

# Babel support for the German language (new orthography)

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## Abstract

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

## 1 Aim and usage

The file `ngermanb.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.<sup>1</sup> Furthermore, it assures that the correct hyphenation patterns for the respective language or variety are used.<sup>2</sup> The file adheres to the reformed (1996 ff.) orthography. For traditional (1901–1996) German orthography support, please refer to the complementary `germanb.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[ngerman]{babel}`
- `\usepackage[naustrian]{babel}`
- `\usepackage[nswissgerman]{babel}`

Using multiple varieties in parallel is possible; consult the babel manual [2] for details.

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\*Current maintainer. Please report issues via <https://github.com/jspitz/babel-german>.

<sup>1</sup>The file `ngermanb.ldf` started as a re-implementation of the package `ngerman.sty` by Bernd Raichle (cf. [6]), which itself builds on `german.sty`, originally developed by Hubert Partl (cf. [4]) and later maintained by Bernd Raichle as well. The initial re-implementation was done by Johannes Braams.

<sup>2</sup>Currently, these are the default hyphenation patterns for post-1996 German spelling (`dehyphn-x` via the `hyph-utf8` [5] package). For some years now, ever-improving ‘experimental’ new hyphenation patterns are available via the `dehyph-exptl` package [3]. They are not used by babel-german yet due to their experimental status. Please refer to the documentation of `dehyph-exptl` for instructions how to use these experimental patterns with babel-german.

## 2 Shorthands

For all three varieties of German, the character " is made active in order to provide some shorthand macros for frequently used special characters as well as for better control of hyphenation, line breaks and ligatures. Table 1 provides an overview of the shorthands that are provided by `ngermanb.ldf`.

Table 1: The extra definitions made by `ngermanb.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; tremata: "e, "i, "E, "I).
	"s	German ⟨ß⟩ (shorthand for \ss{}).
	"z	German ⟨ß⟩ (shorthand for \ss{}). The difference to "s is the uppercase version.
	"S	\uppercase{"s}, typeset as ⟨SS⟩(⟨ß⟩ must be written as ⟨SS⟩ in uppercase writing).
	"Z	\uppercase{"z}, typeset as ⟨SZ⟩. In traditional spelling, ⟨ß⟩ could also be written as ⟨SZ⟩ instead of ⟨SS⟩ in uppercase writing. Note that, with reformed orthography, the ⟨SZ⟩ variant has been deprecated in favour of ⟨SS⟩ only.
	"	Disable ligature at this position (e. g., at morpheme boundaries, as in Auf"   l age).
	"-	An additional breakpoint that does still allow for hyphenation at the breakpoints preset in the hyphenation patterns (as opposed to \-).
	"=	An explicit hyphen with a breakpoint, allowing for hyphenation at the other points preset in the hyphenation patterns (as opposed to plain -); useful for long compounds such as IT"=Dienstleisterinnen.
	"~	An explicit hyphen without a breakpoint. Useful for cases where the hyphen should stick at the following syllable, e. g., bergauf und "~ab.
	" "	A breakpoint that does not output a hyphen if the line break is performed (consider parenthetical extensions as in (pseudo"~) "wissenschaftlich).
New feature in v. 2.9!	"/	A slash that allows for a linebreak. As opposed to \slash{}, hyphenation at the breakpoints preset in the hyphenation patterns is still allowed.
	"‘	German left double quotes ⟨„⟩.
	"’	German right double quotes ⟨”⟩.
	"<	French/Swiss left double quotes ⟨«⟩.
	">	French/Swiss right double quotes ⟨»⟩.

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

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

\glqq	German left double quotes ⟨„⟩.
\grqq	German right double quotes ⟨”⟩.
\glq	German left single quotes ⟨,⟩.
\grq	German right single quotes ⟨’⟩.
\flqq	French/Swiss left double quotes ⟨«⟩.
\frqq	French/Swiss right double quotes ⟨»⟩.
\flq	French/Swiss left single quotes ⟨<⟩.
\frq	French/Swiss right single quotes ⟨>⟩.
\dq	The straight quotation mark character ⟨"⟩.

## 3 Implementation

### 3.1 General settings

First, we define some helper macros that help us to identify later on which variety of German we are currently dealing with.

```
1 \def\bbl@opt@ngerman{ngerman}
2 \def\bbl@opt@ngermanb{ngermanb}
3 \def\bbl@opt@naustrian{naustrian}
4 \def\bbl@opt@nswissgerman{nswissgerman}
```

If `ngermanb.lfd` is read via the deprecated babel option `ngermanb`, we make it behave as if `ngerman` was specified.

```
5 \ifx\CurrentOption\bbl@opt@ngermanb
6   \def\CurrentOption{ngerman}
7 \fi
```

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

```
8 \LdfInit\CurrentOption{captions\CurrentOption}
```

If `ngermanb.lfd` is read as an option, i.e., by the `\usepackage` command, `ngerman` could be an ‘unknown’ language, so we have to make it known. We check for the existence of `\l@ngerman` and issue a warning if it is unknown.

```
9 \ifx\l@ngerman\undefined
10   \@nopatterns{German (new orthography)}
11   \adddialect\l@ngerman0
12 \fi
```

We set `naustrian` and `nswissgerman` as dialects of `ngerman`, since they use the same hyphenation patterns than `ngerman`. If no `ngerman` patterns are found, we issue a warning.

```
13 \ifx\CurrentOption\bbl@opt@naustrian
14   \ifx\l@ngerman\undefined
15     \@nopatterns{German (new orthography), needed by Austrian (new orthography)}
16     \adddialect\l@naustrian0
17   \else
18     \adddialect\l@naustrian\l@ngerman
19   \fi
20 \fi
21 \ifx\CurrentOption\bbl@opt@nswissgerman
22   \ifx\l@ngerman\undefined
23     \@nopatterns{German (new orthography), needed by Swiss German (new orthography)}
24     \adddialect\l@nswissgerman0
25   \else
26     \adddialect\l@nswissgerman\l@ngerman
27   \fi
28 \fi
```

### 3.2 Language-specific strings (captions)

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

`\@captionsngerman` The macro `\@captionsngerman` defines all strings used in the four standard document classes provided with L<sup>A</sup>T<sub>E</sub>X for German. This is an internal macro that is inherited and modified by the following macros for the respective language varieties.

```

29 \@namedef{@captionsngerman}{%
30   \def\prefacename{Vorwort}%
31   \def\refname{Literatur}%
32   \def\abstractname{Zusammenfassung}%
33   \def\bibname{Literaturverzeichnis}%
34   \def\chaptername{Kapitel}%
35   \def\appendixname{Anhang}%
36   \def\contentsname{Inhaltsverzeichnis}%
37   \def\listfigurename{Abbildungsverzeichnis}%
38   \def\listtablename{Tabellenverzeichnis}%
39   \def\indexname{Index}%
40   \def\figurename{Abbildung}%
41   \def\tablename{Tabelle}%
42   \def\partname{Teil}%
43   \def\enclname{Anlage(n)}%
44   \def\ccname{Verteiler}%
45   \def\headtoname{An}%
46   \def\pagename{Seite}%
47   \def\seename{siehe}%
48   \def\alsoname{siehe auch}%
49   \def\proofname{Beweis}%
50   \def\glossaryname{Glossar}%
51 }
```

`\captionsngerman` The macro `\captionsngerman` is identical to `\@captionsngerman`, but only defined if `ngerman` is requested.

```

52 \ifx\CurrentOption\bbl@opt@ngerman
53   \@namedef{captionsngerman}{%
54     \@nameuse{@captionsngerman}%
55   }
56 \fi
```

`\captionsnaustrian` The macro `\captionsnaustrian` builds on `\@captionsngerman`, but redefines some strings following Austrian conventions (for the respective variants, cf. [1]). It is only defined if `naustrian` is requested.

```

57 \ifx\CurrentOption\bbl@opt@naustrian
58   \@namedef{captionsnaustrian}{%
59     \@nameuse{@captionsngerman}%
60     \def\enclname{Beilage(n)}%
61   }
62 \fi
```

`\captionnswissgerman` The macro `\captionnswissgerman` builds on `\@captionngerman`, but redefines some strings following Swiss conventions (for the respective variants, cf. [1]). It is only defined if `nswissgerman` is requested.

```
63 \ifx\CurrentOption\bbl@opt@nswissgerman
64   \@namedef{captionnswissgerman}{%
65     \@nameuse{@captionngerman}%
66     \def\enclname{Beilage(n)}%
67   }
68 \fi
```

### 3.3 Date localizations

`\month@ngerman` The macro `\month@ngerman` defines German month names for all varieties.

```
69 \def\month@ngerman{\ifcase\month\or
70   Januar\or Februar\or M\arz\or April\or Mai\or Juni\or
71   Juli\or August\or September\or Oktober\or November\or Dezember\fi}
```

`\datengerman` The macro `\datengerman` redefines the command `\today` to produce German dates. It is only defined if `ngerman` is requested.

```
72 \ifx\CurrentOption\bbl@opt@ngerman
73   \def\datengerman{\def\today{\number\day.\~\month@ngerman
74     \space\number\year}}
75 \fi
```

`\datenswissgerman` The macro `\datenswissgerman` does the same for Swiss German dates. The result is identical to German. This macro is only defined if `nswissgerman` is requested.

```
76 \ifx\CurrentOption\bbl@opt@nswissgerman
77   \def\datenswissgerman{\def\today{\number\day.\~\month@ngerman
78     \space\number\year}}
79 \fi
```

`\datenaustrian` The macro `\datenaustrian` redefines the command `\today` to produce Austrian versions of the German dates. Here, the naming of January („Jänner“) differs from the other German varieties. The macro is only defined if `naustrian` is requested.

```
80 \ifx\CurrentOption\bbl@opt@naustrian
81   \def\datenaustrian{\def\today{\number\day.\~\ifnum1=\month
82     J\"anner\else \month@ngerman\fi \space\number\year}}
83 \fi
```

### 3.4 Extras

`\extrasnaustrian` The macros `\extrasngerman`, `\extrasnaustrian` and `\extrasnswissgerman`, respectively, will perform all the extra definitions needed for the German language or the respective variety. The macro `\noextrasngerman` is used to cancel the actions of `\extrasngerman`. `\noextrasnaustrian` and `\noextrasnswissgerman` behave analogously.

`\noextrasnswissgerman` First, the character " is declared active for all German varieties. This is done once, later on its definition may vary.

```
\noextrasngerman
84 \initiate@active@char{"}
```

Depending on the option with which the language definition file has been loaded, the macro `\extrasngerman`, `\extrasnaustrian` or `\extrasnswissgerman` is defined. Each of those is identical: they load the shorthands defined below and activate the " character.

```
85 \@namedef{extras\CurrentOption}{%
86   \languageshorthands{ngerman}}
87 \expandafter\addto\csname extras\CurrentOption\endcsname{%
88   \bbl@activate{""}}
```

Next, again depending on the option with which the language definition file has been loaded, the macro `\noextrasngerman`, `\noextrasnaustrian` or `\noextrasnswissgerman` is defined. These deactivate the " character and thus turn the shorthands off again outside of the respective variety.

```
89 \expandafter\addto\csname noextras\CurrentOption\endcsname{%
90   \bbl@deactivate{""}}
```

In order for  $\TeX$  to be able to hyphenate German words which contain ‘ß’ (in the OT1 position  $\text{^Y}$ ) we have to give the character a nonzero `\lcode` (see Appendix H, the  $\TeX$ book).

```
91 \expandafter\addto\csname extras\CurrentOption\endcsname{%
92   \babel@savevariable{\lcode25}%
93   \lcode25=25}
```

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

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

```
96 \expandafter\addto\csname noextras\CurrentOption\endcsname{%
97   \umlauthigh}
```

The current version of the ‘new’ German hyphenation patterns (`dehyphn.tex`) is to be used with `\lefthyphenmin` and `\righthyphenmin` set to 2.

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

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

```
99 \expandafter\addto\csname extras\CurrentOption\endcsname{%
100   \bbl@frenchspacing}
101 \expandafter\addto\csname noextras\CurrentOption\endcsname{%
102   \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 `\`.

```
103 \begingroup \catcode'\12
```

```

104 \def\x{\endgroup
105   \def\@SS{\mathchar"7019 }
106   \def\dq{"}}
107 \x

```

Now we can define the doublequote shorthands: the umlauts,

```

108 \declare@shorthand{ngerman}{a}{\textormath{"{a}\allowhyphens}{\ddot a}}
109 \declare@shorthand{ngerman}{o}{\textormath{"{o}\allowhyphens}{\ddot o}}
110 \declare@shorthand{ngerman}{u}{\textormath{"{u}\allowhyphens}{\ddot u}}
111 \declare@shorthand{ngerman}{A}{\textormath{"{A}\allowhyphens}{\ddot A}}
112 \declare@shorthand{ngerman}{O}{\textormath{"{O}\allowhyphens}{\ddot O}}
113 \declare@shorthand{ngerman}{U}{\textormath{"{U}\allowhyphens}{\ddot U}}

```

tremata,

```

114 \declare@shorthand{ngerman}{e}{\textormath{"{e}{\ddot e}}
115 \declare@shorthand{ngerman}{E}{\textormath{"{E}{\ddot E}}
116 \declare@shorthand{ngerman}{i}{\textormath{"{i}{\ddot i}}%
117   {\ddot\imath}}
118 \declare@shorthand{ngerman}{I}{\textormath{"{I}{\ddot I}}

```

German ß,

```

119 \declare@shorthand{ngerman}{s}{\textormath{\ss}{\@SS}}
120 \declare@shorthand{ngerman}{S}{\SS}
121 \declare@shorthand{ngerman}{z}{\textormath{\ss}{\@SS}}
122 \declare@shorthand{ngerman}{Z}{\SZ}

```

German and French/Swiss quotation marks,

```

123 \declare@shorthand{ngerman}{' }{\glqq}
124 \declare@shorthand{ngerman}{" }{\grqq}
125 \declare@shorthand{ngerman}{< }{\flqq}
126 \declare@shorthand{ngerman}{> }{\frqq}

```

and some additional commands (hyphenation, line breaking and ligature control):

```

127 \declare@shorthand{ngerman}{- }{\nobreak\-\bbl\allowhyphens}
128 \declare@shorthand{ngerman}{| }{%
129   \textormath{\penalty\@M\discretionary{- }{\kern.03em}%
130     \allowhyphens}{}}
131 \declare@shorthand{ngerman}{" }{\hskip\z@skip}
132 \declare@shorthand{ngerman}{~ }{\textormath{\leavevmode\hbox{- }{- }}}
133 \declare@shorthand{ngerman}{=} {\penalty\@M-\hskip\z@skip}
134 \declare@shorthand{ngerman}{/ }{\textormath
135   {\bbl\allowhyphens\discretionary{/ }{\bbl\allowhyphens}{}}

```

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

```

136 \def\mdqon{\shorthandon{}}
137 \def\mdqoff{\shorthandoff{}}

```

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.

```

138 \ldf@finish\CurrentOption

```

### 3.6 naustrian.ldf, ngerman.ldf and nswissgerman.ldf

Babel expects a  $\langle lang \rangle$ .ldf file for each  $\langle lang \rangle$ . So we create portmanteau ldf files for naustrian, ngerman and nswissgerman.<sup>3</sup> These files themselves only load ngermanb.ldf, which does the real work:

```
139 \input ngermanb.ldf\relax
```

## Change History

Version 2.6f	Do not use \@namedef when \noextras is already defined and should not be overwritten. . . . . 6
General: Renamed from germanb.ldf; language names changed from german and austrian to ngerman and naustrian. . . . . 1	\noextrasnswissgerman: Added \noextrasnswissgerman. . . . . 5
Version 2.6j	General: Added support for variety nswissgerman. . . . . 1
\noextrasngerman: Deactivate shorthands outside of German . . . 6	Generate portmanteau files naustrian.ldf, ngerman.ldf and nswissgerman.ldf. . . . . 8
Version 2.6k	Revised naustrian support. . . . . 1
\@captionsngerman: Added \glossaryname . . . . . 4	Revised documentation: Turn the babel manual chapter into a self-enclosed manual. . . . . 1
\noextrasngerman: Now use \providehyphenmins to provide a default value . . . . . 6	
Version 2.6m	Version 2.8
\noextrasngerman: Turn frenchspacing on, as in german.sty . . . . . 6	\@captionsngerman: Define trans-variational base captions which are loaded and modified by the varieties . . . . . 4
Version 2.6n	\captionsnaustrian: Only define \captionsnaustrian if naustrian is requested. . . . . 4
\@captionsngerman: Corrected typo \captionnsgerman . . . . . 4	\captionsngerman: Only define \captionsngerman if ngerman is requested. . . . . 4
Version 2.7	\captionsnswissgerman: Only define \captionsnswissgerman if nswissgerman is requested. . . . . 5
\@captionsngerman: Changed \enclname in naustrian to Beilage(n). . . . . 4	\datenaustrian: Only define \datenaustrian if naustrian is requested. . . . . 5
Split \captionsngerman from \captionsnaustrian and \captionsnswissgerman. . . . . 4	\datengerman: Only define \datengerman if ngerman is requested. . . . . 5
\datenswissgerman: Added \datenswissgerman. . . . . 5	
\extrasnswissgerman: Added \extrasnswissgerman. . . . . 5	
\noextrasngerman: Deactivate shorthands also outside of naustrian and nswissgerman. . . . 6	

<sup>3</sup>For naustrian and ngerman, this is not strictly necessary, since babel provides aliases for these languages (pointing to ngermanb). 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.



\datenswissgerman: Only define \datenswissgerman if nswissgerman is requested. . . . .	5	Do not attempt to load \l@naustrian or \l@nswissgerman, which do not exist . . . . .	3
General: Only add dialects if the respective variety is loaded . . . . .	3	Version 2.10	
Version 2.9		General: Add helper macros to identify the current option. . . . .	3
General: Add "/" shortcut for breakable slash (taken from dutch.ldf) . . . . .	7	Improvements to the manual . . . . .	1

## 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://www.ctan.org/pkg/babel>.
- [3] Deutschsprachige Trennmustermannschaft: *dehyph-exptl – Experimental hyphenation patterns for the German language*. <https://ctan.org/pkg/dehyph-exptl>.
- [4] Partl, Hubert: *German T<sub>E</sub>X, TUGboat* 9/1 (1988), p. 70–72.
- [5] Manuel Pégourié-Gonnard et al.: *hyph-utf8 – Hyphenation patterns expressed in UTF-8*. <https://ctan.org/pkg/hyph-utf8>.
- [6] Raichle, Bernd: *German*. <http://www.ctan.org/pkg/german>.