % Now \label@tk should be set, if wanted, so
498    % we can generate the index entries
499    %
```

```
500    \@aindex%
501    \@sindex%
502    \@tindex%
503    %
504    % Now \@currentlabel will be set right, so we can use
505    % the original label
506    %
507    \if@label%
508        \expandafter\@set@label\the\label@tk;%
509    \fi%
510    %
511    \@show@figurine%
512    \endgroup%
513 }
514 %
515 \gdef\selectelchfont#1{%
516    \global\elchfont\csname @#1elch\endcsname\defaultelchfont%
517 }
```

Here we define commands to change fonts used for text above and below the diagram. You may redefine to adjust the fonts to your needs.

```
\authorfont
\cityfont    518 \newcommand*{\authorfont}{\bfseries}
\sourcefont  519 \newcommand*{\cityfont}{\slshape}
\awardfont   520 \newcommand*{\sourcefont}{\bfseries\itshape}
\dedicfont   521 \newcommand*{\awardfont}{\itshape}
\stipfont    522 \newcommand*{\dedicfont}{\itshape}
\remfont     523 \newcommand*{\stipfont}{\rmfamily}
\labelfont   524 \newcommand*{\remfont}{\rmfamily}
\cpd@boardfont 525 \newcommand*{\labelfont}{\rmfamily}
\legendfont  526 \newcommand*{\cpd@boardfont}{\rmfamily}
             527 \newcommand*{\legendfont}{\sffamily}
```

We have three different default sizes for diagrams. The following commands switch fontsizes used for the chessfonts to typeset the diagrams.

```
\diagramx
\diagramxi   528 \newcommand*{\diagramx}{
\diagramxii  529    \ifcase\elchfont\relax%
             530        \font\chessfont=pkelch12
             531        \font\chtextfont=pkelch10
             532    \else%
             533        \font\chessfont=fselch12
             534        \font\chtextfont=fselch10
             535    \fi%
             536    \dia@lineskip\z@
             537    \dia@type\z@
             538 }
             539
             540 \newcommand*{\diagramxi}{
             541    \ifcase\elchfont\relax%
             542        \font\chessfont=pkelch14
             543        \font\chtextfont=pkelch11
             544    \else%
```

25

```
545        \font\chessfont=fselch14
546        \font\chtextfont=fselch11
547    \fi%
548    \dia@lineskip\@ne\p@
549    \dia@type\@ne
550 }
551
552 \newcommand*{\diagramxii}{
553    \ifcase\elchfont\relax%
554        \font\chessfont=pkelch16
555        \font\chtextfont=pkelch12
556    \else%
557        \font\chessfont=fselch16
558        \font\chtextfont=fselch12
559    \fi%
560    \dia@lineskip\tw@\p@
561    \dia@type\tw@
562 }
```

\defaultelchfont   \defaultelchfont is used to define the fontsize used to typeset the diagrams
                    depending on the documentsize.

```
563 \def\defaultelchfont{%
564    \ifcase\@ptsize\relax%
565        \diagramx\or%
566        \diagramxi\or%
567        \diagramxii%
568    \fi%
569 }

570 \def\dianamestyle#1{\def\@dianame{\csname @#1\endcsname}}
571 \def\solnamestyle#1{\def\@solname{\csname @#1\endcsname}}
572 \newcommand*{\diagnum}[2][]{%
573    \renewcommand*{\@dianumber@prefix}{#1}%
574    \setcounter{board@nr}{#2}%
575    \addtocounter{board@nr}{\m@ne}}
```

\ra   Now we define a couple of abbreviations and special symbols often used when
\lra   setting problem chess documents.
\rla
 \x
\set
 \OO
\OOO
\any
\further

```
576 \def\ra{\mbox{$\rightarrow$}}
577 \def\lra{\mbox{$\leftrightarrow$}}
578 \let\rla=\lra
579 \def\x{\mbox{\ifmmode\times\else$\times$\fi}}
580 \def\set{\kern -.05em\raise .1ex\hbox{*}}
581 \def\@O{0\raise.25ex\hbox{-}\kern -.1em\relax}
582 \def\OO{\@OO}
583 \def\OOO{\@O\@OO}
584 \def\any{\ifmmode\sim\else$\sim$\fi}
585 \def\further{\ifmmode\Rightarrow\else$\Rightarrow$\fi\ \ignorespaces}

586 \def\spacelayout#1{\csname space@#1\endcsname}
587 \def\nodiagnumbering{\global\di@nofalse}
588 \newcommand*{\@dianumber@prefix}{}
589 \def\diagnumbering#1{%
590    \di@notrue\diagnum{\@ne}%
```

26

591 `\gdef\thediag{\@dianumber@prefix\csname @#1\endcsname\c@board@nr}%`
592 `}`

\diagcenter
\diagleft
\diagright

The macros \diagcenter, \diagleft and \diagright simply define the macro \he@dpos to the corresponding paragraph alignment.

593 `\def\diagcenter{\def\he@dpos{\centering}}`
594 `\def\diagleft{\def\he@dpos{\raggedright}}`
595 `\def\diagright{\def\he@dpos{\raggedleft}}`

\setmonthstyle

The implementation of \setmonthstyle does \diagnumbering define a command which uses the given parameter as a part of the command name.

596 `\def\setmonthstyle#1{\def\write@month{\csname @#1\endcsname}}`

597 `\def\specialdiagnum#1{%`
598 `    \@specialtrue%`
599 `    \number@tk={#1}\@numbertrue\def\thediag{#1}\def\@currentlabel{#1}%`
600 `    \ignorespaces%`
601 `}`

\ds@label
\ds@author

The macros \ds@label and \ds@author are defined internally and are made public within \begin{diagram}. This is because the macros \label and \author are normal LaTeX-macros and I want to avoid to redefine these globally.

602 `\def\ds@label{%`
603 `    \@ifstar{\ds@labelfalse\ds@xlabel}{\ds@labeltrue\ds@xlabel}%`
604 `}`
605 `\def\ds@author#1{%`
606 `    \aut@tk={#1}\auth@rtrue%`
607 `    \ignorespaces%`
608 `}`

\ds@academictitle
\Dr
\Prof
\ProfDr

609 `\def\ds@academictitle#1{\ifthenelse{\boolean{showacademictitle}}{#1~}{}\ignorespaces}`
610 `\newcommand{\Dr}{\ds@academictitle{Dr.}}`
611 `\newcommand{\Prof}{\ds@academictitle{Prof.}}`
612 `\newcommand{\ProfDr}{\ds@academictitle{Prof.\,Dr.}}`

613 `\def\city#1{%`
614 `    \city@tk={#1}\@citytrue%`
615 `    \ignorespaces%`
616 `}`
617 `\def\sourcenr#1{%`
618 `    \sourcenr@tk={#1}\@sourcenrtrue%`
619 `    \ignorespaces%`
620 `}`
621 `\def\source#1{%`
622 `    \source@tk={#1}\@sourcetrue%`
623 `    \ignorespaces%`
624 `}`
625 `\def\ds@day#1{%`
626 `    \day@tk={#1}\@daytrue\@datetrue%`
627 `    \ignorespaces%`
628 `}`
629 `\def\ds@month#1{%`
630 `    \from@month=#1\@datetrue%`

```latex
631    \ignorespaces%
632 }
633 \def\months#1{%
634    \@months#1;%
635    \ignorespaces%
636 }
637 \def\ds@year#1{%
638    \year@tk={#1}\@yeartrue\@datetrue%
639    \ignorespaces%
640 }
641 \def\issue#1{%
642    \issue@tk={#1}\@issuetrue%
643    \ignorespaces%
644 }
645 \def\pages#1{%
646    \pages@tk={#1}\@pagestrue%
647    \ignorespaces%
648 }
649 \def\tournament#1{%
650    \tournament@tk={#1}\@tournamenttrue%
651    \ignorespaces%
652 }
653 \def\award#1{%
654    \award@tk={#1}\@awardtrue%
655    \ignorespaces%
656 }
657 \def\version#1{%
658    \version@tk={#1}\@versiontrue%
659    \ignorespaces%
660 }
661 \def\after#1{%
662    \after@tk={#1}\@aftertrue%
663    \ignorespaces%
664 }
665 \def\correction#1{%
666    \correction@tk={#1}\@correctiontrue%
667    \ignorespaces%
668 }
669 \def\dedication#1{%
670    \dedic@tk={#1}\@dedicationtrue%
671    \ignorespaces%
672 }
673 \def\fidealbum#1{%
674    \fidealbum@tk={#1}\@fidealbumtrue%
675    \ignorespaces%
676 }
677 \def\pieces{%
678    \@ifnextchar[%
679    {\x@pieces}%
680    {\@pieces}%
681 }
682 \def\x@pieces[#1]{%
683    % We should parse the given piececounts
684    \setboolean{cpd@checkPieceCounts}{true}%
```

```
685    \@parseWhiteAndBlackCount#1+\e@list
686    \@pieces%
687 }
688 \def\@parseWhiteAndBlackCount#1+#2+{%
689    \setcounter{cpd@defWhitePieces}{#1}%
690    \setcounter{cpd@defBlackPieces}{#2}%
691    \futurelet\n@xt\cpd@checkNeutral%
692 }
693 \let\cpd@nextproc=\relax%
694 \def\cpd@checkNeutral{%
695    \if\n@xt\relax%
696        \let\cpd@nextproc=\relax%
697    \else%
698        \let\cpd@nextproc=\@parseNeutralCount%
699    \fi%
700    \cpd@nextproc%
701 }
702 \def\@parseNeutralCount#1+{%
703    \setcounter{cpd@defNeutralPieces}{#1}%
704 }
705 \def\@pieces#1{%
706    \pieces@tk={#1}\@piecestrue%
707    \ignorespaces%
708 }
709 \def\fieldtext#1{%
710    \fieldtext@tk={#1}\@fieldtexttrue%
711    \ignorespaces%
712 }
713 \def\nofields#1{%
714    \nofields@tk={#1}\@nofieldstrue%
715    \ignorespaces%
716 }
717 \let\nosquares\nofields
718 \def\gridlines#1{%
719    \gridlines@tk={#1}\@gridlinestrue%
720    \ignorespaces%
721 }
722 \def\fieldframe#1{%
723    \fieldframe@tk={#1}\@fieldframetrue%
724    \ignorespaces%
725 }
726 \def\stipulation#1{%
727    \stipulation@tk={#1}\@stipulationtrue%
728    \ignorespaces%
729 }
730 \def\condition{%
731    \@ifstar{\x@condtrue\@condition}{\@condition}%
732 }
733 \def\@condition#1{%
734    \condition@tk={#1}\@conditiontrue%
735    \ignorespaces%
736 }
737 \def\twins{%
738    \@ifstar{\x@twinstrue\@twins}{\@twins}%
```

```
739 }
740 \def\@twins#1{%
741     \twins@tk={#1}\@twinstrue%
742     \ignorespaces%
743 }
744 \def\remark#1{%
745     \remark@tk={#1}\@remarktrue%
746     \ignorespaces%
747 }
748 \def\piecedefs#1{%
749     \piecedefs@tk={#1}\@piecedefstrue%
750     \ignorespaces%
751 }
752 % \def\@piecedef#1{\csname#1\x@piecedef\endcsname\l@@klist}
753 % \newcommand{\piecedef}[3][ws]{%
754 %     \def\x@piecedef{#2}%
755 %     \let\@action=\@piecedef%
756 %     \hbox{\l@@klist#1\e@list%
757 %     \ = #3}%
758 % }
759 \def\Co#1{%
760     \ifx#1+\@computertrue\computer@tk={+}\fi%
761     \ignorespaces%
762 }
763 \long\def\solution#1{%
764     \sol@tk={#1}\global\s@lutrue%
765     \ignorespaces%
766 }
767 \def\themes#1{%
768     \theme@tk={#1}\@themetrue%
769     \ignorespaces%
770 }
771 \long\def\comment#1{%
772     \comment@tk={#1}\@commenttrue%
773     \ignorespaces%
774 }
775 \long\def\judgement#1{%
776     \judgement@tk={#1}\@judgementtrue%
777     \ignorespaces%
778 }
779 \def\noframe{%
780     \@vframefalse\@hframefalse%
781     \ignorespaces%
782 }
783 \def\noinnerframe{%
784     \@leaveOuterfalse\@vframefalse\@hframefalse%
785     \ignorespaces%
786 }
787 \def\verticalcylinder{%
788     \@vframefalse%
789     \ignorespaces%
790 }
791 \def\horizontalcylinder{%
792     \@hframefalse%
```

```
793     \ignorespaces%
794 }
795 \def\stdgrid{%
796     \@stdgridtrue%
797     \ignorespaces%
798 }
```

\gridchess Here we define some abbreviations and synonyms for other macros.

\magic `799 \let\gridchess=\stdgrid`
\tourn `800 \let\magic=\fieldframe`
\dedic `801 \let\tourn=\tournament`
\stip   `802 \let\dedic=\dedication`
\cond   `803 \let\stip=\stipulation`
\rem   `804 \let\cond=\condition`
\sol   `805 \let\rem=\remark`
        `806 \let\sol=\solution`

```
807 \def\develop{%
808     \@developtrue%
809     \ignorespaces%
810 }
811 \def\showcomputer{%
812     \setboolean{showcomputer}{true}%
813     \ignorespaces%
814 }
815 \def\nocomputer{%
816     \setboolean{showcomputer}{false}%
817     \ignorespaces%
818 }
819 \def\putsol{\immediate\closeout\s@lfd\input\jobname.sol\cl@arsol}
820 \def\widedias{\@widediastrue\diagcenter}
821 \def\nowidedias{\@widediasfalse}
822 \def\normalnames{\normal@namestrue}
823 \def\reversednames{\normal@namesfalse}
824 \def\makeaindex{%
825     \@dia@index%
826     \newindex[thediag]{author}{adx}{and}{Autorenverzeichnis}%
827     \@aindextrue\reversednames%
828 }
829
830 \def\makesindex{%
831     \@dia@index%
832     \newindex[thediag]{source}{sdx}{snd}{Quellenregister}%
833     \@sindextrue%
834 }
835
836 \def\maketindex{%
837     \@dia@index%
838     \newindex[thediag]{theme}{tdx}{tnd}{Themenregister}%
839     \@tindextrue%
840 }
841
842 \def\authorindex{{\let\@idxitem\@aidxitem\printindex[author]}}
843 \def\sourceindex{\printindex[source]}
```

31

```
844 \def\themeindex{\printindex[theme]}
845 \def\DefinePieces#1#2#3{%
846    \@setPieceColor#1\@setPieceSpec#2\@setPieceRotation#3%
847    \loop@rotation%
848    \expandafter\xdef\csname\ds@black\ds@white\ds@bishop\endcsname{%
849       \noexpand\ch@fig{20}%
850    }%
851    \expandafter\xdef\csname\ds@black\ds@black\ds@bishop\endcsname{%
852       \noexpand\ch@fig{32}%
853    }%
854    \expandafter\xdef\csname\ds@white F\endcsname{{\chessfont\ }}
855    \expandafter\xdef\csname\ds@black F\endcsname{{\chessfont\char144}}
856    \expandafter\xdef\csname\ds@white Nr\endcsname{%
857       \noexpand\ch@fig{109}%
858    }%
859    \expandafter\xdef\csname\ds@neutral Nr\endcsname{%
860       \noexpand\ch@fig{115}%
861    }%
862    \expandafter\xdef\csname\ds@black Nr\endcsname{%
863       \noexpand\ch@fig{121}%
864    }%
865    \expandafter\xdef\csname\ds@white Gh\endcsname{%
866       \noexpand\ch@fig{112}%
867    }%
868    \expandafter\xdef\csname\ds@neutral Gh\endcsname{%
869       \noexpand\ch@fig{118}%
870    }%
871    \expandafter\xdef\csname\ds@black Gh\endcsname{%
872       \noexpand\ch@fig{124}%
873    }%
874    \expandafter\xdef\csname\ds@white C\endcsname{%
875       \noexpand\ch@fig{145}%
876    }%
877    \expandafter\xdef\csname\ds@neutral C\endcsname{%
878       \noexpand\ch@fig{151}%
879    }%
880    \expandafter\xdef\csname\ds@black C\endcsname{%
881       \noexpand\ch@fig{157}%
882    }%
883 }
884 \def\Imi{\ch@fig{157}}
885 \def\wE{\ch@fig{216}}
886 \def\nE{\ch@fig{222}}
887 \def\sE{\ch@fig{228}}
888 \def\wX{\ch@fig{180}}
889 \def\nX{\ch@fig{186}}
890 \def\sX{\ch@fig{192}}
891
```

\dia@above   The content of the box above a diagram is controlled by the macro \dia@above.
              It just delegates the information to a couple of other macros, which then generate
              the displayed information above the diagram.

```
892 \newboolean{above@newline}
893 \newcommand{\above@newline}{\ifthenelse{\boolean{above@newline}}{\linebreak}{\setboolean{above@new
```

```
894 \def\dia@above{%
895     \setboolean{above@newline}{false}%
896     \@dia@number%
897     \@dia@authors%
898     \@dia@city%
899     \@dia@after%
900     \@dia@version%
901     \@dia@source%
902     \@dia@correction%
903     \@dia@tournament%
904     \@dia@award%
905     \@dia@dedic%
906     \@dia@fidealbum%
907 }
```

\dia@below   As before, the macro \dia@below creates the displayed information below the
             chessboard - forwarding to a couple of other macros.

```
908 \def\dia@below{%
909     \bgroup%
910     \if@stipulation%
911         \@dia@stipulation%
912     \fi%
913     \ifx@cond\else%
914         \@dia@condition%
915     \fi%
916     \ifx@twins\else%
917         \@dia@twins%
918     \fi%
919     \@dia@piecedefs%
920     \@dia@remark%
921     \ifthenelse{\boolean{@solafterdiagram}}{%
922         \below@newline%
923         \the\sol@tk%
924     }{}%
925     \noindent\hbox{}\newline\hbox{}%
926     \egroup%
927 }
```

\@dia@number   The \@dia@number macro simply creates the diagram number in a single para-
               graph.

```
928 \def\@dia@number{%
929     \ifdi@no\above@newline{\authorfont\thediag}\fi%
930 }
```

\@dia@authors   This macro is used to create the list of authors specified within the \author
                macro inside the diagram environment.   Depending on the TEX-boolean
                normal@names we either simply display the registered author or parse the list
                of authors by using the generic \@parseTokenList macro.

```
931 \def\@dia@authors{%
932     \ifauth@r%
933         \ifnormal@names%
934             \above@newline
935             {\authorfont\the\aut@tk}%
```

```
936        \else%
937            \let\@action=\@dia@writename% Parse the list of authors
938         \@parseTokenlist\aut@tk;
939        \fi%
940    \fi%
941 }

942 \def\@show@city#1;{\if@notfirst\ \slash\ \else\@notfirsttrue\fi#1}
943
944 \def\p@rsecity#1; {\@show@city#1;\l@@klist}
945
946 \def\@dia@city{%
947    \ifthenelse{\boolean{showcity}}{%
948        \if@city%
949            \above@newline%
950            \bgroup%
951            \cityfont\@notfirstfalse%
952            \let\@action=\p@rsecity\@parseTokenlist\city@tk;%
953            \egroup%
954        \fi%
955    }{}%
956 }
957
958 \def\@dia@after{%
959    \if@after%
960        \bgroup%
961        \above@newline%
962        \dedicfont\the\after@tk%
963        \egroup%
964    \fi%
965 }
966
967 \def\@dia@version{%
968    \if@version%
969        \above@newline%
970        \bgroup%
971        \dedicfont\the\version@tk%
972        \egroup%
973    \fi%
974 }
975
976 \def\@dia@date{%
977    \ifnum\from@month>\z@%
978        \if@day%
979            \the\day@tk.\write@month\from@month%
980        \else%
981            \write@month\from@month%
982        \fi%
983        \ifnum\to@month>\z@--\write@month\to@month\fi%
984        \if@day.\else/\fi%
985    \fi%
986    \if@year\the\year@tk\fi%
987 }
988
```

34

```
989 \def\@dia@source{%
990    \if@source%
991       \above@newline%
992       \bgroup%
993       \sourcefont%
994       \if@sourcenr\the\sourcenr@tk\ \fi
995       \the\source@tk%
996       \if@date\ \ \fi\@dia@date%
997       \if@issue\ \ \the\issue@tk\fi%
998       \if@pages ,\ \the\pages@tk\fi%
999       \egroup%
1000   \else%
1001      \if@tournament\else\if@date%
1002         \above@newline%
1003         \bgroup%
1004         \sourcefont%
1005         \@dia@date%
1006         \egroup%
1007      \fi\fi%
1008   \fi%
1009 }
1010
1011 \def\@dia@correction{%
1012   \if@correction%
1013      \above@newline%
1014      \bgroup%
1015      \dedicfont\the\correction@tk%
1016      \egroup%
1017   \fi%
1018 }
1019
1020 \def\@dia@tournament{%
1021   \if@tournament
1022      \above@newline%
1023      \bgroup%
1024      \awardfont%
1025      \the\tournament@tk
1026      \if@source\else\if@date%
1027         \ \ \@dia@date%
1028      \fi\fi%
1029      \egroup%
1030   \fi%
1031 }
1032
1033 \def\@dia@award{%
1034   \if@award%
1035      \above@newline%
1036      \bgroup%
1037      \awardfont\the\award@tk%
1038      \egroup%
1039   \fi%
1040 }
1041
1042 \def\@dia@dedic{%
```

```
1043  \if@dedication%
1044      \above@newline%
1045      \bgroup%
1046      \dedicfont\the\dedic@tk%
1047      \egroup%
1048  \fi%
1049 }
1050
1051 \def\@show@album#1/#2;{#1 FIDE-Album #2}
1052
1053 \def\@dia@fidealbum{%
1054      \if@fidealbum%
1055      \above@newlne%
1056      {\expandafter\@show@album\the\fidealbum@tk;}%
1057      \fi%
1058 }
1059
1060 \def\@twinskip{\ \ }
1061
1062 \def\@dia@stipulation{%
1063      \if@stipulation%
1064      \bgroup%
1065      \stipfont%
1066      \the\stipulation@tk%
1067      \ifx@twins%
1068          \let\below@newline\@twinskip%
1069          \@dia@twins%
1070      \else\ifx@cond%
1071          \let\below@newline\@twinskip%
1072          \@dia@condition%
1073      \fi\fi%
1074      \egroup%
1075      \let\below@newline\newline%
1076  \else%
1077      \x@twinsfalse%
1078      \x@condfalse%
1079      \let\below@newline\relax%
1080  \fi%
1081 }
1082
1083 \def\x@write@twin#1; {%
1084      \hskip1em#1%
1085      \@lefttrue\let\below@newline\newline%
1086      \let\@action\write@twins%
1087      \l@@klist%
1088 }
1089
1090 \def\write@twins#1; {%
1091      \setbox\@test@box=\hbox{#1\if@left~~\fi}%
1092      \ifdim\wd\@test@box>4\sq@width%
1093          \below@newline%
1094          \@lefttrue%
1095          #1%
1096      \else%
```

36

```
1097      \if@left%
1098          \below@newline%
1099      \fi%
1100      \noindent\hbox to 4\sq@width{#1\hfil}%
1101      \if@left%
1102          \@leftfalse%
1103      \else%
1104          \@lefttrue%
1105      \fi%
1106    \fi%
1107    \let\below@newline\newline%
1108    \l@@klist%
1109 }
1110
1111 \def\@dia@twins{%
1112    \if@twins%
1113        \bgroup%
1114        \@lefttrue%
1115        \remfont%
1116        \ifx@twins%
1117            \let\@action=\x@write@twin%
1118        \else%
1119            \let\@action=\write@twins%
1120        \fi%
1121        \@parseTokenlist\twins@tk;%
1122        \egroup%
1123        \let\below@newline\newline%
1124    \fi%
1125 }
1126
1127 \def\@dia@condition{%
1128    \if@condition%
1129        \bgroup%
1130        \@lefttrue%
1131        \remfont%
1132        \ifx@cond%
1133            \let\@action=\x@write@twin%
1134        \else%
1135            \let\@action=\write@twins%
1136        \fi%
1137        \@parseTokenlist\condition@tk;%
1138        \egroup%
1139        \let\below@newline\newline%
1140    \fi%
1141 }
1142
1143 \def\check@piecedef{%
1144    \ifx\next@piecedef\relax%
1145        \let\col@action=\relax%
1146    \else%
1147        \let\col@action=\@@piecedef%
1148    \fi%
1149    \col@action%
1150 }
```

```
1151 \def\@@piecedef#1{\csname#1\x@piecedef\endcsname\parse@piecedef}
1152
1153 \def\parse@piecedef{\futurelet\next@piecedef\check@piecedef}
1154
1155 \def\@piecedef#1#2#3{%
1156     \def\x@piecedef{#2}%
1157     \below@newline%
1158     \hbox{%
1159     \parse@piecedef#1\relax%
1160     \ = #3}%
1161 }
1162
1163 \def\write@piecedefs#1; {%
1164     \@piecedef#1%
1165     \l@@klist%
1166 }
1167
1168 \def\@dia@piecedefs{%
1169     \if@piecedefs%
1170         \bgroup%
1171         \@lefttrue%
1172         \let\below@newline\newline%
1173         \remfont\let\@action=\write@piecedefs%
1174         \@parseTokenlist\piecedefs@tk;%
1175         \egroup%
1176     \fi%
1177 }
1178
1179 \def\@dia@remark{%
1180     \if@remark%
1181         \bgroup%
1182         \@lefttrue%
1183         \remfont\let\@action=\write@twins%
1184         \@parseTokenlist\remark@tk;%
1185         \egroup%
1186         \let\below@newline\newline%
1187     \fi%
1188 }
1189
1190 \def\parse@params#1{%
1191     \ifcase\help@a\relax
1192         \label@tk={#1}\ifx\relax#1\else\@labeltrue\fi\or%
1193         \number@tk={#1}\ifx\relax#1\else\@numbertrue\fi\or%
1194         \aut@tk={#1}\ifx\relax#1\else\auth@rtrue\fi\or%
1195         \city@tk={#1}\ifx\relax#1\else\@citytrue\fi\or%
1196         \sourcenr@tk={#1}\ifx\relax#1\else\@sourcenrtrue\fi\or%
1197         \source@tk={#1}\ifx\relax#1\else\@sourcetrue\fi\or%
1198         \day@tk={#1}\ifx\relax#1\else\@daytrue\fi\or%
1199         \from@month=#1\or%
1200         \to@month=#1\or%
1201         \year@tk={#1}\ifx\relax#1\else\@yeartrue\fi\or%
1202         \issue@tk={#1}\ifx\relax#1\else\@issuetrue\fi\or%
1203         \pages@tk={#1}\ifx\relax#1\else\@pagestrue\fi\or%
1204         \tournament@tk={#1}\ifx\relax#1\else\@tournamenttrue\fi\or%
```

```
1205        \award@tk={#1}\ifx\relax#1\else\@awardtrue\fi\or%
1206        \after@tk={#1}\ifx\relax#1\else\@aftertrue\fi\or%
1207        \version@tk={#1}\ifx\relax#1\else\@versiontrue\fi\or%
1208        \correction@tk={#1}\ifx\relax#1\else\@correctiontrue\fi\or%
1209        \dedic@tk={#1}\ifx\relax#1\else\@dedicationtrue\fi\or%
1210        \theme@tk={#1}\ifx\relax#1\else\@themetrue\fi\or%
1211        \twins@tk={#1}\ifx\relax#1\else\@twinstrue\fi\or%
1212        \computer@tk={#1}\or%
1213        \comment@tk={#1}\ifx\relax#1\else\@commenttrue\fi\or%
1214        \judgement@tk={#1}\ifx\relax#1\else\@judgementtrue\fi\or%
1215        \sol@tk={#1}}%
1216     \fi%
1217     \advance\help@a \@ne%
1218     \l@@klist%
1219 }
1220
1221 \def\split@param#1{%
1222     \@labelfalse\@numberfalse\auth@rfalse\@cityfalse%
1223     \@sourcenrfalse\@sourcefalse\@dayfalse\@yearfalse%
1224     \@issuefalse\@pagesfalse\@tournamentfalse\@awardfalse%
1225     \@afterfalse\@versionfalse\@correctionfalse\@dedicationfalse%
1226     \@themefalse\@twinsfalse\@commentfalse\@judgementfalse%
1227     \help@a=\z@%
1228     \let\@action=\parse@params\l@@klist#1\e@list%
1229 }
1230 \newcommand{\solpar}{\par}
1231 \def\@dia@solution{%
1232     \bgroup%
1233     \parindent\z@%
1234     \parskip\tw@\p@%
1235     {\bfseries%
1236        \noindent\if@label\showlabel{\the\label@tk}\fi%
1237        \the\number@tk) %
1238        \ifauth@r%
1239           \ifnormal@names%
1240              \the\aut@tk%
1241           \else%
1242              {\@notfirstfalse% We are the first one
1243              \def\name@sep{, }%
1244              \let\@action=\@sol@writename%
1245              \@parseTokenlist\aut@tk;}:%
1246           \fi%
1247           \newline%
1248        \fi%
1249     }%
1250     \if@develop\if@judgement\the\judgement@tk\solpar\fi\fi%
1251     \the\sol@tk\solpar%
1252     \if@comment\the\comment@tk\solpar\fi%
1253     \egroup%
1254 }
1255 \grid@width=0.6\p@
1256 \inner@frame=0.6\p@
1257 \outer@frame=1.2\p@
1258 \space@frame=\outer@frame
```

```
1259 \v@frame@dist=\tw@\p@%
1260 \h@frame@dist=\tw@\p@%
1261 \space@frame@dist=\z@
1262 \v@space@dist=1em
1263 \def\@show@figurine{%
1264     \noindent%
1265     \@figurine@number%
1266     \@figurine@author%
1267     \@figurine@city%
1268     \@figurine@after%
1269     \@figurine@correction%
1270     \@figurine@version%
1271     \@figurine@source%
1272     \@figurine@tournament%
1273     \@figurine@award%
1274     \@figurine@dedic%
1275     \@figurine@pieces%
1276     \@figurine@stip%
1277     \@figurine@twins%
1278     \@figurine@conditions%
1279     \@figurine@remarks%
1280     \@figurine@computer%
1281 }
1282 \def\@figurine@number{{\authorfont\thediag)}}
1283
1284 \def\p@rseauthor@figurine#1,#2; {%
1285     \if@notfirst, \else\@notfirsttrue\fi#2 #1%
1286     \l@@klist%
1287 }
1288
1289 \def\@figurine@author{%
1290     {\ifauth@r%
1291         \authorfont\@notfirstfalse%
1292         \let\@action=\p@rseauthor@figurine%
1293         \@parseTokenlist\aut@tk;%
1294         \ \ %
1295     \fi}%
1296 }
1297
1298 \def\@figurine@city{%
1299     {\if@city%
1300         \cityfont\@notfirstfalse%
1301         \let\@action=\p@rsecity\@parseTokenlist\city@tk;%
1302         \ \ \ %
1303     \fi}%
1304 }
1305
1306 \def\@figurine@after{\if@after{\dedicfont\ \ \the\after@tk}\fi}
1307
1308 \def\@figurine@correction{%
1309     \if@correction{\dedicfont\ \ \the\correction@tk}\fi%
1310 }
1311
1312 \def\@figurine@version{%
```

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```
1313    \if@version{\dedicfont\ \ \the\version@tk}\fi%
1314 }
1315
1316 \def\@figurine@source{%
1317    {\if@source%
1318       \sourcefont%
1319       \if@sourcenr\the\sourcenr@tk\ \fi%
1320       \the\source@tk%
1321       \if@year%
1322          \ \ %
1323          \if@day%
1324             \ifnum\from@month>\z@%
1325                \the\day@tk.%
1326                \write@month\from@month%
1327                \ifnum\to@month>\z@%
1328                   -\write@month\to@month%
1329                \fi%
1330                .%
1331             \fi%
1332          \else%
1333             \write@month\the\from@month%
1334             \ifnum\to@month>\z@%
1335                -\write@month\the\to@month%
1336             \fi%
1337             /%
1338          \fi%
1339          \the\year@tk%
1340       \fi%
1341       \if@issue , \the\issue@tk\fi%
1342       \if@pages , \the\pages@tk\fi%
1343    \fi}%
1344 }
1345
1346 \def\@figurine@tournament{%
1347    \if@tournament{\awardfont\ \ \the\tournament@tk}\fi%
1348 }
1349
1350 \def\@figurine@award{%
1351    \if@award{\awardfont\ \ \the\award@tk}\fi%
1352 }
1353
1354 \def\@figurine@dedic{%
1355    \if@dedication{\awardfont\ \ \the\dedic@tk}\fi%
1356 }
1357 \def\show@squares#1\e@list{\ch@fig{\the\help@a}#1, }
1358
1359 \def\@figurine@pieces{%
1360    {\if@pieces%
1361       \let\@action=\p@rsepieces%
1362       \let\piece@job\show@squares%
1363       \@parseTokenlist\pieces@tk,%
1364    \fi}%
1365 }
1366 \def\@figurine@stip{%
```

```
1367     \if@stipulation{\stipfont\ \ \the\stipulation@tk}\fi%
1368 }
1369
1370 \def\@figurine@conditions{%
1371     \if@condition{\remfont\ \ \the\condition@tk}\fi%
1372 }
1373
1374 \def\@figurine@twins{%
1375     \if@twins{\remfont\ \ \the\twins@tk}\fi%
1376 }
1377
1378 \def\@figurine@computer{%
1379     \ifthenelse{\boolean{showcomputer}}{%
1380         \if@computer\ \computerproofedsymbol\fi%
1381     }{}%
1382 }
1383
1384 \def\@figurine@remarks{%
1385     \if@remark{\stipfont\ \ \the\remark@tk}\fi%
1386 }
1387 \def\do@dia@job{\@write@sol\ifvmode\noindent\fi\unhbox\dia@box}
1388 \def\solhead#1{{\split@param{#1}\@dia@solution}}
1389 \def\@write@sol{%
1390     \ifs@lu%
1391         \immediate\write\s@lfd{%
1392             \noexpand\solhead{%
1393                 {\the\label@tk}%
1394                 {\thediag}%
1395                 {\the\aut@tk}%
1396                 {\the\city@tk}%
1397                 {\the\sourcenr@tk}%
1398                 {\the\source@tk}%
1399                 {\the\day@tk}%
1400                 {\the\from@month}%
1401                 {\the\to@month}%
1402                 {\the\year@tk}%
1403                 {\the\issue@tk}%
1404                 {\the\pages@tk}%
1405                 {\the\tournament@tk}%
1406                 {\the\award@tk}%
1407                 {\the\after@tk}%
1408                 {\the\version@tk}%
1409                 {\the\correction@tk}%
1410                 {\the\dedic@tk}%
1411                 {\the\theme@tk}%
1412                 {\the\twins@tk}%
1413                 {\the\computer@tk}%
1414                 {\the\comment@tk}%
1415                 {\the\judgement@tk}%
1416                 {\the\sol@tk}%
1417             } %end of \solhead
1418         }%
1419     \fi
1420 }
```

```
1421  \def\@months#1-#2;{\from@month=#1\to@month=#2\@datetrue}
1422  \def\@dia@writename#1; {\above@newline{\authorfont\@dianame#1; }\l@@klist}
1423  \def\@sol@writename#1; {\sep@names\@dianame#1; \l@@klist}
1424  \def\name@sep{,\ }
1425  \def\sep@names{\if@notfirst\name@sep\else\@notfirsttrue\fi}
1426  \def\@checkshort#1/#2#3;{%
1427      \@shortformtrue%
1428      \ifx#2\e@list\relax%
1429          \@shortformfalse%
1430      \fi%
1431  }
1432  \def\short@christian#1#2-{%
1433      \if@notfirst -\else\@notfirsttrue\fi%
1434      #1.%
1435      \l@@klist%
1436  }
1437
1438  \def\@write@christian#1/#2;{#1}
1439
1440  \def\write@christian#1;{%
1441      \@checkshort#1/\e@list;%
1442      \if@shortform\@write@christian#1;\else#1\fi%
1443  }
1444
1445  \def\@write@short#1/#2;{#2}
1446
1447  \def\write@short#1;{%
1448      \@checkshort#1/\e@list;%
1449      \if@shortform%
1450          \@write@short#1;%
1451      \else%
1452          {\@notfirstfalse\let\@action\short@christian\l@@klist#1-\e@list}%
1453      \fi%
1454  }
1455  \def\@fullname#1, #2; {\write@christian#2; #1}
1456  \def\@sirname#1, #2; {#1}
1457  \def\@short#1, #2; {\write@short#2;\ #1}
1458  \def\@noname#1, #2; {}
1459  \def\@normalname#1; {#1}
1460  \def\space@vertical{\space@verticaltrue}
1461  \def\space@horizontal{\space@verticalfalse}
1462  \def\cl@arsol{\immediate\openout\s@lfd=\jobname.sol}
1463  \def\getc@lor#1{%
1464      \if#1\ds@white%
1465          \help@a\z@\global%
1466          \let\cpd@stepcounterPieces\cpd@stepcounterWhite%
1467      \else\if#1\ds@neutral%
1468          \help@a=6\global%
1469          \let\cpd@stepcounterPieces\cpd@stepcounterNeutral%
1470      \else\if#1\ds@black%
1471          \help@a=12\global%
1472          \let\cpd@stepcounterPieces\cpd@stepcounterBlack%
1473      \else\errmessage{invalid color!}%
1474      \fi\fi\fi%
```

```
1475    \getpi@ce%
1476 }
1477
1478 \def\get@text#1{\text@tk={#1}\read@square}
1479
1480 \def\getpi@ce#1{\if#1B\relax\else
1481    \if#1\ds@knight\advance\help@a\@ne%
1482    \else\if#1\ds@bishop\advance\help@a\tw@%
1483    \else\if#1\ds@rook\advance\help@a\thr@@%
1484    \else\if#1\ds@queen\advance\help@a\f@ur%
1485    \else\if#1\ds@king\advance\help@a 5%
1486    \else\if#1C%
1487       % An imitator should not count for any color.
1488       \let\cpd@stepcounterPieces\relax
1489       \advance\help@a 145%
1490    \else\if#1E%  Equihopper
1491       \advance\help@a 216%
1492    \else\if#1X%  Equihopper senkrecht
1493       \advance\help@a 180%
1494    \else%
1495       \errmessage{invalid piece!}%
1496    \fi\fi\fi\fi\fi\fi\fi\fi\fi%
1497    \futurelet\r@tate\chkr@tate%
1498 }
1499
1500 \def\chkr@tate{%
1501    \if\r@tate \ds@upsidedown\advance\help@a 108\let\nextpr@c=\skipr@t\else%
1502    \if\r@tate \ds@left\advance\help@a 36\let\nextpr@c=\skipr@t\else%
1503    \if\r@tate \ds@right\advance\help@a 72\let\nextpr@c=\skipr@t\else%
1504    \let\nextpr@c\piece@job\fi\fi\fi\nextpr@c%
1505 }
1506 \def\skipr@t#1{\piece@job}
1507 \def\l@@k{\futurelet\whatsnext\parsefi@lds}
1508 \def\parsefi@lds{%
1509    \if\whatsnext\e@list%
1510       \let\nextpr@c\relax%
1511    \else
1512       \let\nextpr@c\read@square%
1513    \fi%
1514    \nextpr@c%
1515 }
1516
1517 \def\set@current@square@index#1#2{%
1518    \setcounter{cpd@current@square@index}{#1+\value{cpd@linesmax}*#2}%
1519 }
1520 \def\set@current@square@value#1{%
1521    \expandafter%
1522       \xdef\csname cpd@square@\roman{cpd@current@square@index}\endcsname{#1}%
1523 }
1524 \def\get@current@square@value{%
1525    \setcounter{cpd@current@square@value}%
1526       {\csname cpd@square@\roman{cpd@current@square@index}\endcsname}%
1527 }
1528 \def\set@piece{%
```

```
1529    \ifnum\pl@ne=\current@plane%
1530        \cpd@stepcounterPieces%
1531        \set@current@square@index\lin@\r@w%
1532        \get@current@square@value%
1533        \ifthenelse{\value{cpd@current@square@value}=\m@ne}
1534          {\set@current@square@value{\the\help@a}}%
1535          {\ifthenelse{\value{cpd@current@square@value}=144}
1536            {\set@current@square@value{\the\help@a+18}}%
1537            {\errmessage{Trying to set a piece to an occupied square}}}%
1538    \fi%
1539    \l@@k%
1540 }
1541 \def\set@nofield, {%
1542    \ifnum\pl@ne=\current@plane%
1543        \set@current@square@index\lin@\r@w%
1544        \get@current@square@value%
1545        \ifthenelse{\value{cpd@current@square@value}=\m@ne}%
1546          {}% This is an empty white square, nothing to do
1547          {\ifthenelse{\value{cpd@current@square@value}=144}%
1548            {\set@current@square@value{\m@ne}}%
1549            {\errmessage{Trying to set a piece to an occupied square}}}%
1550    \fi%
1551    \l@@klist%
1552 }
1553 \def\set@frame, {%
1554    \ifnum\pl@ne=\current@plane%
1555        \@vGrid{\the\lin@}{\the\r@w}\@ne%
1556        \@hGrid{\the\lin@}{\the\r@w}\@ne%
1557        \advance\lin@\@ne%
1558        \@vGrid{\the\lin@}{\the\r@w}\@ne%
1559        \advance\lin@\m@ne\advance\r@w\@ne%
1560        \@hGrid{\the\lin@}{\the\r@w}\@ne%
1561    \fi%
1562    \l@@klist%
1563 }
1564 \def\e@list{\relax}
1565 \def\l@@klist{\futurelet\nextlist\ch@cklst}
1566 \def\ch@cklst{%
1567    \ifx\nextlist\e@list%
1568        \let\nextpr@c=\relax%
1569    \else%
1570        \let\nextpr@c=\@action%
1571    \fi%
1572    \nextpr@c%
1573 }
1574 \def\p@rsepieces#1, {\getc@lor#1\e@list\l@@klist}
1575 \def\p@rsetext#1, {\get@text#1\e@list\l@@klist}
1576 \def\set@text{%
1577    \ifnum\pl@ne=\current@plane%
1578        \raise\r@w\sq@width\hbox to \z@{%
1579            \hskip\lin@\sq@width%
1580            \vbox to \sq@width{\vss%
1581            \hbox to \sq@width{%
1582                \hss%
```

```
1583            {\the\text@tk}%
1584              \hss%
1585          }\vss}%
1586          \hss%
1587        }%
1588    \fi%
1589    \l@@klist%
1590 }
1591 \def\p@rseauthor#1; {\sh@wauthor#1;\l@@klist}
1592 \def\read@square#1#2{%
1593    \lin@=`#1\advance\lin@ by -`a\relax%
1594    \r@w=#2\advance\r@w by \m@ne%
1595    \read@plane%
1596 }
1597 \def\read@plane@normal{\plane@job}
1598
1599 \def\read@plane@stereo{\futurelet\plane@char\get@plane@stereo}
1600
1601 \def\get@plane@stereo{%
1602    \if\plane@char A%
1603        \pl@ne=\@ne\advance\r@w-\tw@\advance\lin@-\tw@%
1604        \let\@plane@job=\skip@plane%
1605    \else\if\plane@char B%
1606        \pl@ne=\tw@\advance\r@w-\tw@\advance\lin@-\tw@%
1607        \let\@plane@job=\skip@plane%
1608    \else\if\plane@char C%
1609        \pl@ne=\thr@@\advance\r@w-\tw@\advance\lin@-\tw@%
1610        \let\@plane@job=\skip@plane%
1611    \else\if\plane@char D%
1612        \pl@ne=\f@ur\advance\r@w-\tw@\advance\lin@-\tw@%
1613        \let\@plane@job=\skip@plane%
1614    \else%
1615        \pl@ne=\z@\let\@plane@job=\plane@job%
1616    \fi\fi\fi\fi%
1617    \@plane@job%
1618 }
1619
1620 \def\skip@plane#1{\plane@job}
1621
1622 \def\read@plane@space#1{\pl@ne=`#1\advance\pl@ne by -`A\relax\plane@job}
1623 \def\@vGrid#1#2#3{%
1624    \raise#2\sq@width\hbox to \z@{%
1625        \hskip#1\sq@width\hskip-.5\grid@width%
1626        \vrule height#3\sq@width width\grid@width\hss%
1627    }%
1628 }
1629
1630 \def\@hGrid#1#2#3{%
1631    \raise#2\sq@width\hbox to \z@{%
1632        \hskip#1\sq@width%
1633        \vrule width#3\sq@width height .5\grid@width depth%
1634        .5\grid@width\hss%
1635    }%
1636 }
```

```
1637 \def\@selGrid#1#2, {%
1638     \ifnum\pl@ne=\current@plane%
1639         \if#1h%
1640             \@hGrid#2%
1641         \else\if#1v%
1642             \@vGrid#2%
1643         \else%
1644             \errmessage{Wrong GridSelector #1}%
1645         \fi\fi%
1646     \fi%
1647     \l@@klist%
1648 }
1649 \def\@stdgrid{%
1650     \setbox\plane@box=\vbox{\hbox{%
1651         \help@a=\tw@%
1652         \loop%
1653             \ifnum\help@a<\lines@max%
1654             \@vGrid{\the\help@a}{0}{\the\rows@max}%
1655             \advance\help@a\tw@%
1656         \repeat%
1657         \help@a=\tw@%
1658         \loop%
1659             \ifnum\help@a<\rows@max%
1660                 \@hGrid{0}{\the\help@a}{\the\lines@max}%
1661                 \advance\help@a\tw@%
1662         \repeat%
1663         \box\plane@box
1664     }}%
1665 }
1666 \def\ds@xlabel#1{%
1667     \label@tk={#1}\@labeltrue%
1668 }
1669
1670 \def\@set@label#1;{\ifds@label\label{#1}\fi}
1671 \def\init@vars{%
1672     \global\s@lufalse
1673     \setboolean{cpd@checkPieceCounts}{false}%
1674     \setcounter{cpd@defWhitePieces}{\z@}%
1675     \setcounter{cpd@defBlackPieces}{\z@}%
1676     \setcounter{cpd@defNeutralPieces}{\z@}%
1677     \setcounter{cpd@whitePieces}{\z@}%
1678     \setcounter{cpd@blackPieces}{\z@}%
1679     \setcounter{cpd@neutralPieces}{\z@}%
1680     \lin@\z@
1681 }
1682
1683 \def\clear@board{%
1684     \ifthenelse{\boolean{allwhite}\and\boolean{switchcolors}}%
1685         {\errmessage{'allwhite' and 'switchcolors' do not make sense used together.}}%
1686         {\@whitefield=\m@ne\@blackfield=144}%
1687     \ifthenelse{\boolean{allwhite}}{\@blackfield=\m@ne}{}%
1688     \ifthenelse{\boolean{switchcolors}}{\@whitefield=144\@blackfield=\m@ne}{}%
1689     \setcounter{cpd@current@row}{0}%
1690     \whiledo{\value{cpd@current@row}<\value{cpd@rowsmax}}{%
```

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```
1691        \setcounter{cpd@current@line}{0}%
1692        \whiledo{\value{cpd@current@line}<\value{cpd@linesmax}}{%
1693            \set@current@square@index{\value{cpd@current@line}}{\value{cpd@current@row}}%
1694            \setcounter{cpd@helper}{\the\current@plane+\value{cpd@current@line}+\value{cpd@current@ro
1695            \ifthenelse{\isodd{\value{cpd@helper}}}%
1696              {\set@current@square@value{\@whitefield}}%
1697              {\set@current@square@value{\@blackfield}}%
1698          \addtocounter{cpd@current@line}{\@ne}%
1699        }%
1700        \addtocounter{cpd@current@row}{\@ne}%
1701    }%
1702 }
1703
1704 \def\put@row#1{%
1705    \lin@\z@%
1706    \help@b=#1%
1707    \advance\help@b\brd@ff%
1708    \hbox{%
1709        \ifthenelse{\boolean{legend}}{{%
1710            \advance\@rows`1%
1711            \llap{\raise .25\sq@width\hbox{\legendfont \char\@rows\ \ }}%
1712        }}{}%
1713        \if@stereo%
1714            \ifnum\current@plane>\z@%
1715                \ifnum\@rows=12%
1716                    \llap{\raise .5\sq@width\hbox{\cpd@boardfont c6\ }}%
1717                \fi%
1718            \fi%
1719        \fi%
1720        \hbox to \z@{\vbox to \sq@width{}}%
1721        \set@current@square@index{\lin@}{#1}%
1722        \loop%
1723            \get@current@square@value%
1724            \ifthenelse{\value{cpd@current@square@value}=\m@ne}%
1725             {\wF}%
1726             {\char\value{cpd@current@square@value}}%
1727            % \ifnum\count\help@b=\m@ne\wF%
1728            % \else\char\count\help@b\fi%
1729            \advance\lin@\@ne%
1730            \addtocounter{cpd@current@square@index}{1}%
1731            % \advance\help@b\@ne%
1732        \ifnum\lin@<\lines@max\repeat%
1733    }%
1734 }
1735 % \def\put@line#1{%
1736 %    \lin@\z@%
1737 %    \help@b=#1%
1738 %    \advance\help@b\brd@ff%
1739 %    \hbox{%
1740 %        \if@stereo%
1741 %            \ifnum\current@plane>\z@%
1742 %                \ifnum\@rows=12%
1743 %                    \llap{\raise .5\sq@width\hbox{\cpd@boardfont c6\ }}%
1744 %                \fi%
```

```
1745 %             \fi%
1746 %         \fi%
1747 %         \hbox to \z@{\vbox to \sq@width{}}%
1748 %         \loop%
1749 %             \ifnum\count\help@b=\m@ne\wF%
1750 %             \else\char\count\help@b\fi%
1751 %             \advance\lin@\@ne\advance\help@b\@ne%
1752 %         \ifnum\lin@<\lines@max\repeat%
1753 %     }%
1754 % }
1755 \def\@parseTokenlist#1#2{\expandafter\l@@klist\the#1#2 \e@list}
1756 \def\@addToPlane#1{%
1757    \setbox\plane@box=\vbox{\hbox{%
1758       \@parseTokenlist#1,%
1759       \box\plane@box%
1760    }}%
1761 }
1762 \def\put@plane{%
1763    % We might want gridchess
1764       \if@stdgrid%
1765          \@stdgrid%
1766       \fi%
1767    % Let us first set the fieldframes
1768    \if@fieldframe%
1769       \let\@action\read@square%
1770       \let\plane@job\set@frame%
1771       \@addToPlane\fieldframe@tk%
1772    \fi%
1773    % Now we set text to all squares which are given using \fieldtext
1774    \if@fieldtext%
1775       \let\@action\p@rsetext%
1776       \let\plane@job\set@text%
1777       \@addToPlane\fieldtext@tk%
1778    \fi%
1779    % Then we should add the gridlines
1780    \if@gridlines%
1781       \let\@action\read@plane%
1782       \let\plane@job\@selGrid%
1783       \@addToPlane\gridlines@tk%
1784    \else%
1785       \if@stereo%
1786          \stereo@center%
1787       \fi%
1788    \fi%
1789    % In an 'allwhite' diagram we display dotted lines
1790    \ifthenelse{\boolean{allwhite}}{%
1791       \setbox\plane@box=\vbox{\hbox{%
1792          \psset{unit=\sq@width,linewidth=.4pt,linestyle=dotted,dotsep=.125}%
1793          \setcounter{field@border}{1}%
1794          \whiledo{\value{field@border}<\lines@max}{%
1795             \psline(\value{field@border},0)(\value{field@border},\rows@max)%
1796             \addtocounter{field@border}{\@ne}%
1797          }%
1798          \setcounter{field@border}{1}%
```

```
1799          \whiledo{\value{field@border}<\rows@max}{%
1800            \psline(0,\value{field@border})(\lines@max,\value{field@border})%
1801            \addtocounter{field@border}{\@ne}%
1802          }%
1803          \box\plane@box%
1804        }}%
1805    }{}%
1806    % Now we should clear the board
1807    \clear@board%
1808    % Let us now parse the list of pieces
1809    \if@pieces%
1810      \let\@action\p@rsepieces%
1811      \let\piece@job\l@@k\let\plane@job\set@piece%
1812      \@parseTokenlist\pieces@tk,%
1813    \fi%
1814    % Now we clear all fields, which are given using \nofields
1815    \if@nofields%
1816      \let\@action\read@square%
1817      \let\plane@job\set@nofield%
1818      \@parseTokenlist\nofields@tk,%
1819    \fi%
1820    % Now we can put the pieces to the board
1821    \global\setbox\plane@box=\hbox{%
1822      \vbox{\rlap{\box\plane@box}}%
1823      \vbox{%
1824        \chessfont%
1825        \baselineskip=\z@\lineskip=\z@%
1826        \@rows=\rows@max%
1827        % \multiply\@rows by \lines@max%
1828        \loop%
1829          \advance\@rows \m@ne%
1830          \put@row\@rows%
1831        \ifnum\@rows>\z@\repeat%
1832      }%
1833      % Put a legend if wanted
1834      \ifthenelse{\boolean{legend}}{%
1835        \vbox to \z@{%
1836          \vbox to \z@{\vss}%
1837          \llap{\hbox{\hspace*{\inner@frame}%
1838            \lin@\z@%
1839            \loop%
1840              \hbox to \sq@width{\hfill{\advance\lin@`a\legendfont\char\lin@}\hfill}%
1841              \advance\lin@\@ne%
1842            \ifnum\lin@<\lines@max\repeat%
1843          }}\vss}%
1844      }{}%
1845    }%
1846 }
1847 \def\put@sqs@normal{%
1848    \put@plane%
1849    \setbox\sq@box=\hbox{%
1850      \inner@henbox{\box\plane@box}%
1851    }%
1852 }
```

```
1853 \def\put@sqs@stereo{%
1854    \setbox\sq@box=\hbox{\hfil\vbox{%
1855        \current@plane=5%
1856        \vskip\v@space@dist%
1857        \loop%
1858            \advance\current@plane\m@ne%
1859            \ifnum\current@plane=\z@%
1860                \lines@max=\@ight%
1861                \rows@max=\@ight%
1862            \else%
1863                \lines@max=\f@ur%
1864                \rows@max=\f@ur%
1865            \fi%
1866            % Now we should clear the board
1867            \begingroup% We need this for inner loops!
1868                \clear@board%
1869                \put@plane%
1870            \endgroup%
1871            \hbox to \bd@width{%
1872                \hfil%
1873                \inner@henbox{\box\plane@box}%
1874                \ifcase\current@plane\or%
1875                    \rlap{{\cpd@boardfont\ A}}\or%
1876                    \rlap{{\cpd@boardfont\ B}}\or%
1877                    \rlap{{\cpd@boardfont\ C}}\or%
1878                    \rlap{{\cpd@boardfont\ D}}%
1879                \fi%
1880                \hfil%
1881            }%
1882            \vskip\v@space@dist%
1883        \ifnum\z@<\current@plane\repeat%
1884    }\hfil}%
1885 }
1886
1887 \def\stereo@center{%
1888    \ifnum\current@plane=\z@%
1889        \setbox\plane@box=\vbox{\hbox{%
1890        \@hGrid\tw@\tw@\f@ur\@hGrid\tw@ 6\f@ur%
1891        \@vGrid\tw@\tw@\f@ur\@vGrid6\tw@\f@ur%
1892        \box\plane@box%
1893    }}%
1894    \fi%
1895 }
1896 \def\put@sqs@space@vertical{%
1897    \setbox\sq@box=\hbox{\hfil\vbox{%
1898        \current@plane=\planes@max%
1899        \vskip\v@space@dist%
1900        \loop%
1901            \advance\current@plane\m@ne%
1902            % Now we should clear the board
1903            \begingroup% We use inner loops!
1904            \clear@board%
1905            \put@plane%
1906            \hbox to \bd@width{%
```

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```
1907            \inner@henbox{\box\plane@box}%
1908            \advance\current@plane`A%
1909            \rlap{{\cpd@boardfont\ \char\current@plane}}%
1910        }%
1911        \endgroup%
1912        \vskip\v@space@dist%
1913      \ifnum\z@<\current@plane\repeat%
1914    }\hfil}%
1915 }
1916
1917 \def\put@sqs@space@horizontal{%
1918    \setbox\sq@box=\hbox{%
1919        \current@plane=\z@%
1920        \hskip\h@space@dist%
1921        \loop%
1922            % Now we should clear the board
1923            \begingroup% We use inner loops!
1924            \clear@board%
1925            \put@plane%
1926            \hbox to \bd@width{%
1927                \inner@henbox{\box\plane@box}%
1928                \advance\current@plane`A%
1929                \rlap{{\cpd@boardfont\ \char\current@plane}}%
1930            }%
1931            \endgroup%
1932            \hskip\h@space@dist%
1933            \advance\current@plane\@ne%
1934        \ifnum\planes@max>\current@plane%
1935        \repeat%
1936    }%
1937 }
1938
1939 \def\put@sqs@space{%
1940    \ifspace@vertical%
1941        \put@sqs@space@vertical%
1942    \else%
1943        \put@sqs@space@horizontal%
1944    \fi%
1945 }
1946 \def\@inner@vframe{%
1947    \if@vframe%
1948        \vrule width \inner@frame%
1949    \else%
1950        \hskip\inner@frame%
1951    \fi%
1952 }
1953
1954 \def\@inner@hframe{%
1955    \if@hframe%
1956        \hrule height \inner@frame%
1957    \else%
1958        \vskip\inner@frame%
1959    \fi%
1960 }
```

```
1961 \def\inner@v@frame@rule{%
1962     \if@stereo%
1963         \@inner@vframe%
1964     \else\if@space%
1965         \@inner@vframe%
1966     \else\if@leaveOuter%
1967         \vrule width \inner@frame%
1968     \else%
1969         \@inner@vframe%
1970     \fi\fi\fi%
1971 }
1972
1973 \def\inner@h@frame@rule{%
1974     \if@stereo%
1975         \@inner@hframe%
1976     \else\if@space%
1977         \@inner@hframe%
1978     \else\if@leaveOuter%
1979         \hrule height \inner@frame%
1980     \else%
1981         \@inner@hframe%
1982     \fi\fi\fi%
1983 }
1984
1985 \def\inner@henbox#1{%
1986     \hbox{%
1987         \inner@v@frame@rule%
1988         \vbox{\inner@h@frame@rule#1\inner@h@frame@rule}%
1989         \inner@v@frame@rule%
1990     }%
1991 }
1992 \def\@outer@vrule{\vrule width \outer@frame}
1993
1994 \def\@outer@hrule{\hrule height \outer@frame}
1995 \def\outer@v@frame@rule{%
1996     \if@stereo%
1997         \@outer@vrule%
1998     \else\if@space%
1999         \@outer@vrule%
2000     \else\if@leaveOuter%
2001         \if@vframe\@outer@vrule\else\hskip\outer@frame\fi%
2002     \else%
2003         \@outer@vrule%
2004     \fi\fi\fi%
2005 }
2006
2007 \def\outer@h@frame@rule{%
2008     \if@stereo%
2009         \@outer@hrule%
2010     \else\if@space%
2011         \@outer@hrule%
2012     \else\if@leaveOuter%
2013         \if@hframe\@outer@hrule\else\vskip\outer@frame\fi%
2014     \else%
```

```
2015        \@outer@hrule%
2016    \fi\fi\fi%
2017 }
2018
2019 \def\outer@henbox#1{%
2020    \outer@h@frame@rule%
2021    \hbox{%
2022        \outer@v@frame@rule%
2023        \ifspace@vertical%
2024            \hskip\h@frame@dist%
2025        \fi%
2026        \vbox{%
2027            \ifspace@vertical%
2028                \vskip\v@frame@dist%
2029            \else%
2030                \vskip\v@space@dist%
2031            \fi%
2032            #1%
2033            \ifspace@vertical%
2034                \vskip\v@frame@dist%
2035            \else%
2036                \vskip\v@space@dist%
2037            \fi%
2038        }%
2039        \ifspace@vertical%
2040            \hskip\h@frame@dist%
2041        \fi%
2042        \outer@v@frame@rule%
2043    }%
2044    \outer@h@frame@rule%
2045 }
2046 \def\ch@fig#1{%
2047    \ifvmode\noindent\fi%
2048    \hbox{\chtextfont\lower.1\fontdimen\tw@\chtextfont\hbox{\char#1}}%
2049 }
2050 \def\@dia@index{%
2051    \@ifundefined{newindex}%
2052    {\errmessage{You should add documentstyle-option 'index'}}{}%
2053 }
2054
2055 \def\showlabel#1{%
2056    \if@develop%
2057        \raise1ex\hbox{\labelfont#1}\penalty\exhyphenpenalty%
2058    \fi%
2059 }
2060
2061 \def\@aidxitem#1, #2, #3{%
2062    \par\medskip#1, \write@christian#2; \dotfill #3%
2063 }
2064
2065 \def\dia@index#1\@sep#2[#3]{\index[#3]{#2|showlabel{#1}}}
2066
2067 \def\parse@aindex#1; {%
2068    \expandafter\dia@index\the\label@tk\@sep#1[author]\l@@klist%
```

```
2069 }
2070
2071 \def\@aindex{%
2072     \if@aindex%
2073         \ifnormal@names%
2074             \errmessage{Cannot create index entries with normalnames}%
2075         \else\ifauth@r%
2076             \let\@action=\parse@aindex\@parseTokenlist\aut@tk;%
2077         \fi\fi%
2078     \fi%
2079 }
2080
2081 \def\x@sindex#1\@sep{\expandafter\dia@index\the\label@tk\@sep#1[source]}
2082
2083 \def\@sindex{%
2084     \if@sindex\if@source%
2085         \expandafter\x@sindex\the\source@tk\@sep%
2086     \fi\fi%
2087 }
2088
2089 \def\parse@tindex#1, {%
2090     \expandafter\dia@index\the\label@tk\@sep#1[theme]\l@@klist%
2091 }
2092
2093 \def\@tindex{%
2094     \if@tindex\if@theme%
2095         \let\@action=\parse@tindex\@parseTokenlist\theme@tk,%
2096     \fi\fi%
2097 }
2098 \def\@setPieceColor#1#2#3{%
2099     \gdef\ds@white{#1}\gdef\ds@black{#2}\gdef\ds@neutral{#3}%
2100 }
2101
2102 \def\@setPieceSpec#1#2#3#4#5#6{%
2103     \gdef\ds@king{#1}\gdef\ds@queen{#2}\gdef\ds@rook{#3}%
2104     \gdef\ds@bishop{#4}\gdef\ds@knight{#5}\gdef\ds@pawn{#6}%
2105 }
2106
2107 \def\@setPieceRotation#1#2#3{%
2108     \gdef\ds@left{#1}\gdef\ds@right{#2}\gdef\ds@upsidedown{#3}%
2109 }
2110 \def\loop@rotation{%
2111     \bgroup%
2112         \n@cnt\z@%
2113         \help@a\z@%
2114         \loop%
2115             \ifcase\n@cnt%
2116                 \def\@theRotation{}%
2117             \or%
2118                 \def\@theRotation{\ds@left}%
2119             \or%
2120                 \def\@theRotation{\ds@right}%
2121             \or%
2122                 \def\@theRotation{\ds@upsidedown}%
```

55

```
2123        \fi%
2124        \loop@color%
2125        \advance\n@cnt\@ne%
2126        \advance\help@a by 36\relax%
2127      \ifnum\n@cnt<\f@ur\repeat%
2128    \egroup%
2129 }
2130
2131 \def\loop@color{%
2132    \bgroup%
2133      \w@cnt\z@%
2134      \loop%
2135        \ifcase\w@cnt%
2136          \def\@theColor{\ds@white}%
2137        \or%
2138          \def\@theColor{\ds@neutral}%
2139        \or%
2140          \def\@theColor{\ds@black}%
2141        \fi%
2142        \loop@piece%
2143        \advance\w@cnt\@ne%
2144        \advance\help@a by 6%
2145      \ifnum\w@cnt<\thr@@\repeat%
2146    \egroup%
2147 }
2148
2149 \def\loop@piece{%
2150    \bgroup%
2151      \b@cnt\z@%
2152      \loop%
2153        \ifcase\b@cnt%
2154          \def\@thePiece{\ds@pawn}%
2155        \or%
2156          \def\@thePiece{\ds@knight}%
2157        \or%
2158          \def\@thePiece{\ds@bishop}%
2159        \or%
2160          \def\@thePiece{\ds@rook}%
2161        \or%
2162          \def\@thePiece{\ds@queen}%
2163        \or%
2164          \def\@thePiece{\ds@king}%
2165        \fi%
2166        \expandafter\xdef\csname%
2167        \@theColor\@thePiece\@theRotation\endcsname{%
2168          \noexpand\ch@fig{\the\help@a}%
2169        }
2170        \advance\b@cnt\@ne%
2171        \advance\help@a by \@ne%
2172      \ifnum\b@cnt<6\repeat%
2173    \egroup%
2174 }
2175 \elchfont\@fselch
2176
```

```
2177  \defaultelchfont%
2178  \diagnum{\@ne}
2179  %% \figcnttrue
2180  \setboolean{piececounter}{true}
2181  \def\@dianame{\@fullname}
2182  \def\@solname{\@fullname}
2183  \space@verticaltrue
2184  \diagnumbering{arabic}
2185  \def\write@month{\@arabic}%
2186  \diagleft
2187  \cl@arsol
2188  \let\orig@author=\author
2189  \let\orig@day=\day
2190  \let\orig@month=\month
2191  \let\orig@year=\year
2192  \let\orig@label=\label
2193  \DefinePieces{wsn}{KDTLSB}{LRU}
2194  \newdimen\normalboardwidth
2195  \def\setboardwidth{%
2196      \normalboardwidth=\@ight\fontdimen\tw@\chessfont%
2197      \advance\normalboardwidth\tw@\inner@frame%
2198      \advance\normalboardwidth\tw@\h@frame@dist%
2199      \advance\normalboardwidth\tw@\outer@frame%
2200  }
2201
2202  \setboardwidth
2203
2204  ⟨/style⟩
```

Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

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Change History

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