

Babel support for the German language (traditional orthography)

Johannes Braams Bernd Raichle Walter Schmidt
Jürgen Spitzmüller*

v2.8 (2016/11/01)

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.¹ 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.

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 consonantial character combinations change in the

*Current maintainer. Address correspondence to `juergen (at) spitzmueller (dot) org`.

¹The 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.

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`.

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

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`.

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.

<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)

```

1 \def\bbl@tempa{germanb}
2 \ifx\CurrentOption\bbl@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\extrasgermanb\extrasgerman
13    \let\noextrasgermanb\noextrasgerman
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 \LaTeX 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 `\captionsaustrian` builds on `\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 `\captionsswissgerman` builds on `\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.\sim\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.\sim\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.\sim\ifnum1=\month
73   J\anner\else \month@german\fi \space\number\year}}
```

3.4 Extras

`\extrasgerman` The macros `\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.

`\noextrasaustrian` 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 $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ to be able to hyphenate German words which contain ‘ß’ (in the OT1 position ^Y) we have to give the character a nonzero `\lccode` (see Appendix H, the $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ book).

```

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}{\ddot i}}%
107   {\ddot imath}}
108 \declare@shorthand{german}{I}{\textormath{"I}{\ddot I}}

```

German ß,

```

109 \declare@shorthand{german}{\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}{\hspace}{\hspace}
145 \declare@shorthand{german}{\leavevmode}{\leavevmode}
146 \declare@shorthand{german}{\hspace}{\hspace}

```

\mdqon All that's left to do now is to define a couple of commands for reasons of compatibility
\mdqoff 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.² These files themselves only load `germanb.ldf`, which does the real work:

```

151 \input germanb.ldf\relax

```

Change History

germanb-1.0a	change log 1
General: Incorporated Nico's	germanb-2.0b
comments 1	\extrasgerman: added some comment
germanb-1.0b	chars to prevent white space 5
General: fixed typo in definition for	\noextrasgerman: added some
austrian language found by	comment chars to prevent white
Werenfried Spit nspit@fys.ruu.nl . 1	space 5
germanb-1.0c	germanb-2.1
General: Fixed some typos 1	General: Removed bug found by van
germanb-1.1	der Meer 1
\noextrasgerman: Added \dieresis . . 5	germanb-2.2
General: When using PostScript fonts	\captionsgerman: \pagename should be
with the Adobe fontencoding, the	\headpagename 4
dieresis-accent is located	Removed \global definitions 4
elsewhere, modified germanb 1	\extrasgerman: Save all redefined
germanb-1.1a	macros 5
General: Modified the documentation	\noextrasgerman: Try to restore
somewhat 1	everything to its former state 5
germanb-2.0	General: Removed global assignments,
General: Modified for babel 3.0 1	brought uptodate with german.tex
Now use \adddialect for austrian . . 3	v2.3d 1
Now use \adddialect if language	germanb-2.2a
undefined 3	General: Renamed babel.sty in
germanb-2.0a	babel.com 1
General: Removed some problems in	

²For 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.

germanb-2.2d	Use <code>\ddot</code> instead of <code>\@MATHUMLAUT</code> . . .	6
General: Removed use of		
<code>\ifundefined</code>		3
germanb-2.3	<code>\captionsgerman</code> : Added <code>\proofname</code>	
General: Rewritten parts of the code to	for AMS- \TeX	4
use the new features of babel		
version 3.1	germanb-2.6c	
germanb-2.3e	<code>\noextrasswissgerman</code> : Use decimal	
<code>\captionsgerman</code> : Added	number instead of hat-notation as	
<code>\prefacename</code> , <code>\seename</code> and	the hat may be activated	5
<code>\alsoname</code>	General: added the <code>\allowhyphens</code>	6
<code>\dategerman</code> : Added <code>\month@german</code> . .	Moved <code>\german@dq@disc</code> to	
General: Added <code>\save@sf@q</code> macro and	babel.def, calling it <code>\bbl@disc</code>	6
rewrote all quote macros to use it . .	germanb-2.6d	
Added warning, if no german	<code>\captionsgerman</code> : Construct control	
patterns loaded	sequence on the fly	4
Brought up-to-date with <code>german.tex</code>	<code>\noextrasgerman</code> : Construct control	
v2.3e (plus some bug fixes) [br] . . .	sequence <code>\extrasgerman</code> or	
germanb-2.3h	<code>\extrasaustrian</code> on the fly	5
General: moved definition of	General: Moved the definition of	
<code>\allowhyphens</code> , <code>\set@low@box</code> and	<code>\atcatcode</code> right to the beginning. . .	1
<code>\save@sf@q</code> to babel.com	Now use <code>\ldf@finish</code> to wrap up . . .	8
germanb-2.4	Now use <code>\LdfInit</code> to perform initial	
<code>\captionsgerman</code> : <code>\headpagename</code>	checks	3
should be <code>\pagename</code>	Replaced <code>\undefined</code> with	
germanb-2.5	<code>\@undefined</code> and <code>\empty</code> with	
General: Update or \TeX 2 ϵ	<code>\@empty</code> for consistency with \TeX . .	1
germanb-2.5c	germanb-2.6f	
General: Now use <code>\@nopatterns</code> to	<code>\ck</code> : Now use <code>\shorthandon</code> and	
produce the warning	<code>\shorthandoff</code>	7
Removed the use of <code>\filedate</code> and	<code>\dateaustrian</code> : use <code>\def</code> instead of	
moved the identification after the	<code>\edef</code>	5
loading of <code>babel.def</code>	Use <code>\edef</code> to define <code>\today</code> to save	
germanb-2.6a	memory	5
<code>\noextrasswissgerman</code> : All the code to	<code>\dategerman</code> : use <code>\def</code> instead of <code>\edef</code> .	5
handle the active double quote has	Use <code>\edef</code> to define <code>\today</code> to save	
been moved to <code>babel.def</code>	memory	5
Removed <code>\3</code> as it is no longer in	General: Copied the coding for "f	
<code>germanb.ldf</code>	from <code>german.dtx</code> version 2.5d	7
use <code>\germanhyphenmins</code> to store the	use <code>\SS</code> instead of <code>SS</code> , removed	
correct values	braces after <code>\ss</code>	7
General: <code>\umlautlow</code> and <code>\umlauthigh</code>	germanb-2.6i	
moved to <code>glyphs.dtx</code> , as well as	<code>\noextrasswissgerman</code> : Deactivate	
<code>\newumlaut</code> (now <code>\lower@umlaut</code> . .	shorthands outside of German. . . .	5
Moved all quotation characters to	germanb-2.6j	
<code>glyphs.dtx</code>	<code>\captionsgerman</code> : Added	
Moved the identification to the top	<code>\glossaryname</code>	4
of the file	<code>\noextrasswissgerman</code> : Now use	
Rewrote the code that handles the	<code>\providehyphenmins</code> to provide a	
active double quote character	default value	6

germanb-2.6k		<code>\noextrasswissgerman</code>	5
<code>\noextrasswissgerman</code> : Turn		Deactivate shorthands also outside	
frenchspacing on, as in <code>german.sty</code>	6	of austrian and swissgerman.	5
germanb-2.6l		Do not use <code>\@namedef</code> when	
General: Making germanb behave like		<code>\noextras</code> is already defined and	
german needs some more work		should not be overwritten.	6
besides defining <code>\CurrentOption</code>	2	General: Added support for variety	
germanb-2.6m		swissgerman.	1
General: Corrected a typo	2	Generate portmanteau files	
germanb-2.7		austrian.ldf, german.ldf and	
<code>\captionsswissgerman</code> : Changed <code>\enclname</code>		swissgerman.ldf.	8
in austrian to <i>Beilage(n)</i>	4	Revised austrian support.	1
Split <code>\captionsswissgerman</code> from		Revised documentation: Turn the	
<code>\captionsaustrian</code> and		babel manual chapter into a	
<code>\captionsswissgerman</code>	4	self-enclosed manual.	1
<code>\dateswissgerman</code> : Added		germanb-2.7b	
<code>\dateswissgerman</code>	5	General: Do not warn about missing	
<code>\noextrasswissgerman</code> : Added		swissgerman patterns if	
<code>\extrasswissgerman</code> and		swissgerman is not loaded	3

References

- [1] Ammon, Ulrich et al.: *Variantenwörterbuch des Deutschen. Die Standardsprache in Österreich, der Schweiz und Deutschland sowie in Liechtenstein, Luxemburg, Ostbelgien und Südtirol*. Berlin, New York: De Gruyter.
- [2] Braams, Johannes and Bezos, Javier: *Babel*. <http://mirrors.ctan.org/macros/latex/required/babel/base/babel.pdf>.
- [3] Partl, Hubert: *German T_EX, TUGboat* 9 (1988) #1, p. 70–72.
- [4] Raichle, Bernd: *Kurzbeschreibung german.sty und ngerman.sty (Version 2.5)*. <http://mirrors.ctan.org/language/german/gerdoc.pdf>.