

# Babel support for the German language (traditional orthography)

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## Abstract

This manual documents the babel language definition file `germanb.ldf` for German (traditional orthography). The file is part of the babel-german bundle.

## 1 Aim and usage

The file `germanb.ldf` provides the babel package with all language definition macros (language specific strings and settings) for the German language, including the Austrian and Swiss varieties of German. Furthermore, it assures that the correct hyphenation patterns for the respective language or variety are used.<sup>1</sup> The file adheres to the traditional (1901–1996) orthography. For reformed (post-1996) German orthography support, please refer to the complementary `ngermanb.ldf` file.

In order to use the language definitions provided here, you need to use the babel package and pass the respective language name as an option, either of

- `\usepackage[german]{babel}`
- `\usepackage[austrian]{babel}`
- `\usepackage[swissgerman]{babel}`

Please consult the babel manual [2] for details.

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<sup>1</sup>The file `germanb.ldf` started as a re-implementation of the package `german.sty` (v.2.5b), which was originally developed by Hubert Partl (cf. [3]) and later maintained by Bernd Raichle (cf. [4]). The re-implementation was done by Johannes Braams.

## 2 Shorthands

For all three varieties of German, the character `"` is made active in order to provide some shorthand macros. One purpose of these shorthands is to get control over a peculiarity of traditional German spelling: some consonantal character combinations change in the context of hyphenations. Furthermore, the shorthands provide access to some frequently used special characters as well as some further possibilities to control hyphenation, to break lines and to deal with ligatures. Table 1 provides an overview of the shorthands that are provided by `germanb.ldf`.

<code>"a</code>	umlaut ä (shorthand for <code>\"a</code> ). Similar shorthands are available for all other lower- and uppercase vowels (umlauts: <code>"a</code> , <code>"o</code> , <code>"u</code> , <code>"A</code> , <code>"O</code> , <code>"U</code> , as well as tremata: <code>"e</code> , <code>"i</code> , <code>"E</code> , <code>"I</code> ).
<code>"s</code>	German ß (shorthand for <code>\ss{}</code> ).
<code>"z</code>	German ß (shorthand for <code>\ss{}</code> ).
<code>"ck</code>	for <code>ck</code> to be hyphenated as <code>k-k</code> .
<code>"ff</code>	for <code>ff</code> to be hyphenated as <code>ff-f</code> , this is also implemented for <code>l</code> , <code>m</code> , <code>n</code> , <code>p</code> , <code>r</code> and <code>t</code> .
<code>"S</code>	<code>SS</code> ( <code>\uppercase{"s}</code> ), since ß must be written as <code>SS</code> – or <code>SZ</code> , see below – in uppercase writing).
<code>"Z</code>	<code>SZ</code> ( <code>\uppercase{"z}</code> ), since ß must be written as <code>SZ</code> – or <code>SS</code> , see above – in uppercase writing).
<code>" </code>	disable ligature at this position (e. g. <code>Auf" lage</code> ).
<code>"-</code>	an additional breakpoint that does still allow for hyphenation at the breakpoints preset in the hyphenation patterns (as opposed to <code>\-</code> ).
<code>""</code>	a breakpoint that does not output a hyphen sign if the line break is performed (useful for compound words with hyphen, e. g. <code>(Un-)"Sinn</code> ).
<code>"~</code>	a compound word mark without a breakpoint. Useful for cases such as <code>bergauf</code> und <code>"~ab</code> .
<code>"=</code>	a compound word mark with a breakpoint, allowing for hyphenation at the other points preset in the hyphenation patterns (as opposed to plain <code>-</code> ).
<code>"‘</code>	German left double quotes (i. e. <code>„</code> ).
<code>"’</code>	German right double quotes (i. e. <code>”</code> ).
<code>"&lt;</code>	French/Swiss left double quotes (i. e. <code>«</code> ).
<code>"&gt;</code>	French/Swiss right double quotes (i. e. <code>»</code> ).

Table 1: Shorthands provided by `germanb.ldf`

Table 2 lists some macros for quotation marks that might be used as an alternative to the quotation mark shorthands provided by `germanb.ldf`.

<code>\glqq</code>	German left double quotes (i. e. „).
<code>\grqq</code>	German right double quotes (i. e. ”).
<code>\glq</code>	German left single quotes (i. e. ,).
<code>\grq</code>	German right single quotes (i. e. ‘).
<code>\flqq</code>	French/Swiss left double quotes (i. e. «).
<code>\frqq</code>	French/Swiss right double quotes (i. e. »).
<code>\flq</code>	French/Swiss left single quotes (i. e. ‹).
<code>\frq</code>	French/Swiss right single quotes (i. e. ›).
<code>\dq</code>	the original quotation mark character (i. e. ").

Table 2: Alternative commands for quotation marks (provided by babel)

## 3 Implementation

### 3.1 General settings

If `germanb. ldf` is read via the babel option `germanb`, we make it behave as if `german` was specified.

```

1 \def\bbbl@tempa{germanb}
2 \ifx\CurrentOption\bbbl@tempa
3   \def\CurrentOption{german}
4   \ifx\l@german\@undefined
5     \@nopatterns{German}
6     \adddialect\l@german0
7   \fi
8   \let\l@germanb\l@german
9   \AtBeginDocument{%
10    \let\captionsgermanb\captionsgerman
11    \let\dategermanb\dategerman
12    \let\extragermanb\extragerman
13    \let\noextragermanb\noextragerman
14  }
15 \fi

```

The macro `\LdfInit` takes care of preventing that this file is loaded more than once, checking the category code of the `@` sign, etc.

```

16 \LdfInit\CurrentOption{captions\CurrentOption}

```

If `germanb. ldf` is read as an option, i.e. via `\usepackage` command, `german` could be an ‘unknown’ language, so we have to make it known. We check for the existence of `\l@german` to see whether we have to do something here.

```

17 \ifx\l@german\@undefined
18   \@nopatterns{German}
19   \adddialect\l@german0
20 \fi

```

We set `austrian` as a dialect of `german`, since the Austrian variety uses the same hyphenation patterns as Germany's Standard German.

```
21 \adddialect\l@austrian\l@german
```

For the Swiss variety, we attempt to load the specific `swissgerman` hyphenation patterns and fall back to `german` if those are not available.

```
22 \def\bbl@tempa{swissgerman}
23 \ifx\CurrentOption\bbl@tempa
24   \ifx\l@swissgerman\@undefined
25     \ifx\l@german\@undefined
26       \nopatterns{swissgerman and german}
27       \adddialect\l@swissgerman0
28     \else
29       \nopatterns{swissgerman}
30       \adddialect\l@swissgerman\l@german
31   \fi
32 \fi
33 \fi
```

### 3.2 Language-specific strings (captions)

The next step consists of defining macros that provide language specific strings and settings.

`\captionsgerman` The macro `\captionsgerman` defines all strings used in the four standard document classes provided with L<sup>A</sup>T<sub>E</sub>X for German.

```
34 \@namedef{captionsgerman}{%
35   \def\prefacename{Vorwort}%
36   \def\refname{Literatur}%
37   \def\abstractname{Zusammenfassung}%
38   \def\bibName{Literaturverzeichnis}%
39   \def\chaptername{Kapitel}%
40   \def\appendixname{Anhang}%
41   \def\contentsname{Inhaltsverzeichnis}%   % oder nur: Inhalt
42   \def\listfigurename{Abbildungsverzeichnis}%
43   \def\listtablename{Tabellenverzeichnis}%
44   \def\indexname{Index}%
45   \def\figurename{Abbildung}%
46   \def\tablename{Tabelle}%                 % oder: Tafel
47   \def\partname{Teil}%
48   \def\enclname{Anlage(n)}%
49   \def\ccname{Verteiler}%                  % oder: Kopien an
50   \def\headtoname{An}%
51   \def\pagename{Seite}%
52   \def\seename{siehe}%
53   \def\alsoname{siehe auch}%
54   \def\proofname{Beweis}%
```

```
55 \def\glossaryname{Glossar}%
56 }
```

`\captionsaustrian` The macro `\captionsgerman`, but redefines some strings following Austrian conventions (for the respective variants, cf. [1]).

```
57 \@namedef{captionsaustrian}{%
58 \@nameuse{captionsgerman}
59 \def\enclname{Beilage(n)}%
60 }
```

`\captionsswissgerman` The macro `\captionsgerman`, but redefines some strings following Swiss conventions (for the respective variants, cf. [1]).

```
61 \@namedef{captionsswissgerman}{%
62 \@nameuse{captionsgerman}
63 \def\enclname{Beilage(n)}%
64 }
```

### 3.3 Date localizations

`\dategerman` The macro `\dategerman` redefines the command `\today` to produce German dates.

```
65 \def\month@german{\ifcase\month\or
66 Januar\or Februar\or M"arz\or April\or Mai\or Juni\or
67 Juli\or August\or September\or Oktober\or November\or Dezember\fi}
68 \def\dategerman{\def\today{\number\day.\~\month@german
69 \space\number\year}}
```

`\dateswissgerman` The macro `\dateswissgerman` does the same for Swiss German dates. The result is identical to German.

```
70 \def\dateswissgerman{\def\today{\number\day.\~\month@german
71 \space\number\year}}
```

`\dateaustrian` The macro `\dateaustrian` redefines the command `\today` to produce Austrian versions of the German dates. Here, the naming of January („Jänner“) differs from the other German varieties.

```
72 \def\dateaustrian{\def\today{\number\day.\~\ifnum1=\month
73 J"anner\else \month@german\fi \space\number\year}}
```

### 3.4 Extras

`\extrasgerman`, `\extrasaustrian` and `\extrasswissgerman`, respectively, will perform all the extra definitions needed for the German language or the respective variety. The macro `\noextrasgerman` is used to cancel the actions of `\extrasgerman`. `\noextrasaustrian` and `\noextrasswissgerman` behave analogously.

For all German varieties, the character " is made active. This is done once, later on its definition may vary.

```
74 \initiate@active@char{"}
75 \@namedef{extras\CurrentOption}{%
76 \languageshorthands{german}}
77 \expandafter\addto\csname extras\CurrentOption\endcsname{%
78 \bbl@activate{"}}
```

Turn the shorthands off again outside of German.

```
79 \expandafter\addto\csname noextras\CurrentOption\endcsname{%
80 \bbl@deactivate{"}}
```

In order for T<sub>E</sub>X to be able to hyphenate German words which contain ‘ß’ (in the OT1 position <sup>^</sup>Y) we have to give the character a nonzero \lccode (see Appendix H, the T<sub>E</sub>Xbook).

```
81 \expandafter\addto\csname extras\CurrentOption\endcsname{%
82 \babel@savevariable{\lccode25}%
83 \lccode25=25}
```

The umlaut accent macro \" is changed to lower the umlaut dots. The redefinition is done with the help of \umlautlow.

```
84 \expandafter\addto\csname extras\CurrentOption\endcsname{%
85 \babel@save\"umlautlow}
```

```
86 \expandafter\addto\csname noextras\CurrentOption\endcsname{%
87 \umlauthigh}
```

The German hyphenation patterns can be used with \lefthyphenmin and \righthyphenmin set to 2.

```
88 \providehyphenmins{\CurrentOption}{\tw@\tw@}
```

For German texts we need to assure that \frenchspacing is turned on.

```
89 \expandafter\addto\csname extras\CurrentOption\endcsname{%
90 \bbl@frenchspacing}
91 \expandafter\addto\csname noextras\CurrentOption\endcsname{%
92 \bbl@nonfrenchspacing}
```

### 3.5 Active characters, macros & shorthands

The following code is necessary because we need an extra active character. This character is then used as indicated in table 1.

In order to be able to define the function of ", we first define a couple of ‘support’ macros.

\dq We save the original double quotation mark character in \dq to keep it available, the math accent \" can now be typed as ".

```
93 \begingroup \catcode\'"12
```

```

94 \def\x{\endgroup
95 \def\@SS{\mathchar"7019 }
96 \def\dq{"}}
97 \x

```

Now we can define the doublequote shorthands: the umlauts,

```

98 \declare@shorthand{german}{a}{\textormath{\{a\allowhyphens}{\ddot a}}
99 \declare@shorthand{german}{o}{\textormath{\{o\allowhyphens}{\ddot o}}
100 \declare@shorthand{german}{u}{\textormath{\{u\allowhyphens}{\ddot u}}
101 \declare@shorthand{german}{A}{\textormath{\{A\allowhyphens}{\ddot A}}
102 \declare@shorthand{german}{O}{\textormath{\{O\allowhyphens}{\ddot O}}
103 \declare@shorthand{german}{U}{\textormath{\{U\allowhyphens}{\ddot U}}

```

tremata,

```

104 \declare@shorthand{german}{e}{\textormath{\{e\}{\ddot e}}
105 \declare@shorthand{german}{E}{\textormath{\{E\}{\ddot E}}
106 \declare@shorthand{german}{i}{\textormath{\{\i\}}%
107 \ddot\imath}}
108 \declare@shorthand{german}{I}{\textormath{\{I\}{\ddot I}}

```

German ß,

```

109 \declare@shorthand{german}{s}{\textormath{\ss}{\@SS}}
110 \declare@shorthand{german}{S}{\SS}
111 \declare@shorthand{german}{z}{\textormath{\ss}{\@SS}}
112 \declare@shorthand{german}{Z}{SZ}

```

German and French/Swiss quotation marks,

```

113 \declare@shorthand{german}{" '}{\glqq}
114 \declare@shorthand{german}{" '}{\grqq}
115 \declare@shorthand{german}{"<}{\flqq}
116 \declare@shorthand{german}{">}{\frqq}

```

discretionary commands

```

117 \declare@shorthand{german}{c}{\textormath{\bbl@disc ck}{c}}
118 \declare@shorthand{german}{C}{\textormath{\bbl@disc CK}{C}}
119 \declare@shorthand{german}{F}{\textormath{\bbl@disc F{FF}}{F}}
120 \declare@shorthand{german}{l}{\textormath{\bbl@disc l{ll}}{l}}
121 \declare@shorthand{german}{L}{\textormath{\bbl@disc L{LL}}{L}}
122 \declare@shorthand{german}{m}{\textormath{\bbl@disc m{mm}}{m}}
123 \declare@shorthand{german}{M}{\textormath{\bbl@disc M{MM}}{M}}
124 \declare@shorthand{german}{n}{\textormath{\bbl@disc n{nn}}{n}}
125 \declare@shorthand{german}{N}{\textormath{\bbl@disc N{NN}}{N}}
126 \declare@shorthand{german}{p}{\textormath{\bbl@disc p{pp}}{p}}
127 \declare@shorthand{german}{P}{\textormath{\bbl@disc P{PP}}{P}}
128 \declare@shorthand{german}{r}{\textormath{\bbl@disc r{rr}}{r}}
129 \declare@shorthand{german}{R}{\textormath{\bbl@disc R{RR}}{R}}
130 \declare@shorthand{german}{t}{\textormath{\bbl@disc t{tt}}{t}}
131 \declare@shorthand{german}{T}{\textormath{\bbl@disc T{TT}}{T}}

```

(we need to treat "f a bit differently in order to preserve the ff-ligature)

```
132 \declare@shorthand{german}{"f}{\textormath{\bbl@discff}{f}}
133 \def\bbl@discff{\penalty\@M
134 \afterassignment\bbl@insertff \let\bbl@nextff= }
135 \def\bbl@insertff{%
136 \if f\bbl@nextff
137 \expandafter\@firstoftwo\else\expandafter\@secondoftwo\fi
138 {\relax\discretionary{ff-}{f}{ff}\allowhyphens}{f\bbl@nextff}}
139 \let\bbl@nextff=f
```

and some additional commands (hyphenation and ligature control):

```
140 \declare@shorthand{german}{"-}{\nobreak\-\bbl@allowhyphens}
141 \declare@shorthand{german}{"}{|}{%
142 \textormath{\penalty\@M\discretionary{-}{\kern.03em}%
143 \allowhyphens}{}}
144 \declare@shorthand{german}{"}{\hskip\z@skip}
145 \declare@shorthand{german}{"~}{\textormath{\leavevmode\hbox{-}{-}}{-}}
146 \declare@shorthand{german}{"=}{\penalty\@M-\hskip\z@skip}
```

`\mdqon` All that's left to do now is to define a couple of commands for reasons of compatibility with `german.sty`.

```
\ck 147 \def\mdqon{\shorthandon{}}
148 \def\mdqoff{\shorthandoff{}}
149 \def\ck{\allowhyphens\discretionary{k-}{k}{ck}\allowhyphens}
```

The macro `\ldf@finish` takes care of looking for a configuration file, setting the main language to be switched on at `\begin{document}` and resetting the category code of `@` to its original value.

```
150 \ldf@finish\CurrentOption
```

### 3.6 austrian.ldf, german.ldf and swissgerman.ldf

Babel expects a `<lang>.ldf` file for each `<lang>`. So we create portmanteau ldf files for `austrian`, `german` and `swissgerman`.<sup>2</sup> These files themselves only load `germanb.ldf`, which does the real work:

```
151 \input germanb.ldf\relax
```

---

<sup>2</sup>For some `austrian` and `german`, this is not strictly necessary, since `babel` provides aliases for these languages (pointing to `germanb`). However, since `babel` does not officially support these aliases anymore after the language definition files have been separated from the core, we provide the whole range of ldf files for the sake of completeness.



## Change History

germanb-1.0a		<code>\captionsgerman: \pagename</code>	
General: Incorporated Nico's comments .....	1	should be <code>\headpagename</code> .....	4
germanb-1.0b		Removed <code>\global</code> definitions ..	4
General: fixed typo in definition for austrian language found by Werenfried Spitspit@fys.ruu.nl .....	1	<code>\extrasgerman: Save all redefined macros</code> .....	5
germanb-1.0c		<code>\noextrasgerman: Try to restore everything to its former state</code> ..	5
General: Fixed some typos .....	1	germanb-2.2a	
germanb-1.1		General: Renamed <code>babel.sty</code> in <code>babel.com</code> .....	1
General: When using PostScript fonts with the Adobe fontencoding, the dieresis-accent is located elsewhere, modified <code>germanb</code> .....	1	germanb-2.2d	
<code>\noextrasgerman: Added \dieresis</code> .....	5	General: Removed use of <code>\@ifundefined</code> .....	3
germanb-1.1a		germanb-2.3	
General: Modified the documentation somewhat .....	1	General: Rewritten parts of the code to use the new features of <code>babel</code> version 3.1 .....	1
germanb-2.0		germanb-2.3e	
General: Modified for <code>babel 3.0</code> ..	1	General: Added <code>\save@sf@q</code> macro and rewrote all quote macros to use it .....	6
Now use <code>\adddialect</code> for austrian .....	4	Added warning, if no german patterns loaded .....	3
Now use <code>\adddialect</code> if language undefined .....	3	Brought up-to-date with <code>german.tex v2.3e</code> (plus some bug fixes) [br] .....	1
germanb-2.0a		<code>\captionsgerman: Added \prefacename, \seename and \alsoname</code> .....	4
General: Removed some problems in change log .....	1	<code>\dategerman: Added \month@german</code> .....	5
germanb-2.0b		germanb-2.3h	
<code>\extrasgerman: added some comment chars to prevent white space</code> .....	5	General: moved definition of <code>\allowhyphens, \set@low@box</code> and <code>\save@sf@q</code> to <code>babel.com</code> ..	6
<code>\noextrasgerman: added some comment chars to prevent white space</code> .....	5	germanb-2.4	
germanb-2.1		<code>\captionsgerman: \headpagename</code> should be <code>\pagename</code> .....	4
General: Removed bug found by van der Meer .....	1	germanb-2.5	
germanb-2.2		General: Update or $\LaTeX 2\epsilon$ .....	1
General: Removed global assignments, brought uptodate with <code>german.tex v2.3d</code> .....	1	germanb-2.5c	
		General: Now use <code>\@nopatterns</code> to produce the warning .....	3

Removed the use of <code>\filedate</code> and moved the identification after the loading of <code>babel.def</code>	1	Replaced <code>\undefined</code> with <code>\@undefined</code> and <code>\empty</code> with <code>\@empty</code> for consistency with L <sup>A</sup> T <sub>E</sub> X	1
germanb-2.6a		<code>\captionsgerman</code> : Construct control sequence on the fly	4
General: <code>\umlautlow</code> and <code>\umlauthigh</code> moved to <code>glyphs.dtx</code> , as well as <code>\newumlaut</code> (now <code>\lower@umlaut</code> )	6	<code>\noextrassgerman</code> : Construct control sequence <code>\extrasgerman</code> or <code>\extrasaustrian</code> on the fly	5
Moved all quotation characters to <code>glyphs.dtx</code>	6	germanb-2.6f	
Moved the identification to the top of the file	1	General: Copied the coding for "f" from <code>german.dtx</code> version 2.5d	8
Rewrote the code that handles the active double quote character	1	use <code>\SS</code> instead of <code>SS</code> , removed braces after <code>\ss</code>	7
Use <code>\ddot</code> instead of <code>\@MATHUMLAUT</code>	7	<code>\ck</code> : Now use <code>\shorthandon</code> and <code>\shorthandoff</code>	8
<code>\noextrasswissgerman</code> : All the code to handle the active double quote has been moved to <code>babel.def</code>	6	<code>\dateaustrian</code> : use <code>\def</code> instead of <code>\edef</code>	5
Removed <code>\3</code> as it is no longer in <code>germanb.ldf</code>	6	Use <code>\edef</code> to define <code>\today</code> to save memory	5
use <code>\germanhyphenmins</code> to store the correct values	6	<code>\dategerman</code> : use <code>\def</code> instead of <code>\edef</code>	5
germanb-2.6b		Use <code>\edef</code> to define <code>\today</code> to save memory	5
<code>\captionsgerman</code> : Added <code>\proofname</code> for AMS-L <sup>A</sup> T <sub>E</sub> X	4	germanb-2.6i	
germanb-2.6c		<code>\noextrasswissgerman</code> : Deactivate shorthands outside of German.	6
General: added the <code>\allowhyphens</code>	7	germanb-2.6j	
Moved <code>\german@dq@disc</code> to <code>babel.def</code> , calling it <code>\bbl@disc</code>	7	<code>\captionsgerman</code> : Added <code>\glossaryname</code>	4
<code>\noextrasswissgerman</code> : Use decimal number instead of hat notation as the hat may be activated	6	<code>\noextrasswissgerman</code> : Now use <code>\providehyphenmins</code> to provide a default value	6
germanb-2.6d		germanb-2.6k	
General: Moved the definition of <code>\atcatcode</code> right to the beginning.	1	<code>\noextrasswissgerman</code> : Turn <code>frenchspacing</code> on, as in <code>german.sty</code>	6
Now use <code>\ldf@finish</code> to wrap up	8	germanb-2.6l	
Now use <code>\LdfInit</code> to perform initial checks	3	General: Making <code>germanb</code> behave like <code>german</code> needs some more work besides defining <code>\CurrentOption</code>	3
		germanb-2.6m	
		General: Corrected a typo	3
		germanb-2.7	
		General: Added support for variety	

swissgerman. ....	1	\dateswissgerman. ....	5
Generate portmanteau files austrian.ldf, german.ldf and swissgerman.ldf. ....	8	\noextrasswissgerman: Added \extrasswissgerman and \noextrasswissgerman. ....	5
Revised austrian support. ....	1	Deactivate shorthands also outside of austrian and swissgerman. ....	6
Revised documentation: Turn the babel manual chapter into a self-enclosed manual. ....	1	Do not use \@namedef when \noextras is already defined and should not be overwritten.	6
\captionsswissgerman: Changed \enclname in austrian to <i>Beilage(n)</i> . ....	4	germanb-2.7b	
Split \captionsswissgerman from \captionsswissgerman. ....	4	General: Do not warn about miss- ing swissgerman patterns if swissgerman is not loaded ....	4
\dateswissgerman: Added			

## References

- [1] Ammon, Ulrich et al.: *Variante nwörterbuch des Deutschen. Die Standard-  
sprache in Österreich, der Schweiz und Deutschland sowie in Liechten-  
stein, Luxemburg, Ostbelgien und Südtirol*. Berlin, New York: De Gruyter.
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