

bath-bst: Harvard referencing style as recommended by the University of Bath Library

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Package v4.0 – 25 February 2021

1 Introduction

This package provides a **BibTeX** style to format reference lists in the **Harvard style** recommended by the University of Bath Library. It should be used in conjunction with **natbib** for citations.

1.1 Installation

The files you need are included in the zip archive available from **GitHub**. If you use the zip archive from **CTAN**, you will need to run `luatex bath-bst.dtx` to generate them.

You can use this style simply by copying the `bath.bst/bathx.bst` files into your working directory, that is, the directory holding the main `.tex` file for your document. If you want the style to be available for all your documents without having to copy it over each time, you can install it using the instructions below.

1.1.1 Managed way

The latest stable release of `bath-bst` has been packaged for TeX Live and MiKTeX. If you are running TeX Live and have `tlmgr` installed, you can install the package simply by running `tlmgr install bath-bst`. If you are running MiKTeX, you can install the package by running `mpm --install=bath-bst`. Both `tlmgr` and `mpm` have GUI versions that you might find friendlier.

1.1.2 Automated way

A makefile is provided which you can use with the Make utility on UNIX-like systems:

- Running `make source` generates the derived files
 - `README.md`
 - `bath.bst` and `bathx.bst`
 - `bath-bst-v1.tex`
 - `bath-bst.bib` and `bath-bst-v1.bib`
 - `bath-bst.ins`
- Running `make` generates the above files and also `bath-bst.pdf` and `bath-bst-v1.pdf`. Ensure you have (at least) the `luatexja`, `adobemapping` and `ipaex` packages installed first.
- Running `make inst` installs the files in the user's TeX tree. You can undo this with `make uninst`.
- Running `make install` installs the files in the local TeX tree. You can undo this with `make uninstall`.

*To contact the maintainer about this package, please visit the repository where the code is hosted: <https://github.com/alex-ball/bathbib>.

1.1.3 Manual way

You do not need to follow the first step if you downloaded the zip archive from [GitHub](#). You do not need to follow the second step if you already have the PDF documentation.

1. Run `luatex bath-bst.dtx` to generate the source files.
2. Compile `bath-bst.dtx` with [LuaLaTeX](#) and BibTeX to generate the documentation. You will need, among other things, the [luatexja](#), [adobemapping](#), [ipaex](#) and [haranoaji](#) packages installed; this is just for the documentation, not for the BibTeX style itself. To generate the version 1 tests and documentation, compile `bath-bst-v1.tex` with LuaLaTeX and BibTeX.
3. If you are using TeX Live, find your home TeX tree using the following command at the command prompt/terminal:

```
kpsewhich -var-value=TEXMFHOME
```

If you are using MikTeX, consult the MikTeX manual entry for [integrating local additions](#). You can use one of the roots (TeX trees) already defined – preferably one of the User roots – or set up a new one.

4. Move the files to your TeX tree as follows:
 - `source/bibtex/bath-bst: bath-bst.dtx, (bath-bst.ins)`
 - `bibtex/bst/bath-bst: bath.bst, bathx.bst`
 - `doc/bibtex/bath-bst: bath-bst.pdf, bath-bst-v1.pdf, README.md`
5. You may then have to update your installation’s file name database before TeX and friends can see the files.

2 Choosing which variant to use

The data model offered by the standard BibTeX styles, and even the extended `natbib` variants, is not really rich enough to support the nuances of the Harvard (Bath) style. This means design decisions have to be made about whether to attempt some level of compatibility with other styles or craft something utterly unique.

In the first version of `bath-bst`, the intention was to set things up so that, if the same `.bib` file was used with a different style, the features peculiar to the Harvard (Bath) style would be ignored and the remaining information would come out in a sensible arrangement. The recommendations of the style’s documentation were to use the standard entry types as much as possible (though more semantic aliases were provided), and minimal new fields were introduced. For the more exotic (in BibTeX terms) demands of the style, extensive use was made of the (standard) `note` and (non-standard) `titleaddon` fields to place information properly. If you have written a `.bib` file according to the principles in that first version, the `bath` style will still work as advertised for you.

The second version introduced a new variant, `bathx` (‘Bath extended’), which has a different aim. The idea with this one is that `.bib` files written for this style will be rendered just the same by the companion `biblatex-bath` style. Where possible, features from the latter have been emulated for BibTeX; otherwise, the ‘cheats’ used in this style will also work under `biblatex`.

Happily, it has been possible to do this while keeping most of the code in common. The main differences between two versions are as follows:

- In `bath`, the `titleaddon` field is printed bare, while in `bathx` it is wrapped in square brackets.
- In `bathx` online items are marked with ‘[Online]’ automatically, while in `bath` you have to mark them thus yourself.
- In `bathx` undated items are marked with ‘n.d.’ automatically, while in `bath` you have to give ‘n.d.’ as the value of `year` yourself.

One other change worth noting regards URL access dates. In version 1, the advice was to put them in `urldate`. With version 2 the advice is now to put them, perhaps counter-intuitively, in `urlyear`. The reason is that `biblatex` will complain if the value of `urldate` is in the wrong format, but will happily print the contents of `urlyear` literally. If you don’t care about `biblatex` compatibility, you can continue to use `urldate`.

3 Using the style

To use the style, add these lines to your preamble:

```
\usepackage{natbib}
\newcommand*{\urlprefix}{Available from: }
\newcommand*{\urldateprefix}{Accessed }
\bibliographystyle{bathx}
```

Remember also to specify your .bib file at the end of the document:

```
\bibliography{file}
```

To make a citation in the text, use the key that corresponds to the entry in your .bib file:

```
While collections can be supplemented by other means \citep{williams1997edd},
the absence of an invisible collection amongst historians is noted by
\citett[p.556]{stieg1981inh}. It may be, as \citett{burchard1965hhl} points out,
that they have no assistants or are reluctant to delegate, or it may be
down to economic factors \citep{adams2009tc1, adams2014tc2, gb.pa2014,
adams2017tc3}\dots
```

While collections can be supplemented by other means (Williams, 1997), the absence of an invisible collection amongst historians is noted by Stieg (1981b, p.556). It may be, as Burchard (1965) points out, that they have no assistants or are reluctant to delegate, or it may be down to economic factors (Adams, 2009, 2014; *Pensions Act*, 2014; Adams, 2017)...



Please refer to the documentation for **natbib** for the full range of commands available for in-text citations. Be aware that the **natbib** option **sort** will sort citations in bibliography order, rather than the chronological order demanded by Harvard (Bath) – so don't use it!

3.1 Migrating from version 2 to version 3

If you have previously used version 2 of the style, you may need to update your .bib file to accommodate the following changes in version 3:

- Journal titles are now coerced to sentence case, so any capital letters you want to keep need to be protected with braces.
- Entries of type **unpublished** are now marked as unpublished. If you have been using this for an item that should not be marked as unpublished (e.g. archive photographs, law reports), you can use **booklet** instead: this is the other entry type (along with **misc**) that has a **howpublished** field instead of a **publisher**.
- Some changes to the Harvard (Bath) style cannot be applied automatically (e.g. the update to how standards are referenced), so you may need to update your .bib file accordingly.

4 Examples



The examples below are shown in three parts. The first, marked with , shows an extract from the *Referencing guide: Harvard Bath* or *Referencing images*. The second, marked with , shows the reference as formatted by Bib_{TEX}. The last shows how the reference was entered in the .bib file. The bottom right corner shows the source of the example: 'RX' indicates the 'Reference examples (A-Z)' section of the Guide; 'RL' indicates the 'Organise a reference list' section of the Guide; 'RI' indicates *Referencing images*.

Some examples are highlighted in orange. This indicates that some fields have been 'abused' to achieve the right effect; in other words, they contain information that does not conform with their intended use. Some others make use of the **note** and **titleaddon** fields to achieve the right

effect, where other styles might need the information placed differently. Particular care should be taken with such items when switching between different styles, though of course any item might need adjustment to take account of differing conventions.



4.1 Books and book chapters

Book with author(s)

-  Rang, H.P., Dale, M.M., Ritter, J.M., Flower, R.J. and Henderson, G., 2012. *Rang and Dale's pharmacology*. 7th ed. Edinburgh: Elsevier Churchill Livingstone.
-  Rang, H.P., Dale, M.M., Ritter, J.M., Flower, R.J. and Henderson, G., 2012. *Rang and Dale's pharmacology*. 7th ed. Edinburgh: Elsevier Churchill Livingstone.

```
@book{rang.etal2012rdp,  
  author = {Rang, H. P. and Dale, M. M. and Ritter, J. M. and Flower, R. J. and Henderson, G.},  
  year = {2012},  
  title = {Rang and {Dale's} Pharmacology},  
  edition = {7},  
  address = {Edinburgh},  
  publisher = {Elsevier Churchill Livingstone}}
```



RX

-  Open University, 1972. *Electricity and magnetism*. Bletchley: Open University Press.
-  Open University, 1972. *Electricity and magnetism*. Bletchley: Open University Press.

```
@book{ou1972em,  
  author = {{Open University}},  
  year = {1972},  
  title = {Electricity and Magnetism},  
  address = {Bletchley},  
  publisher = {Open University Press}}
```


RX

Book with editor(s) instead of author(s)


-  Rothman, K.J., Greenland, S. and Lash, T.L., eds, 2008. *Modern epidemiology*. 3rd ed. Philadelphia, Pa.: Lippincott Williams & Wilkins.
-  Rothman, K.J., Greenland, S. and Lash, T.L., eds, 2008. *Modern epidemiology*. 3rd ed. Philadelphia, Pa.: Lippincott Williams & Wilkins.


```
@book{rothman.etal2008me,  
  editor = {Kenneth J. Rothman and Sander Greenland and Timothy L. Lash},  
  year = {2008},  
  title = {Modern Epidemiology},  
  edition = {3},  
  address = {Philadelphia, Pa.},  
  publisher = {Lippincott Williams \& Wilkins}}
```

RX

 Internally, collection is an alias for book.

Electronic book


 Haynes, W.M., ed., 2014. *CRC handbook of chemistry and physics* [Online]. 94th ed. Boca Raton, Fla.: CRC Press/Taylor and Francis. Available from: <http://www.hbcnetbase.com> [Accessed 16 June 2016].

 Haynes, W.M., ed., 2014. *CRC handbook of chemistry and physics* [Online]. 94th ed. Boca Raton, Fla.: CRC Press/Taylor and Francis. Available from: <http://www.hbcnetbase.com> [Accessed 16 June 2016].

```
@book{haynes2014crc,
  editor = {Haynes, W. M.},
  year = {2014},
  title = {{CRC} Handbook of Chemistry and Physics},
  edition = {94},
  address = {Boca Raton, Fla.},
  publisher = {CRC Press/Taylor and Francis},
  url = {http://www.hbcnetbase.com},
  urlyear = {16 June 2016}}
```

RX


 Hodds, J., 2016. *Referencing ebooks* [Kindle version 4.18]. Bath: University of Bath.

 Hodds, J., 2016. *Referencing ebooks* [Kindle version 4.18]. Bath: University of Bath.


```
@book{hodds2016re,
  author = {Hodds, J.},
  year = {2016},
  title = {Referencing ebooks},
  titleaddon = {Kindle version 4.18},
  address = {Bath},
  publisher = {University of Bath}}
```

RX

Book known by its title


-  Unfortunately, to avoid breaking other use cases for the **book** entry type, to achieve the following format you must use the non-standard **reference** entry type.


 British National Formulary, 2020. 79th ed. London: Pharmaceutical Press.


 British National Formulary, 2020b. 79th ed. London: Pharmaceutical Press.

```
@reference{bnf2020,
  year = {2020},
  title = {{British National Formulary}},
  edition = {79},
  address = {London},
  publisher = {Pharmaceutical Press}}
```

RX

-  Similarly, to achieve the following formats you must use the non-standard **inreference** entry type.

 British National Formulary, 2020. 79th ed. *Asprin*. London: Pharmaceutical Press.

 British National Formulary, 2020a. 79th ed. *Asprin*. London: Pharmaceutical Press.

```
@inreference{asprin2020bnf,
  title = {Asprin},
  year = {2020},
  booktitle = {{British National Formulary}},
  edition = {79},
  address = {London},
  publisher = {Pharmaceutical Press}}
```

RX

- 📖 British National Formulary, 2019. *Aspirin* [Online]. London: Pharmaceutical Press. Available from: https://www.medicinescomplete.com/#/content/bnf/_456850132 [Accessed 26 November 2019].
- ⚙ British National Formulary, 2019. *Aspirin* [Online]. London: Pharmaceutical Press. Available from: https://www.medicinescomplete.com/#/content/bnf/_456850132 [Accessed 26 November 2019].

```
@inreference{asprin2019bnf,
  title = {Aspirin},
  year = {2019},
  booktitle = {{British National Formulary}},
  address = {London},
  publisher = {Pharmaceutical Press},
  url = {https://www.medicinescomplete.com/#/content/bnf/_456850132},
  urlyear = {26 November 2019}}
```

RX

❗ Internally, `inreference` is an alias for `incollection`.

British National Formulary (2020b), British National Formulary (2019), British National Formulary (2020a).

One chapter/paper from a collection (by different authors) in an edited book

- 📖 Burchard, J.E., 1965. How humanists use a library. In: C.F.J. Overhage and J.R. Harman, eds. *Intrex: report on a planning conference and information transfer experiments*. Cambridge, Mass.: MIT Press, pp.41–87.
- ⚙ Burchard, J.E., 1965. How humanists use a library. In: C.F.J. Overhage and J.R. Harman, eds. *Intrex: report on a planning conference and information transfer experiments*. Cambridge, Mass.: MIT Press, pp.41–87.

```
@incollection{burchard1965hhl,
  author = {Burchard, J. E.},
  year = {1965},
  title = {How Humanists use a Library},
  editor = {C. F. J. Overhage and J. R. Harman},
  booktitle = {Intrex: report on a planning conference and information transfer experiments},
  address = {Cambridge, Mass.},
  publisher = {MIT Press},
  pages = {41-87}}
```

RL

- 📖 Reid, D.R., 1967. Physical testing of polymer films. In: S.H. Pinner, ed. *Modern packaging films*. London: Butterworths, pp.143–183.
- ⚙ Reid, D.R., 1967. Physical testing of polymer films. In: S.H. Pinner, ed. *Modern packaging films*. London: Butterworths, pp.143–183.

```
@incollection{reid1967ptp,
  author = {D. R. Reid},
  year = {1967},
  title = {Physical Testing of Polymer Films},
  editor = {S. H. Pinner},
  booktitle = {Modern Packaging Films},
  address = {London},
  publisher = {Butterworths},
  pages = {143-183}}
```

RX

4.2 Articles and periodicals

Journal article

- 📖 Stieg, M.F., 1981a. Continuing education and the reference librarian in the academic and research library. *Library journal*, 105(22), pp.2547–2551.
- ⚙️ Stieg, M.F., 1981a. Continuing education and the reference librarian in the academic and research library. *Library journal*, 105(22), pp.2547–2551.

```
@article{stieg1981cer,  
  author = {Stieg, M. F.},  
  year = {1981},  
  title = {Continuing Education and the Reference Librarian in the Academic and Research Library},  
  journal = {Library Journal},  
  volume = {105},  
  number = {22},  
  pages = {2547-2551}}
```

RL

- 📖 Stieg, M.F., 1981b. The information needs of historians. *College and research libraries*, 42(6), pp.549–560.
- ⚙️ Stieg, M.F., 1981b. The information needs of historians. *College and research libraries*, 42(6), pp.549–560.

```
@article{stieg1981inh,  
  author = {Stieg, M. F.},  
  year = {1981},  
  title = {The Information Needs of Historians},  
  journal = {College and Research Libraries},  
  volume = {42},  
  number = {6},  
  pages = {549-560}}
```

RL

- 📖 Newman, R., 2010. Malaria control beyond 2010. *Brit. Med. J.*, 341(7765), pp.157–208.
- ⚙️ Newman, R., 2010. Malaria control beyond 2010. *Brit. Med. J.*, 341(7765), pp.157–208.

```
@article{newman2010mcb,  
  author = {Newman, R.},  
  year = {2010},  
  title = {Malaria control beyond 2010},  
  journal = {{Brit. Med. J.}},  
  volume = {341},  
  number = {7765},  
  pages = {157-208}}
```

RX

Electronic journal article

Williams, F., 1997. Electronic document delivery: a trial in an academic library. *Ariadne* [Online], 10. Available from: <http://www.ariadne.ac.uk/issue10/edd/> [Accessed 5 December 1997].

Williams, F., 1997. Electronic document delivery: a trial in an academic library. *Ariadne* [Online], 10. Available from: <http://www.ariadne.ac.uk/issue10/edd/> [Accessed 5 December 1997].

```
@article{williams1997edd,  
  author = {Williams, F.},  
  year = {1997},  
  title = {Electronic Document Delivery: a Trial in an Academic Library},  
  journal = {Ariadne},  
  volume = {10},  
  url = {http://www.ariadne.ac.uk/issue10/edd/},  
  urlyear = {5 December 1997}}
```

RX

💡 If citing an article yet to be officially published, use the `pubstate` field (from `biblatex`) with the keyword `inpress` for ‘in press’ and `inpreparation` or `submitted` (whichever is more accurate) for ‘preprint’.

Liontou, C., Kontopodis, E., Oikonomidis, N., Maniotis, C., Tassopoulos, A., Tsiafoutis, I., Lazaris, E. and Koutouzis, M., 2019. Distal radial access: a review article. *Cardiovascular revascularization medicine* [Online], in press. Available from: <https://www.sciencedirect.com/science/article/pii/S1553838919303367> [Accessed 19 June 2019].

Liontou, C., Kontopodis, E., Oikonomidis, N., Maniotis, C., Tassopoulos, A., Tsiafoutis, I., Lazaris, E. and Koutouzis, M., 2019. Distal radial access: a review article. *Cardiovascular revascularization medicine* [Online], in press. Available from: <https://www.sciencedirect.com/science/article/pii/S1553838919303367> [Accessed 19 June 2019].

```
@article{liontou.etal2019dra,  
  author = {Liontou, C. and Kontopodis, E. and Oikonomidis, N. and Maniotis, C. and  
    Tassopoulos, A. and Tsiafoutis, I. and Lazaris, E. and Koutouzis, M.},  
  year = {2019},  
  title = {Distal Radial Access: a Review Article},  
  journal = {Cardiovascular Revascularization Medicine},  
  pubstate = {inpress},  
  url = {https://www.sciencedirect.com/science/article/pii/S1553838919303367},  
  urlyear = {19 June 2019}}
```

RX

Preprint in a digital repository

💡 The Harvard (Bath) style gives you a choice whether to treat preprints as pre-publication articles (above) or as grey literature (below). In the latter case, the `techreport` entry type is the best match semantically.

📖 Shah, I. and Corrick, I., 2016. *How should central banks respond to non-neutral inflation expectations?* Bath: University of Bath. *OPUS* [Online]. Available from: <http://opus.bath.ac.uk> [Accessed 4 May 2016].

⚙️ Shah, I. and Corrick, I., 2016. *How should central banks respond to non-neutral inflation expectations?* Bath: University of Bath. *OPUS* [Online]. Available from: <http://opus.bath.ac.uk> [Accessed 4 May 2016].

```
@techreport{shah.corrick2016hsc,
  author = {Shah, I. and Corrick, I.},
  year = {2016},
  title = {How should central banks respond to non-neutral inflation expectations?},
  address = {Bath},
  institution = {University of Bath},
  library = {OPUS},
  url = {http://opus.bath.ac.uk},
  urlyear = {4 May 2016}}
```

RX

Newspaper article

🔑 Give the issue's day and month as the volume.

📖 Haurant, S., 2004. Britain's borrowing hits £1 trillion. *The Guardian*, 29 July, p.16c.

⚙️ Haurant, S., 2004. Britain's borrowing hits £1 trillion. *The Guardian*, 29 July, p.16c.

```
@article{haurant2004bbh,
  author = {Haurant, S.},
  year = {2004},
  title = {Britain's Borrowing Hits \pounds 1 Trillion},
  journal = {The {Guardian}},
  volume = {29 July},
  pages = {16c}}
```

RX

📖 The Independent, 1992. Picking up the bills. *The Independent*, 4 June, p.28a.

⚙️ The Independent, 1992. Picking up the bills. *The Independent*, 4 June, p.28a.



```
@article{independent1992pub,
  author = {{The Independent}},
  year = {1992},
  title = {Picking Up the Bills},
  journal = {The {Independent}},
  volume = {4 June},
  pages = {28a}}
```

RX

4.3 Conference papers

❗ As in the standard Bib_{TEX} styles, `conference` is a legacy (and highly deprecated) alias for `inproceedings`.



Conference paper (when proceedings have a named editor)

-  Crawford, G.I., 1965. Oxygen in metals. In: J.M.A. Lenihan and S.J. Thompson, eds. *Activation analysis: proceedings of a NATO Advanced Study Institute*, 2–4 August 1964, Glasgow. London: Academic Press, pp.113–118.
-  Crawford, G.I., 1965. Oxygen in metals. In: J.M.A. Lenihan and S.J. Thompson, eds. *Activation analysis: Proceedings of a NATO Advanced Study Institute*, 2–4 August 1964, Glasgow. London: Academic Press, pp.113–118.

```
@inproceedings{crawford1965oim,  
  author = {Crawford, G. I.},  
  year = {1965},  
  title = {Oxygen in Metals},  
  editor = {J. M. A. Lenihan and S. J. Thompson},  
  booktitle = {Activation Analysis: Proceedings of a {NATO} {Advanced} {Study} {Institute}},  
  eventyear = {2--4 August 1964},  
  venue = {Glasgow},  
  address = {London},  
  publisher = {Academic Press},  
  pages = {113-118}}
```

RX

Conference paper (when proceedings have no named editor or are part of a major series)



-  Soper, D., 1972. Review of bracken control experiments with asulam. *Proceedings of the 11th British Weed Control Conference*, 15–17 November 1972, Brighton. Brighton: University of Sussex, pp.24–31.
-  Soper, D., 1972. Review of bracken control experiments with asulam. *Proceedings of the 11th British Weed Control Conference*, 15–17 November 1972, Brighton. Brighton: University of Sussex, pp.24–31.

```
@inproceedings{soper1972rbc,  
  author = {Soper, D.},  
  year = {1972},  
  title = {Review of Bracken Control Experiments with Asulam},  
  booktitle = {Proceedings of the 11th {British} {Weed} {Control} {Conference}},  
  eventyear = {15--17 November 1972},  
  venue = {Brighton},  
  address = {Brighton},  
  publisher = {University of Sussex},  
  pages = {24-31}}
```

RX


4.4 Grey literature

Thesis/dissertation


-  Burrell, J.G., 1973. *The importance of school tours in education*. Thesis (M.A.). Queen's University, Belfast.
-  Burrell, J.G., 1973. *The importance of school tours in education*. Thesis (M.A.). Queen's University, Belfast.


```
@mastersthesis{burrell1973ist,  
  author = {Burrell, J. G.},  
  year = {1973},  
  title = {The Importance of School Tours in Education},  
  type = {Thesis ({M.A.})},  
  school = {Queen's University, Belfast}}
```

RX

 Internally, `thesis` is an alias for `phdthesis`.


Report


 UNESCO, 1993. *General information programme and UNISIST*. (PGI-93/WS/22). Paris: UNESCO.

 UNESCO, 1993. *General information programme and UNISIST*. (PGI-93/WS/22). Paris: UNESCO.

```
@techreport{unesco1993gip,  
  author = {{UNESCO}},  
  year = {1993},  
  title = {General Information Programme and {UNISIST}},  
  address = {Paris},  
  institution = {UNESCO},  
  number = {PGI-93/WS/22}}
```


RX

 BRE, 2007. *Designing quality buildings: a BRE guide*. (Report 497). Bracknell: BRE.

 BRE, 2007. *Designing quality buildings: a BRE guide*. (Report 497). Bracknell: BRE.

```
@techreport{bre2007dqb,  
  author = {{BRE}},  
  year = {2007},  
  title = {Designing Quality Buildings: a {BRE} Guide},  
  address = {Bracknell},  
  institution = {BRE},  
  type = {Report},  
  number = {497}}
```

RX

 Internally, `report` is an alias for `techreport`.


Standard


 BSI, 1990. *BS 5605:1990 Recommendations for citing and referencing published material*. London: BSI.

 BSI, 1990. *BS 5605:1990 Recommendations for citing and referencing published material*. London: BSI.

```
@standard{bs5605:1990,  
  author = {{BSI}},  
  year = {1990},  
  title = {{BS}-5605:1990 {Recommendations} for Citing and Referencing Published Material},  
  address = {London},  
  organization = {BSI}}
```


RX

 ASTM, 2019. *ASTM D1655 - 19 Standard specification for aviation turbine fuels*. West Conshohocken, Pa.: ASTM.

 ASTM, 2019. *ASTM D1655 - 19 Standard specification for aviation turbine fuels*. West Conshohocken, Pa.: ASTM.

```
@standard{astm.d1655,  
  author = {{ASTM}},  
  year = {2019},  
  title = {{ASTM-D1655} - 19 {Standard} Specification for Aviation Turbine Fuels},  
  address = {West Conshohocken, Pa.},  
  organization = {ASTM}}
```

RX

 Internally, `standard` is an alias for `manual`.

Patent

- 📄 Phillipp Morris Inc., 1981. *Optical perforating apparatus and system*. European patent application 0021165A1. 1981-01-07.
- ⚙️ Phillipp Morris Inc., 1981. *Optical perforating apparatus and system*. European patent application 0021165A1. 1981-01-07.

```
@patent{pm1981opa,  
  author = {{Phillipp Morris Inc.}},  
  year = {1981},  
  title = {Optical perforating apparatus and system},  
  type = {European patent application},  
  number = {0021165A1. 1981-01-07}}
```

RX

❗ Internally, patent is an alias for manual.

Unpublished written material and personal communications

- 📄 Harris, G., 2013. *Focus group recommendations: internal task group report*. Unpublished.
- ⚙️ Harris, G., 2013. *Focus group recommendations: internal task group report*. Unpublished.

```
@unpublished{harris2013fgr,  
  author = {Harris, G.},  
  year = {2013},  
  title = {Focus group recommendations: internal task group report}}
```

RX

- 📄 Hadley, S., 2015. *Biomechanics: introductory reading, BM289: sport biomechanics*. University of Bath. Unpublished.
- ⚙️ Hadley, S., 2015. *Biomechanics: introductory reading, BM289: sport biomechanics*. University of Bath. Unpublished.

```
@unpublished{hadley2015bir,  
  author = {Hadley, S.},  
  year = {2015},  
  title = {Biomechanics: introductory reading, {BM289}: sport biomechanics},  
  howpublished = {University of Bath}}
```

RX


- 📄 Thomas, D., 2015. Word count and referencing style. *Frequently asked questions discussion board: PHYS 2011: housing studies*. University of Bath. Unpublished.
- ⚙️ Thomas, D., 2015. Word count and referencing style. *Frequently asked questions discussion board: PHYS 2011: housing studies*. University of Bath. Unpublished.


```
@unpublished{thomas2015wcr,  
  author = {Thomas, D.},  
  year = {2015},  
  title = {Word count and referencing style},  
  booktitle = {Frequently asked questions discussion board: {PHYS} 2011: housing studies},  
  howpublished = {University of Bath}}
```

RX

4.5 Audiovisual materials


Image


 NASA, 2015, *NASA astronaut Tim Kopra on Dec. 21 spacewalk* [Online]. Washington: NASA. Available from: <http://www.nasa.gov/image-feature/nasa-astronaut-tim-kopra-on-dec-21-spacewalk> [Accessed 7 January 2015].


 NASA, 2015. *NASA astronaut Tim Kopra on Dec. 21 spacewalk* [Online]. Washington: NASA. Available from: <http://www.nasa.gov/image-feature/nasa-astronaut-tim-kopra-on-dec-21-spacewalk> [Accessed 7 January 2015].

```
@image{nasa2015nat,  
  author = {{NASA}},  
  year = {2015},  
  title = {{NASA} Astronaut {Tim} {Kopra} on {Dec.\@} 21 Spacewalk},  
  address = {Washington},  
  publisher = {NASA},  
  url = {http://www.nasa.gov/image-feature/nasa-astronaut-tim-kopra-on-dec-21-spacewalk},  
  urlyear = {7 January 2015}}
```

RI


 You can use either the **publisher** or the **organization** field to record the source of the image.


 Iliff, D., 2006. *Royal Crescent in Bath, England - July 2006* [Online]. San Francisco: Wikimedia Foundation. Available from: https://commons.wikimedia.org/wiki/File:Royal_Crescent_in_Bath,_England_-_July_2006.jpg [Accessed 7 January 2016].

 Iliff, D., 2006. *Royal Crescent in Bath, England - July 2006* [Online]. San Francisco: Wikimedia Foundation. Available from: https://commons.wikimedia.org/wiki/File:Royal_Crescent_in_Bath,_England_-_July_2006.jpg [Accessed 7 January 2016].

```
@image{iliff2006rcb,  
  author = {D. Iliff},  
  year = {2006},  
  title = {{Royal} {Crescent} in {Bath,} {England} - {July} 2006},  
  address = {San Francisco},  
  organization = {Wikimedia Foundation},  
  url = {https://commons.wikimedia.org/wiki/File:Royal_Crescent_in_Bath,_England_-_July_2006.jpg},  
  urlyear = {7 January 2016}}
```


RI

 Anon., 1946. *Prototype electric bicycle displayed at the ‘Britain Can Make It’ exhibition organised by the Council of Industrial Design and held at the Victoria and Albert Museum, London, 1946. Designed by B. G. Bowden* [Photograph]. At: London. Design Council Slide Collection.



 Anon., 1946. *Prototype electric bicycle displayed at the ‘Britain Can Make It’ exhibition organised by the Council of Industrial Design and held at the Victoria and Albert Museum, London, 1946. Designed by B. G. Bowden* [Photograph]. At: London. Design Council Slide Collection.

```
@image{anon1946peb,  
  author = {Anon.},  
  year = {1946},  
  title = {Prototype electric bicycle displayed at the \enquote{Britain Can Make It} exhibition  
    organised by the {Council} of {Industrial} {Design} and held at the {Victoria} and {Albert}  
    {Museum}, {London}, 1946. {Designed} by {B.~G.} {Bowden}},  
  titleaddon = {Photograph},  
  address = {London},  
  library = {Design Council Slide Collection}}
```

RI

 Use the **library** field to record the archive and register number. If you also wish to provide the name of the organisation that published the image, use the **publisher** field if the location you provide relates to the publisher, but the **organization** field if the location relates to the archive.



Map

-  Andrews, J. and Dury, A., 1773. *Map of Wiltshire*, 1 inch to 2 miles. Devizes: Wiltshire Record Society.
-  Andrews, J. and Dury, A., 1773. *Map of Wiltshire*. 1 inch to 2 miles. Devizes: Wiltshire Record Society.

```
@manual{andrews.dury1773wilts,  
  author = {Andrews, J. and Dury, A.},  
  year = {1773},  
  title = {Map of {Wiltshire}},  
  series = {1 inch to 2 miles},  
  address = {Devizes},  
  publisher = {Wiltshire Record Society}}
```



RX

 The book entry type would also work for this reference.

-  Ordnance Survey, 2020. *Street view map of University of Bath* [Online], 1:5000, OS VectorMap® Local. Available from: <https://digimap.edina.ac.uk/roam/map/os> [Accessed 30 April 2020].
-  Ordnance Survey, 2020. *Street view map of University of Bath* [Online]. 1:5000, OS VectorMap® Local. Available from: <https://digimap.edina.ac.uk/roam/map/os> [Accessed 30 April 2020].

```
@manual{os2020bath,  
  author = {{Ordnance Survey}},  
  year = {2020},  
  title = {Street view map of {University of Bath}},  
  series = {1:5000, OS VectorMap® Local},  
  url = {https://digimap.edina.ac.uk/roam/map/os},  
  urlyear = {30 April 2020}}
```



RX

-  Google, 2020. *Harbourside, Bristol* [Online], Google Maps. Available from: <https://www.google.co.uk/maps/place/Harbourside,+Bristol/> [Accessed 30 April 2020].
-  Google, 2020. *Harbourside, Bristol* [Online]. Google Maps. Available from: <https://www.google.co.uk/maps/place/Harbourside,+Bristol/> [Accessed 2020-04-30].

```
@manual{google2020harbourside,  
  author = {{Google}},  
  year = {2020},  
  title = {{Harbourside, Bristol}},  
  series = {Google Maps},  
  url = {https://www.google.co.uk/maps/place/Harbourside,+Bristol/},  
  urldate = {2020-04-30}}
```


RX

Film, video or DVD

-  *Macbeth*, 1948. Film. Directed by Orson Welles. USA: Republic Pictures.
-  *Macbeth*, 1948. Film. Directed by Orson Welles. USA: Republic Pictures.

```
@video{macbeth1948,  
  year = {1948},  
  title = {Macbeth},  
  type = {Film},  
  note = {Directed by Orson Welles},  
  address = {USA},  
  publisher = {Republic Pictures}}
```

RX

 Internally, movie and video are aliases for booklet.

Streamed video (YouTube, TED Talks, etc.)

📺 Moran, C., 2016. *Save our libraries* [Online]. Available from: <https://www.youtube.com/watch?v=gKTfCz4JtVE&feature=youtu.be> [Accessed 29 April 2016].

⚙️ Moran, C., 2016. *Save our libraries* [Online]. Available from: <https://www.youtube.com/watch?v=gKTfCz4JtVE&feature=youtu.be> [Accessed 29 April 2016].

```
@video{moran2016sol,  
  author = {Moran, C.},  
  year = {2016},  
  title = {Save Our Libraries},  
  url = {https://www.youtube.com/watch?v=gKTfCz4JtVE&feature=youtu.be},  
  urlyear = {29 April 2016}}
```

RX

📺 University of Bath, 2015. *What is engineering?* [Online]. Available from: <https://www.youtube.com/watch?v=NoyZarq-Zbo> [Accessed 12 January 2016].

⚙️ University of Bath, 2015. *What is engineering?* [Online]. Available from: <https://www.youtube.com/watch?v=NoyZarq-Zbo> [Accessed 12 January 2016].

```
@video{uob2015wie,  
  author = {{University of Bath}},  
  year = {2015},  
  title = {What is Engineering?},  
  url = {https://www.youtube.com/watch?v=NoyZarq-Zbo},  
  urlyear = {12 January 2016}}
```

RI

📺 Chakrabarti, V., 2016. *How architecture and city planning can combat social inequality* [Online]. Available from: <https://www.curbed.com/2016/5/5/11593058/vishaan-chakrabarti-pau-curbed-appeal-podcast> [Accessed 28 March 2019].

⚙️ Chakrabarti, V., 2016. *How architecture and city planning can combat social inequality* [Online]. Available from: <https://www.curbed.com/2016/5/5/11593058/vishaan-chakrabarti-pau-curbed-appeal-podcast> [Accessed 28 March 2019].

```
@audio{chakrabarti2016hac,  
  author = {Chakrabarti, V.},  
  year = {2016},  
  title = {How Architecture and City Planning Can Combat Social Inequality},  
  url = {https://www.curbed.com/2016/5/5/11593058/vishaan-chakrabarti-pau-curbed-appeal-podcast},  
  urlyear = {28 March 2019}}
```

RI

Television or radio broadcast

📺 *Rick Stein's French odyssey: Episode 5*, 2006. TV. BBC2, 23 August. 20.30 hrs.

⚙️ *Rick Stein's French odyssey: Episode 5*, 2006. TV. BBC2, 23 August. 20.30 hrs.

```
@video{rsfo2006ep5,  
  year = {2006},  
  title = {Rick {Stein's} {French} Odyssey: Episode 5},  
  type = {TV},  
  note = {BBC2, 23 August. 20.30 hrs}}
```

RX

- 📖 *The Archers*, 2006. Radio. BBC Radio 4, 23 August. 19.02 hrs.
- ⚙️ *The Archers*, 2006. Radio. BBC Radio 4, 23 August. 19.02 hrs.

```
@audio{archers20060823,
  year = {2006},
  title = {The {Archers}},
  type = {Radio},
  note = {BBC Radio 4, 23 August. 19.02 hrs}}
```

RX

💡 Use `type` for the medium and `note` for the channel, date and time.

❗ Internally, `audio` and `music` are aliases for `booklet`.

Music score

- 📖 Beethoven, L. van, 1950. *Symphony no.1 in C, Op.21*. Harmondsworth: Penguin.
- ⚙️ Beethoven, L. van, 1950. *Symphony no.1 in C, Op.21*. Harmondsworth: Penguin.

```
@book{beethoven1950symp1,
  author = {Ludwig van Beethoven},
  year = {1950},
  title = {Symphony no.1 in {C,} {Op.21}},
  address = {Harmondsworth},
  publisher = {Penguin}}
```

RX

4.6 Digital media

Website/webpage

While it is normal when using BibTeX to use `misc` for websites, with this style you should use `online` (or `electronic` or `www`) instead. Internally these are all aliases for `manual`.

- 📖 Holland, M., 2002. *Guide to citing internet sources* [Online]. Poole: Bournemouth University. Available from: http://www.bournemouth.ac.uk/library/using/guide_to_citing_internet_sourc.html [Accessed 4 November 2002].
- ⚙️ Holland, M., 2002. *Guide to citing internet sources* [Online]. Poole: Bournemouth University. Available from: http://www.bournemouth.ac.uk/library/using/guide_to_citing_internet_sourc.html [Accessed 4 November 2002].

```
@online{holland2002gci,
  author = {Holland, M.},
  year = {2002},
  title = {Guide to Citing Internet Sources},
  address = {Poole},
  organization = {Bournemouth University},
  url = {http://www.bournemouth.ac.uk/library/using/guide_to_citing_internet_sourc.html},
  urlyear = {4 November 2002}}
```

RX

Email discussion lists (jiscmail/listserv etc.)

📖 Clark, T., 5 July 2004. A European UK Libraries Plus? *Lis-link* [Online]. Available from: lis-link@jiscmail.ac.uk [Accessed 30 July 2004].

⚙️ Clark, T., 5 July 2004. A European UK Libraries Plus? *Lis-link* [Online]. Available from: lis-link@jiscmail.ac.uk [Accessed 30 July 2004].

```
@letter{clark2004euk,
  author = {Clark, T.},
  year = {5 July 2004},
  title = {A {European} {UK} {Libraries} {Plus}?},
  journal = {Lis-link},
  url = {lis-link@jiscmail.ac.uk},
  urlyear = {30 July 2004}}
```

RX

💡 Use the `journal` field to specify the mailing list. Internally, a `letter` entry with a `journal` field is treated like an `article` entry, while one without is treated like an `unpublished` entry.

🔧 You will need to put the full date in the `year` field; unfortunately this means you have to put in extra work to show only the year in citations:

```
\citetext{\citeauthor[2004]{clark2004euk}}
```

(Clark, 2004)

Database

📖 Bureau van Dijk, 2008. *BT Group plc company report. FAME* [Online]. London: Bureau van Dijk. Available from: <http://www.portal.euromonitor.com> [Accessed 6 November 2014].

⚙️ Bureau van Dijk, 2008. *BT Group plc company report. FAME* [Online]. London: Bureau van Dijk. Available from: <http://www.portal.euromonitor.com> [Accessed 6 November 2014].

```
@dataset{bvd2008bt,
  author = {{Bureau van Dijk}},
  year = {2008},
  title = {{BT} {Group} PLC Company Report},
  library = {FAME},
  address = {London},
  publisher = {Bureau van Dijk},
  url = {http://www.portal.euromonitor.com},
  urlyear = {6 November 2014}}
```

RX

Dataset

📖 Wilson, D., 2013. *Real geometry and connectedness via triangular description: CAD example bank* [Online]. Bath: University of Bath. Available from: <https://doi.org/10.15125/BATH-00069> [Accessed 20 April 2016].

⚙️ Wilson, D., 2013. *Real geometry and connectedness via triangular description: CAD example bank* [Online]. Bath: University of Bath. Available from: <https://doi.org/10.15125/BATH-00069> [Accessed 20 April 2016].

```
@dataset{wilson2013rgc,
  author = {Wilson, D.},
  year = {2013},
  title = {Real Geometry and Connectedness via Triangular Description: {CAD} Example Bank},
  address = {Bath},
  publisher = {University of Bath},
  doi = {10.15125/BATH-00069},
  urlyear = {20 April 2016}}
```

RX

❗ You can use `dataset` instead of `online` as an alias for `manual`.

Computer program

📖 @screencasto, n.d. *Screencast-O-Matic* (v.2) [computer program]. Available from: <https://screencast-o-matic.com/> [Accessed 16 May 2016].
⚙ @screencasto, n.d. *Screencast-O-Matic* (v.2) [computer program]. Available from: <https://screencast-o-matic.com/> [Accessed 16 May 2016].

```
@software{screencasto,  
  author = {@screencasto},  
  title = {{Screencast-O-Matic}},  
  version = {2},  
  titleaddon = {computer program},  
  url = {https://screencast-o-matic.com/},  
  urlyear = {16 May 2016}}
```

RX

❗ Internally, `software` is an alias for `manual`.

4.7 Works in languages other than English

Work in translation

📖 Aristotle, 2007. *Nicomachean ethics* (W.D. Ross, Trans.). South Dakota: NuVisions.
⚙ Aristotle, 2007. *Nicomachean ethics* (W.D. Ross, Trans.). South Dakota: NuVisions.

```
@book{aristotle2007ne,  
  author = {Aristotle},  
  year = {2007},  
  title = {Nicomachean Ethics},  
  translator = {W. D. Ross},  
  address = {South Dakota},  
  publisher = {NuVisions}}
```

RX

Work in the Roman alphabet

📖 Esquivel, L., 2003. *Como agua para chocolate* [Like water for chocolate]. Barcelona: Debolsillo.
⚙ Esquivel, L., 2003. *Como agua para chocolate* [Like water for chocolate]. Barcelona: Debolsillo.

```
@book{esquivel2003cap,  
  author = {Esquivel, L.},  
  year = {2003},  
  title = {Como Agua para Chocolate},  
  titleaddon = {Like water for chocolate},  
  address = {Barcelona},  
  publisher = {Debolsillo}}
```

RX

- 📖 Thurfjell, W., 1975. Vart har våran doktor tagit vägen? [Where has our doctor gone?]. *Läkartidningen*, 72, p.789.
- ⚙ Thurfjell, W., 1975. Vart har våran doktor tagit vägen? [Where has our doctor gone?]. *Läkartidningen*, 72, p.789.

```
@article{thurfjell1975vhv,
  author = {Thurfjell, W.},
  year = {1975},
  title = {Vart har våran doktor tagit vägen?},
  titleaddon = {Where has our doctor gone?},
  journal = {Läkartidningen},
  volume = {72},
  pages = {789}}
```

RX

Work in a non-Roman alphabet

- 💡 The following example tricks BibTeX into treating the original rendering of the author's name as the 'von' part of a Roman-alphabet name. This requires the use of a command that simply gobbles its argument, which you have to define yourself:

```
\newcommand*{\noop}[1]{}%
```

For the trick to work, the argument you give to `\noop` must be lowercase, but otherwise it can be anything you like.

- 📖 Hua, L. 華林甫, 1999. Qingdai yilai Sanxia diqu shuihan zaihai de chubu yanjiu 清代以來三峽地區水旱災害的初步研 [A preliminary study of floods and droughts in the Three Gorges region since the Qing dynasty]. *Zhongguo shehui kexue* 中國社會科學, 1, pp.168–79.
- ⚙ Hua, L. 華林甫, 1999. Qingdai yilai Sanxia diqu shuihan zaihai de chubu yanjiu 清代以來三峽地區水旱災害的初步研 [A preliminary study of floods and droughts in the Three Gorges region since the Qing dynasty]. *Zhongguo shehui kexue* 中國社會科學, 1, pp.168–79.

```
@article{hua1999qys1,
  author = {Linfu \noop{h}華林甫 Hua},
  year = {1999},
  title = {Qingdai yilai {Sanxia} diqu shuihan zaihai de chubu yanjiu
    {清代以來三峽地區水旱災害的初步研}},
  titleaddon = {A preliminary study of floods and droughts in the {Three} {Gorges} region since
    the {Qing} dynasty},
  journal = {Zhongguo shehui kexue \textup{中國社會科學}},
  volume = {1},
  pages = {168-79}}
```

RX

- 💡 If the name is due to appear initial first (e.g. after 'In:'), you can append the non-Roman characters to the author's surname; to do this, use inverted name order as you would for English double-barrelled names without hyphens, e.g. Hua 華林甫, Linfu.

📖 Hua, L., 1999. Qingdai yilai Sanxia diqu shuihan zaihai de chubu yanjiu [A preliminary study of floods and droughts in the Three Gorges region since the Qing dynasty]. *Zhongguo shehui kexue*, 1, pp.168–79.

⚙️ Hua, L., 1999. Qingdai yilai Sanxia diqu shuihan zaihai de chubu yanjiu [A preliminary study of floods and droughts in the Three Gorges region since the Qing dynasty]. *Zhongguo shehui kexue*, 1, pp.168–79.

```
@article{hua1999qys2,
  author = {Hua, Linfu},
  year = {1999},
  title = {Qingdai yilai {Sanxia} diqu shuihan zaihai de chubu yanjiu},
  titleaddon = {A preliminary study of floods and droughts in the {Three} {Gorges} region since the {Qing} dynasty},
  journal = {Zhongguo shehui kexue},
  volume = {1},
  pages = {168-79}}
```

RX

📖 Pamporov, A., 2006. *Romskoto vsekidnevie v Balgariya* [Roma everyday life in Bulgaria]. Veliko Tarnovo: Faber.

⚙️ Pamporov, A., 2006. *Romskoto vsekidnevie v Balgariya* [Roma everyday life in Bulgaria]. Veliko Tarnovo: Faber.

```
@book{pamporov2006rvb,
  author = {Pamporov, A.},
  year = {2006},
  title = {Romskoto vsekidnevie v {Balgariya}},
  titleaddon = {Roma everyday life in Bulgaria},
  address = {Veliko Tarnovo},
  publisher = {Faber}}
```

RX

4.8 Legal references: UK legislation and parliamentary reports

Act of Parliament (UK Statutes) before 1963

📖 *Witchcraft Act 1735* (9 Geo.2, c.5).

⚙️ *Witchcraft Act 1735* (9 Geo.2, c.5).

```
@legislation{gb.wa1735,
  title = {Witchcraft {Act}},
  year = {1735},
  series = {9 Geo.2},
  chapter = {5}}
```

RX

Act of Parliament (UK Statutes) 1963 onwards



📖 *Pensions Act 2014*, c.19. London: TSO.

⚙️ *Pensions Act 2014*, c.19. London: TSO.

```
@legislation{gb.pa2014,
  title = {Pensions {Act}},
  year = {2014},
  chapter = {19},
  address = {London},
  publisher = {TSO}}
```

RX



House of Commons/House of Lords bill

-  Great Britain. Parliament. House of Commons, 1988. *Local government finance bill*. (Bills | 1987/88, 66). London: HMSO.
-  Great Britain. Parliament. House of Commons, 1988. *Local government finance bill*. (Bills | 1987/88, 66). London: HMSO.

```
@legislation{gb.bill1987/88-66,  
  author = {{Great Britain. Parliament. House of Commons}},  
  year = {1988},  
  title = {Local Government Finance Bill},  
  address = {London},  
  publisher = {HMSO},  
  series = {{Bills | 1987/88}},  
  number = {66}}
```

RX

Statutory instrument

-  *The Human Medicines Regulations 2012* [Online], No.1916, United Kingdom: HMSO. Available from: http://www.legislation.gov.uk/uksi/2012/1916/pdfs/uksi_20121916_en.pdf [Accessed 17 April 2016].
-  *The Human Medicines Regulations 2012* [Online], No.1916, United Kingdom: HMSO. Available from: http://www.legislation.gov.uk/uksi/2012/1916/pdfs/uksi_20121916_en.pdf [Accessed 17 April 2016].



```
@legislation{gb.hmr2012,  
  entrysubtype = {secondary},  
  title = {The {Human} {Medicines} {Regulations}},  
  year = {2012},  
  number = {No.1916},  
  address = {United Kingdom},  
  publisher = {HMSO},  
  url = {http://www.legislation.gov.uk/uksi/2012/1916/pdfs/uksi_20121916_en.pdf},  
  urlyear = {17 April 2016}}
```

RX

💡 Use the entrysubtype 'secondary' to put the number in the right place.

House of Commons paper

Use this form for reports of House of Commons select committees.

-  Great Britain. Parliament. House of Commons, 2004. *National Savings investment deposits: account 2002–2003*. (HC 2003/04, 30). London: National Audit Office.
-  Great Britain. Parliament. House of Commons, 2004. *National Savings investment deposits: account 2002–2003*. (HC 2003/04, 30). London: National Audit Office.

```
@techreport{gb.hc2003/04-30,  
  author = {{Great Britain. Parliament. House of Commons}},  
  year = {2004},  
  title = {National {Savings} Investment Deposits: account 2002--2003},  
  address = {London},  
  publisher = {National Audit Office},  
  series = {HC 2003/04},  
  number = {30}}
```

RX

House of Lords paper

Use this form for reports of House of Lords select committees.

- 📖 Great Britain. Parliament. House of Lords, 1987. *Social fund (maternity and funeral expenses) bill*. (HL 1986/87, (66)). London: HMSO.
- ⚙️ Great Britain. Parliament. House of Lords, 1987. *Social fund (maternity and funeral expenses) bill*. (HL 1986/87, (66)). London: HMSO.

```
@techreport{gb.hl1986/87-66,
  author = {{Great Britain. Parliament. House of Lords}},
  year = {1987},
  title = {Social Fund (Maternity and Funeral Expenses) Bill},
  address = {London},
  publisher = {HMSO},
  series = {HL 1986/87},
  number = {66}}
```

RX

- 🔑 For joint committees, you will have to hack this slightly, putting the session years in **series** and the HL and HC numbers in **number**.

Command paper

- 📖 Great Britain. Ministry of Defence, 2004. *Delivering security in a changing world: defence white paper*. (Cm. 6041). London: TSO.
- ⚙️ Great Britain. Ministry of Defence, 2004. *Delivering security in a changing world: defence white paper*. (Cm. 6041). London: TSO.

```
@techreport{gb.cm6041,
  author = {{Great Britain. Ministry of Defence}},
  year = {2004},
  title = {Delivering Security in a Changing World{:} Defence White Paper},
  address = {London},
  publisher = {TSO},
  series = {Cm},
  number = {6041}}
```

RX

4.9 Legal references: EU legislation and reports

EU regulation or directive, decision, recommendation or opinion

- 📖 Council Regulation (EC) 1984/2003 of 8 April 2003 introducing a system for the statistical monitoring of trade in bluefin tuna, swordfish and big eye tuna within the Community [2003] *OJ* L295.
- ⚙️ Council Regulation (EC) 1984/2003 of 8 April 2003 introducing a system for the statistical monitoring of trade in bluefin tuna, swordfish and big eye tuna within the Community [2003] *OJ* L295.

```
@legislation{eu.dir1984/2003,
  title = {Council {Regulation} ({EC}) 1984/2003 of 8 {April} 2003 Introducing a System for the Statistical Monitoring of Trade in Bluefin Tuna, Swordfish and Big Eye Tuna within the {Community}},
  year = {2003},
  journal = {OJ},
  series = {L},
  volume = {295}}
```

RX

- 🔑 Use `\defcitealias` to provide a suitable citation string:

<pre>\defcitealias{eu.dir1984/2003}{% Council Regulation [EC] 1984/2003} \citealias{eu.dir1984/2003}</pre>	<p>(Council Regulation [EC] 1984/2003)</p>
--	--

EU publication

- 📖 European Commission, 2015. *General report on the activities of the European Union 2014*. Luxembourg: Publications Office of the European Union.
- ⚙️ European Commission, 2015. *General report on the activities of the European Union 2014*. Luxembourg: Publications Office of the European Union.

```
@techreport{ec2015gra,  
  author = {{European Commission}},  
  year = {2015},  
  title = {General Report on the Activities of the {European} {Union} 2014},  
  address = {Luxembourg},  
  publisher = {Publications Office of the European Union}}
```

RX

4.10 Legal references: case reports

Legal case study

- 📖 *Seldon v. Clarkson Wright & Jakes*. [2012]. UKSC 16.
- ⚙️ *Seldon v. Clarkson Wright & Jakes*. [2012]. UKSC 16.

```
@jurisdiction{seldon-v-c.w.j2012,  
  title = {Seldon v.~{Clarkson} {Wright} \& {Jakes}},  
  year = {2012},  
  journal = {UKSC},  
  pages = {16}}
```

RX

- ❗ Generally speaking, the year should be in square brackets if it is essential to the citation (unless it is a Scottish case, in which case it is printed bare), and in parentheses if it is not.
- 💡 The style assumes the year is essential if and only if a volume number is *not* provided; to override this, you can use the **year-essential** option:

```
options = {year-essential=true},
```

To use Scottish style for a case, you can either use the **scottish-style** option or the keyword **sc**.


```
options = {scottish-style},  
keywords = {sc},
```

- ❗ Please bear in mind that the **options** and **keywords** fields from **biblatex** have been emulated rather crudely. You can only supply one of each and the text must match exactly (so don't add spaces or anything like that).
- 🔧 This should cover most cases, but legal references tend to enforce their own conventions no matter what the rest of the reference list is doing, and it is out of scope for this style to cater for every variation. Therefore if you need a different format (e.g. for an American case), you may prefer to format the reference more-or-less by hand:

```
title = {Seldon v.~{Clarkson} {Wright} \& {Jakes}},  
sortyear = {2012},  
note = {[2012]. UKSC 16}
```

Judgment of the European Court of Justice

 *Alessandrini Srl and others v. Commission* (C-295/03 P) [2005] ECR I–5700.

 *Alessandrini Srl and others v. Commission* (C-295/03 P) [2005] ECR I–5700.

```
@jurisdiction{srl.etal-v-comm2005,  
  title = {Alessandrini {Srl} and others v.~{Commission}},  
  number = {C-295/03 P},  
  year = {2005},  
  journal = {ECR},  
  volume = {I},  
  pages = {5700}}
```

RX

💡 Use the **number** field (or the non-standard **casenumber** field) for the case number. For Commission Decisions, use the (non-standard) **casenumber** or (bibtex-oscola) **userb** field for the Commission case number, **number** for the formal decision number, and give ‘Commission’ as the **institution**.

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5 Implementation

The line numbers for the listings below match `bathx.bst`.

5.1 Data model

We begin by listing the entry fields that we will recognize. These are the standard BibTeX ones plus `archive`, `doi`, `eid`, `eprint`, `entrysubtype`, `eventyear`, `keywords`, `language`, `library`, `options`, `pubstate`, `sortyear`, `titleaddon`, `translator`, `url`, `urldate`, `urlyear`, `userb`, `venue`, and `version`, all of which have been backported from `natbib` and `biblatex`. `casenumber` is specific to this style.

```
16 ENTRY
17 { address
18   archive
19   author
20   booktitle
21   casenumber
22   chapter
23   doi
24   edition
25   editor
26   eid
27   entrysubtype
28   eprint
29   eventyear
30   howpublished
31   institution
32   journal
33   key
34   keywords
35   language
36   library
37   month
38   note
39   number
40   options
41   organization
42   pages
43   publisher
44   pubstate
45   school
46   series
47   sortyear
48   title
49   titleaddon
50   translator
51   type
52   url
53   urldate
54   urlyear
55   userb
56   venue
57   version
58   volume
59   year
60 }
61 {}
62 { label extra.label sort.label short.list }
```

5.2 Writing references out to a file

We define a set of integers for saving an output state. We will use them to to implement the mechanism for stringing the elements of the reference together. Whenever an element is printed, it is separated from any previous previous text by a delimiter, and the delimiter chosen depends on the state. We define five states which trigger increasingly strong delimiters.

```

63 INTEGERS { output.state before.all mid.clause mid.sentence after.sentence after.block }
64 FUNCTION {init.state.consts}
65 { #0 'before.all :=
66   #1 'mid.clause :=
67   #2 'mid.sentence :=
68   #3 'after.sentence :=
69   #4 'after.block :=
70 }

```

We also define two variables to store strings in.

```

71 STRINGS { s t }

```

The `output.nonnull` function removes an element from the stack, writes the appropriate delimiter to the `.bbl` file depending on the state, then restores the original element. Afterwards, the output state is set to `mid.sentence`.

- `before.all` = nothing is written.
- `mid.clause` = a space is written.
- `mid.sentence` = a comma is written.
- `after.sentence` = a period is written.
- `after.block` = a period, line break and `\newblock` are written.

```

72 FUNCTION {output.nonnull}
73 { 's :=
74   output.state mid.sentence =
75   { ", " * write$ }
76   { output.state after.sentence =
77     { add.period$ " " * write$ }
78     { output.state before.all =
79       'write$
80       { output.state mid.clause =
81         { " " * write$ }
82         { add.period$ write$
83           newline$
84           "\newblock " write$
85         }
86       } if$
87     } } if$
88   } if$
89 }
90 if$
91 mid.sentence 'output.state :=
92 }
93 if$
94 s
95 }

```

The ‘after’ output states persist if nothing is printed. The ‘mid.clause’ state shouldn’t, so we provide a macro for reverting to ‘mid.sentence’.

```

96 FUNCTION {end.clause}
97 { output.state mid.clause =
98   { mid.sentence 'output.state := }
99   'skip$
100 if$
101 }

```

Before writing anything out, we need to make sure there is something to be printed. We provide two functions for this: `output` is silent, while `output.check` will write a warning to the log that the field is empty. The latter consumes an additional string (at the top of the stack) for printing in the warning message.

```

102 FUNCTION {output}
103 { duplicate$ empty$
104   { pop$ end.clause }

```

```

105     'output.nonnull
106     if$
107 }
108 FUNCTION {output.check}
109 { 't :=
110   duplicate$ empty$
111   { pop$ "empty " t * " in " * cite$ * warning$
112     end.clause
113   }
114   'output.nonnull
115   if$
116 }

```

We provide some convenience functions for changing the state from `mid.sentence`. The order of precedence is `before.all`, `after.block`, `after.sentence`, `mid.clause`/`mid.sentence`.

```

117 FUNCTION {new.block}
118 { output.state before.all =
119   'skip$
120   { after.block 'output.state := }
121   if$
122 }
123 FUNCTION {new.sentence}
124 { output.state after.block =
125   'skip$
126   { output.state before.all =
127     'skip$
128     { after.sentence 'output.state := }
129     if$
130   }
131   if$
132 }
133 FUNCTION {continue.clause}
134 { output.state after.sentence =
135   'skip$
136   { output.state after.block =
137     'skip$
138     { output.state before.all =
139       'skip$
140       { mid.clause 'output.state := }
141       if$
142     }
143     if$
144   }
145   if$
146 }

```

The `date.block` function is a handy alias.

```

147 FUNCTION {date.block}
148 { new.block
149 }

```

The `bibinfo` functions consume two tokens: the value and name of a field respectively. If the value is non-null, it is written out to the `.bbl` file in the form `\bibinfo{field name}{field value}`. If the value is missing, the tokens are replaced with an empty string; if the value is empty, it is put back on the stack. The `check` version does this silently, while the `warn` version issues warnings in the log file if the value is missing or empty.

```

150 FUNCTION {bibinfo.check}
151 { swap$
152   duplicate$ missing$
153   { pop$ pop$
154     ""
155   }
156   { duplicate$ empty$
157     { swap$ pop$
158     }
159     { swap$
160       "\bibinfo{" swap$ * "}{ " * swap$ * "}" *

```

```

161     }
162     if$
163   }
164   if$
165 }
166 FUNCTION {bibinfo.warn}
167 { swap$
168   duplicate$ missing$
169   { swap$ "missing " swap$ * " in " * cite$ * warning$ pop$
170     ""
171   }
172   { duplicate$ empty$
173     { swap$ "empty " swap$ * " in " * cite$ * warning$
174     }
175     { swap$
176       "\bibinfo{" swap$ * "}{ " * swap$ * "}" *
177     }
178     if$
179   }
180   if$
181 }

```

At the end of the reference, `fin.entry` writes out a final period and line break. We will handle the start of the reference a bit later.

```

182 FUNCTION {fin.entry}
183 { add.period$
184   write$
185   newline$
186 }

```

5.3 Convenience functions

We define some useful logical operations for use with `if$`.

```

188 FUNCTION {not}
189 { { #0 }
190   { #1 }
191   if$
192 }
193 FUNCTION {and}
194 { 'skip$
195   { pop$ #0 }
196   if$
197 }
198 FUNCTION {or}
199 { { pop$ #1 }
200   'skip$
201   if$
202 }

```

`new.block.checkb` consumes two tokens and starts a new block if at least one is non-empty.

```

203 FUNCTION {new.block.checkb}
204 { empty$
205   swap$ empty$
206   and
207   'skip$
208   'new.block
209   if$
210 }

```

`field.or.null` replaces an empty (null) field value with an empty string.

```

211 FUNCTION {field.or.null}
212 { duplicate$ empty$
213   { pop$ "" }
214   'skip$
215   if$
216 }

```

The `emphasize` function applies emphasis.

```
217 FUNCTION {emphasize}
218 { duplicate$ empty$
219   { pop$ "" }
220   { "\emph{" swap$ * "}" * }
221   if$
222 }
```

The `tie.or.space.prefix` function prefixes a string with a non-breaking space if it is up to three characters long, or a normal space otherwise.

```
223 FUNCTION {tie.or.space.prefix}
224 { duplicate$ text.length$ #3 <
225   { "~" }
226   { " " }
227   if$
228   swap$
229 }
```

The `capitalize` function makes putting strings into sentence case a little more robust.

```
230 FUNCTION {capitalize}
231 { "u" change.case$ "t" change.case$ }
```

The `space.word` function adds a space to either side of a string.

```
232 FUNCTION {space.word}
233 { " " swap$ * " " * }
```

`either.or.check` takes a string and a field, and if the field is not empty, writes a warning to the log file.

```
234 FUNCTION {either.or.check}
235 { empty$
236   'pop$
237   { "can't use both " swap$ * " fields in " * cite$ * warning$ }
238   if$
239 }
```

`is.online` checks whether the entry should have '[Online]' in it somewhere.

```
240 FUNCTION {is.online}
241 { url empty$ doi empty$ and
242   { type$ "online" =
243     { #1 }
244     { #0 }
245     if$
246   }
247   { #1 }
248   if$
249 }
```

5.4 Bibliography strings

Instead of dropping literal English words into the text of references, we will use these functions instead. This makes it easier to translate the style into other languages.

```
250 FUNCTION {bbl.and}
251 { "and" }
252
253 FUNCTION {bbl.byeditor}
254 { "Ed. by" }
255
256 FUNCTION {bbl.etal}
257 { "et-al." }
258
259 FUNCTION {bbl.editors}
260 { "eds" }
```



```

261
262 FUNCTION {bbl.editor}
263 { "ed." }
264
265 FUNCTION {bbl.edby}
266 { "edited by" }
267
268 FUNCTION {bbl.translator}
269 { "Trans." }
270
271 FUNCTION {bbl.edition}
272 { "ed." }
273
274 FUNCTION {bbl.volume}
275 { "vol." }
276
277 FUNCTION {bbl.of}
278 { "of" }
279
280 FUNCTION {bbl.number}
281 { "no." }
282
283 FUNCTION {bbl.nr}
284 { "no." }
285
286 FUNCTION {bbl.in}
287 { "in" }
288
289 FUNCTION {bbl.pages}
290 { "pp." }
291
292 FUNCTION {bbl.page}
293 { "p." }
294
295 FUNCTION {bbl.chapter}
296 { "chap." }
297
298 FUNCTION {bbl.techrep}
299 { "Tech. Rep." }
300
301 FUNCTION {bbl.mthesis}
302 { "Master's thesis" }
303
304 FUNCTION {bbl.phdthesis}
305 { "Ph.D. thesis" }
306
307 FUNCTION {bbl.first}
308 { "1st" }
309
310 FUNCTION {bbl.second}
311 { "2nd" }
312
313 FUNCTION {bbl.third}
314 { "3rd" }
315
316 FUNCTION {bbl.fourth}
317 { "4th" }
318
319 FUNCTION {bbl.fifth}
320 { "5th" }
321
322 FUNCTION {bbl.st}
323 { "st" }
324
325 FUNCTION {bbl.nd}
326 { "nd" }
327
328 FUNCTION {bbl.rd}
329 { "rd" }
330
331 FUNCTION {bbl.th}
332 { "th" }
333

```

```

334 FUNCTION {bbl.commission}
335 { "Commission Decision" }
336
337 FUNCTION {bbl.online}
338 { "[Online]" }
339
340 FUNCTION {bbl.nodate}
341 { "n.d." }
342
343 FUNCTION {bbl.inpreparation}
344 { "preprint" }
345
346 FUNCTION {bbl.submitted}
347 { "preprint" }
348
349 FUNCTION {bbl.inpress}
350 { "in press" }
351
352 FUNCTION {bbl.unpublished}
353 { "Unpublished" }

```

These macros are codes that users can put in their .bib file instead of literal strings.

```

355 MACRO {jan} {"January"}
356
357 MACRO {feb} {"February"}
358
359 MACRO {mar} {"March"}
360
361 MACRO {apr} {"April"}
362
363 MACRO {may} {"May"}
364
365 MACRO {jun} {"June"}
366
367 MACRO {jul} {"July"}
368
369 MACRO {aug} {"August"}
370
371 MACRO {sep} {"September"}
372
373 MACRO {oct} {"October"}
374
375 MACRO {nov} {"November"}
376
377 MACRO {dec} {"December"}

```

This function allows us to convert cardinal numbers to English ordinals.

```

379 FUNCTION {eng.ord}
380 { duplicate$ "1" swap$ *
381   #-2 #1 substring$ "1" =
382     { bbl.th * }
383     { duplicate$ #-1 #1 substring$
384       duplicate$ "1" =
385         { pop$ bbl.st * }
386         { duplicate$ "2" =
387           { pop$ bbl.nd * }
388           { "3" =
389             { bbl.rd * }
390             { bbl.th * }
391             if$
392           }
393           if$
394         }
395         if$
396       }
397       if$
398     }

```

5.5 Name handling

`format.names` consumes two tokens (field, string field name) and returns a list of names in the form 'Surname, Suffix, Initials Prefix'. To help with this, we define some additional integers and strings.

```

400 INTEGERS { nameptr namesleft numnames }
401 STRINGS { bibinfo }
402 FUNCTION {format.names}
403 { 'bibinfo :=
404   duplicate$ empty$
405   'skip$
406   { 's :=
407     "" 't :=
408     #1 'nameptr :=
409     s num.names$ 'numnames :=
410     numnames 'namesleft :=
411     { namesleft #0 > }
412     { s nameptr
413       "{11}{, jj}{, f{.}.}{~vv}"
414       format.name$
415       bibinfo bibinfo.check
416       't :=
417       nameptr #1 >
418       { namesleft #1 >
419         { ", " * t * }
420         { s nameptr "{11}" format.name$ duplicate$ "others" =
421           { 't := }
422           { pop$ }
423           if$
424           t "others" =
425           { " " * bbl.etal *
426             }
427           { bbl.and
428             space.word * t *
429             }
430           if$
431           }
432           if$
433           }
434           't
435           if$
436           nameptr #1 + 'nameptr :=
437           namesleft #1 - 'namesleft :=
438           }
439           while$
440         }
441         if$
442       }

```

`format.names.ed` consumes two tokens (field, string field name) and writes out a list of names in the form 'Initials Prefix Surname Suffix'.

```

443 FUNCTION {format.names.ed}
444 { 'bibinfo :=
445   duplicate$ empty$
446   'skip$
447   { 's :=
448     "" 't :=
449     #1 'nameptr :=
450     s num.names$ 'numnames :=
451     numnames 'namesleft :=
452     { namesleft #0 > }
453     { s nameptr
454       "{f{.}.~}{vv~}{11}{ jj}"
455       format.name$
456       bibinfo bibinfo.check
457       't :=
458       nameptr #1 >
459       { namesleft #1 >
460         { ", " * t * }
461         { s nameptr "{11}" format.name$ duplicate$ "others" =

```

```

462         { 't := }
463         { pop$ }
464         if$
465         t "others" =
466         { " " * bbl.etal *
467         }
468         { bbl.and
469         space.word * t *
470         }
471         if$
472         }
473         if$
474         }
475         't
476         if$
477         nameptr #1 + 'nameptr :=
478         namesleft #1 - 'namesleft :=
479         }
480         while$
481     }
482     if$
483 }

```

format.authors returns author names.

```

484 FUNCTION {format.authors}
485 { author "author" format.names
486 }

```

format.byeditors returns editor names, and prepended by ‘Ed. by’.

```

487 FUNCTION {format.byeditors}
488 { editor "editor" format.names.ed duplicate$ empty$ 'skip$
489   { bbl.byeditor
490     " " *
491     swap$ *
492   }
493   if$
494 }

```

format.editors returns editor names, and appends ‘ed.’ or ‘eds’ as appropriate.

```

495 FUNCTION {get.bbl.editor}
496 { editor num.names$ #1 > 'bbl.editors 'bbl.editor if$ }
497 FUNCTION {format.editors}
498 { editor "editor" format.names duplicate$ empty$ 'skip$
499   { "," *
500     " " *
501     get.bbl.editor
502     *
503   }
504   if$
505 }

```

format.translators does likewise for translators, in the form ‘(name, Trans.)’.

```

506 FUNCTION {format.translators}
507 { translator "translator" format.names.ed duplicate$ empty$ 'skip$
508   { "," *
509     " " *
510     bbl.translator *
511     "(" swap$ *
512     ")" *
513   }
514   if$
515 }

```

format.full.names consumes one token (a name field) and, contrary to what the name might suggest, returns a list of names in the form ‘Prefix Surname’. It is called ‘full’ because the list is not truncated.

```

516 FUNCTION {format.full.names}
517 { 's :=
518   "" 't :=
519     #1 'nameptr :=
520     s num.names$ 'numnames :=
521     numnames 'namesleft :=
522     { namesleft #0 > }
523     { s nameptr
524       "{vv~}{ll}" format.name$
525       't :=
526       nameptr #1 >
527       { namesleft #1 >
528         { ", " * t * }
529         { s nameptr "{ll}" format.name$ duplicate$ "others" =
530           { 't := }
531           { pop$ }
532           if$
533           t "others" =
534             { " " * bbl.etal *
535             }
536             { bbl.and
537               space.word * t *
538             }
539           if$
540         }
541         if$
542       }
543       't
544       if$
545       nameptr #1 + 'nameptr :=
546       namesleft #1 - 'namesleft :=
547     }
548   while$
549 }

```

`author.editor.key.full` returns the author part of an author–year citation. In order of preference, it outputs the author surnames, editor surnames, the `key` field, or the first three characters of the entry key. It is used in `book` and `inbook` entry types.

```

550 FUNCTION {author.editor.key.full}
551 { author empty$
552   { editor empty$
553     { key empty$
554       { cite$ #1 #3 substring$ }
555       'key
556       if$
557     }
558     { editor format.full.names }
559     if$
560   }
561   { author format.full.names }
562   if$
563 }

```

`editor.key.full` does similar but skips the author names. It is used for the `proceedings` entry type.

```

564 FUNCTION {editor.key.full}
565 { editor empty$
566   { key empty$
567     { cite$ #1 #3 substring$ }
568     'key
569     if$
570   }
571   { editor format.full.names }
572   if$
573 }

```

`author.key.full` does similar but skips the editor names. It is used for all other entry types.

```

574 FUNCTION {author.key.full}
575 { author empty$
576   { key empty$
577     { cite$ #1 #3 substring$ }
578     'key
579     if$
580   }
581   { author format.full.names }
582   if$
583 }

```

make.full.names chooses between the above.

```

584 FUNCTION {make.full.names}
585 { type$ "book" =
586   type$ "inbook" =
587   or
588     'author.editor.key.full
589     { type$ "proceedings" =
590       'editor.key.full
591       'author.key.full
592       if$
593     }
594   if$
595 }

```

output.bibitem writes out the very start of the entry in the bibliography, which looks like `\bibitem[{author–year elements}]{entry key}`. The author–year part uses special natbib syntax: either ‘Author(Year)’ or ‘Truncated author list(Year)Full author list’. The `calc.label` function below supplies the truncated author list, opening parenthesis and year; you see here the closing parenthesis and conditional inclusion of the full list. The function then starts a new line and puts the entry driver into the `before.all` output state.

```

596 FUNCTION {output.bibitem}
597 { newline$
598   "\bibitem[{ write$
599   label write$
600   }]" make.full.names duplicate$ short.list =
601     { pop$ }
602     { * }
603     if$
604     "]" * write$
605     cite$ write$
606     "]" write$
607     newline$
608     ""
609     before.all 'output.state :=
610 }

```

format.key takes a field (author or editor). If the field is empty, it replaces it with the key field (if not non-null). Otherwise, replaces it with an empty string. It is used as an extra defence against an entry beginning with the date.

```

611 FUNCTION {format.key}
612 { empty$
613   { key field.or.null }
614   { "" }
615   if$
616 }

```

5.6 Titles

select.language checks if the field before was written out, and if so, wraps `{\selectlanguage{language}...}` around it.

```

617 FUNCTION {select.language}
618 { duplicate$ empty$
619   'pop$

```

```

620     { language empty$
621       'skip$
622       { "\selectlanguage{" language * "}" * swap$ * "}" * }
623       if$
624     }
625   if$
626 }

```

`format.title` returns the title and language fields, where the title should be in the upright shape.

```

627 FUNCTION {format.title}
628 { title
629   duplicate$ empty$ 'skip$
630   { "t" change.case$ }
631   if$
632   "title" bibinfo.check
633   duplicate$ empty$
634   'skip$
635   { select.language }
636   if$
637 }

```

`format.btitle` returns the title and language fields, where the title should be in the italic shape.

```

638 FUNCTION {format.btitle}
639 { title
640   duplicate$ empty$ 'skip$
641   { "t" change.case$ }
642   if$
643   "title" bibinfo.check
644   duplicate$ empty$ 'skip$
645   { emphasize
646     select.language
647   }
648   if$
649 }

```

`format.titleaddon` returns the titleaddon field.

```

650 FUNCTION {format.titleaddon}
651 { titleaddon
652   duplicate$ empty$ 'skip$
653   %<bst1> { "titleaddon" bibinfo.check }
654   %<bst2> { "[" swap$ "titleaddon" bibinfo.check * "]" * }
655   if$
656 }

```

`format.version` returns the version field.

```

657 FUNCTION {format.version}
658 { version
659   duplicate$ empty$ 'skip$
660   { "(v." swap$ *
661     "version" bibinfo.check
662     ")" *
663   }
664   if$
665 }

```

`get.title.addenda` is a convenience for writing out the elements that normally follow the title in `mid.clause` state.

```

666 FUNCTION {get.title.addenda}
667 { continue.clause
668   format.version output
669   continue.clause
670   format.titleaddon output
671   continue.clause

```

```

672 %<bst>
673 is.online
674 journal empty$
675 and
676 booktitle empty$
677   type$ "inreference" =
678   author empty$
679   and
680   or
681 and
682 library empty$
683   type$ "image" =
684   or
685 and
686 type$ "software" = not
687 and
688   type empty$
689   type$ "booklet" = not
690   type$ "audio" = not
691   and
692   type$ "video" = not
693   and
694   type$ "music" = not
695   and
696   type$ "movie" = not
697   and
698   or
699 and
700   { bbl.online output }
701   'skip$
702   if$
703   continue.clause
704 %</bst>
705   type$ "reference" =
706   { format.byeditors output }
707   'skip$
708   if$
709   format.translators output
710 }

```

word.in provides the 'In:' before book titles.

```

711 FUNCTION {word.in}
712 { bbl.in capitalize
713   ":" *
714   " " * }

```

format.label.booktitle returns the booktitle field upright

```

715 FUNCTION {format.label.booktitle}
716 { booktitle
717   duplicate$ empty$ 'skip$
718   { "t" change.case$ }
719   if$
720   "booktitle" bibinfo.check
721 }

```

format.booktitle returns the booktitle field in italics.

```

722 FUNCTION {format.booktitle}
723 { format.label.booktitle
724   emphasize
725 }

```

format.in.ed.booktitle returns the booktitle, prepended by 'In: editors, eds.'

```

726 FUNCTION {format.in.ed.booktitle}
727 { format.booktitle
728   duplicate$ empty$
729   'skip$
730   {

```



```

731 %<bst>
732     is.online
733     { " " *
734       bbl.online *
735     }
736     'skip$
737     if$
738 %</bst>
739     editor "editor" format.names.ed duplicate$ empty$ 'pop$
740     { " " *
741       " " *
742       get.bbl.editor add.period$
743       " " *
744       * swap$
745       *
746       word.in swap$ *
747     }
748     if$
749   }
750   if$
751 }

```

`legal.journal.shape` emphasizes the preceding string if it matches 'OJ' but otherwise does nothing.

```

752 FUNCTION {legal.journal.shape}
753 { duplicate$ "OJ" =
754   'emphasize
755   'skip$
756   if$
757 }

```

5.7 Dates

`nodate.check` looks at the most recent token. If it is empty, replaces it with 'n.d.' unless either `sortyear` or the `nonodate` option is present.

```

758 FUNCTION {nodate.check}
759 {
760   %<bst1> skip$
761   %<bst>
762   duplicate$ empty$
763   sortyear empty$
764   and
765   { options field.or.null "nonodate" =
766     'skip$
767     { pop$ bbl.nodate }
768     if$
769   }
770   'skip$
771   if$
772 %</bst>
773 }

```

`format.date` returns the year and any disambiguation label.

```

774 FUNCTION {format.date}
775 { year "year" bibinfo.check nodate.check
776   extra.label *
777 }

```

`format.jur.date` wraps the year and any disambiguation label in parentheses if a volume number is provided or if `year-essential=false` has been given as the `options`. If there is no volume number, or if `year-essential=true` has been given as the `options`, then the year will be wrapped in square brackets or, if `scottish-style` has been given as the `options` or `sc` as the `keywords`, left bare. But if the journal is 'OJ' or 'ECR', the date is wrapped in brackets regardless. Not complicated at all, really.

```

778 FUNCTION {format.date.brackets}
779 { format.date
780   "[" swap$ * "]" *
781 }
782 FUNCTION {format.date.parens}
783 { format.date
784   "(" swap$ * ")" *
785 }
786 FUNCTION {format.jur.date.essential}
787 { options field.or.null "scottish-style" =
788   keywords field.or.null "sc" =
789   or
790     'format.date
791     'format.date.brackets
792   if$
793 }
794 FUNCTION {format.jur.date}
795 { journal field.or.null 's :=
796   s "OJ" =
797   s "ECR" =
798   or
799     'format.date.brackets
800     { options field.or.null "year-essential=false" =
801       'format.date.parens
802       { volume empty$
803         'format.jur.date.essential
804         { options field.or.null "year-essential=true" =
805           'format.jur.date.essential
806           'format.date.parens
807         if$
808       }
809     } if$
810   }
811   if$
812 }
813 if$
814 }

```

`format.eu.date` wraps the year and any disambiguation label in square brackets if (and only if) the journal title is 'OJ' or 'ECR'.

```

815 FUNCTION {format.eu.date}
816 { journal field.or.null 's :=
817   s "OJ" =
818   s "ECR" =
819   or
820     'format.date.brackets
821     'format.date
822   if$
823 }

```

5.8 Series, volumes, editions

`format.bvolume` returns the volume and series information (in italics), with a comma between. A warning is given if `number` is also given.

```

824 FUNCTION {format.bvolume}
825 { volume empty$
826   { "" }
827   { bbl.volume volume tie.or.space.prefix
828     "volume" bibinfo.check * *
829     series "series" bibinfo.check
830     duplicate$ empty$ 'pop$
831     { emphasize " " * swap$ * }
832     if$
833     "volume and number" number either.or.check
834   }
835   if$
836 }

```

`format.number.series` returns an empty string if a volume has been specified. Otherwise, it

returns the series and the number separated by a space.

```

837 FUNCTION {format.number.series}
838 { volume empty$
839   { number empty$
840     { series field.or.null }
841     { series empty$
842       { number "number" bibinfo.check }
843       { series "series" bibinfo.check
844         number tie.or.space.prefix "number" bibinfo.check * *
845       }
846     } if$
847   }
848   if$
849 }
850 { "" }
851 if$
852 }

```

is.num converts a string to an integer and ensures it is in the range 0–9.

```

853 FUNCTION {is.num}
854 { chr.to.int$
855   duplicate$ "0" chr.to.int$ < not
856   swap$ "9" chr.to.int$ > not and
857 }

```

extract.num takes a string. If it begins with an integer, it returns just that integer. Otherwise it returns the whole string.

```

858 FUNCTION {extract.num}
859 { duplicate$ 't :=
860   "" 's :=
861   { t empty$ not }
862   { t #1 #1 substring$
863     t #2 global.max$ substring$ 't :=
864     duplicate$ is.num
865     { s swap$ * 's := }
866     { pop$ "" 't := }
867   } if$
868 }
869 while$
870 s empty$
871 'skip$
872 { pop$ s }
873 if$
874 }

```

convert.edition should operate on the edition field. If the value begins with a number (or is an English ordinal word from ‘first’ to ‘fifth’), then it returns the bibliography string version of the ordinal number (1st, 2nd, 3rd...). Otherwise, returns the edition field verbatim.

```

875 FUNCTION {convert.edition}
876 { extract.num "1" change.case$ 's :=
877   s "first" = s "1" = or
878   { bbl.first 't := }
879   { s "second" = s "2" = or
880     { bbl.second 't := }
881     { s "third" = s "3" = or
882       { bbl.third 't := }
883       { s "fourth" = s "4" = or
884         { bbl.fourth 't := }
885         { s "fifth" = s "5" = or
886           { bbl.fifth 't := }
887           { s #1 #1 substring$ is.num
888             { s eng.ord 't := }
889             { edition 't := }
890           } if$
891         }
892       } if$
893     }

```

```

894         if$
895     }
896     if$
897 }
898 if$
899 }
900 if$
901 t
902 }

```

`format.edition` returns the converted edition field and 'ed.'

```

903 FUNCTION {format.edition}
904 { edition duplicate$ empty$ 'skip$
905   { convert.edition
906     output.state mid.sentence =
907     { "l" }
908     { "t" }
909     if$ change.case$
910     "edition" bibinfo.check
911     " " * bbl.edition *
912   }
913   if$
914 }

```

If the type is provided, `format.thesis.type` deletes the preceding string (the default value) and writes the type field with an initial capital. Otherwise it does nothing.

```

915 FUNCTION {format.thesis.type}
916 { type duplicate$ empty$
917   'pop$
918   { swap$ pop$
919     "t" change.case$ "type" bibinfo.check
920   }
921   if$
922 }

```

If the type is provided, `format.booklet.type` writes the type field with an initial capital. Then, if this is an online work with no author/editor, the online label is added. If the type is not provided, it returns an empty string.

```

923 FUNCTION {format.booklet.type}
924 { type duplicate$ empty$
925   { pop$ "" }
926   { "type" bibinfo.check
927     is.online author empty$ and editor empty$ and
928     { " " * bbl.online * }
929     'skip$
930   }
931   if$
932   if$
933 }

```

`format.tr.number` returns the series, type and number fields as one of '(number)', '(type number)', '(series, number)', or '(series, type number)'. If a series is given, a `continue.clause` is inserted to remove the preceeding comma.

If the series begins 'HL', it is assumed to be a House of Lords paper, thus the number acquires additional parentheses. If it equals 'C', 'Cd', 'Cmd', 'Cmnd' or 'Cm', it is followed by a dot rather than a comma (implemented as `add.cmd.number`). To help with this, `format.legr.number` consumes one token (the number) and returns the series and number as one token.

```

934 FUNCTION {add.cmd.number}
935 { ". " swap$ "number" bibinfo.check *
936 }
937 FUNCTION {format.legr.number}
938 { series field.or.null 's :=
939   s "C" =
940     'add.cmd.number
941     { s "Cd" =

```

```

942     'add.cmd.number
943     { s "Cmd" =
944         'add.cmd.number
945         { s "Cmnd" =
946             'add.cmd.number
947             { s "Cm" =
948                 'add.cmd.number
949                 { s #1 #3 substring$ 't :=
950                     t "HL " =
951                     { ", (" swap$
952                         "number" bibinfo.check *
953                         ")" *
954                     }
955                     { ", " swap$
956                         "number" bibinfo.check *
957                     }
958                     if$
959                 }
960             if$
961         }
962     if$
963 }
964 if$
965 }
966 if$
967 }
968 if$
969 }
970 FUNCTION {format.tr.number}
971 { series duplicate$ empty$
972     { pop$
973         type duplicate$ empty$
974         { pop$
975             number duplicate$ empty$
976             { pop$ ""
977             }
978             { "(" swap$
979                 "number" bibinfo.check
980                 * ")" *
981             }
982             if$
983         }
984         { "(" swap$
985             "t" change.case$ "type" bibinfo.check
986             *
987             number duplicate$ empty$
988             'pop$
989             { tie.or.space.prefix
990                 "number" bibinfo.check
991                 * *
992             }
993             if$
994             ")" *
995         }
996         if$
997     }
998     { "(" swap$ *
999     type duplicate$ empty$
1000     { pop$
1001         number duplicate$ empty$
1002         'pop$
1003         { format.legr.number * }
1004         if$
1005     }
1006     { "t" change.case$ "type" bibinfo.check
1007         *
1008         number duplicate$ empty$
1009         'pop$
1010         { tie.or.space.prefix
1011             "number" bibinfo.check
1012             * *
1013         }
1014         if$

```

```

1015     }
1016     if$
1017     ")" *
1018     continue.clause
1019   }
1020   if$
1021 }

```

`format.manual.number` returns the series, type and number fields as one of '(number)', '(type number)', '(series number)', or '(series number, type)'.

```

1022 FUNCTION {format.manual.number}
1023 { series duplicate$ empty$
1024   { pop$
1025     type duplicate$ empty$
1026     { pop$
1027       number duplicate$ empty$
1028       { pop$ ""
1029       }
1030       { "number" bibinfo.check
1031       }
1032       if$
1033     }
1034     { "t" change.case$ "type" bibinfo.check
1035       number duplicate$ empty$
1036       'pop$
1037       { tie.or.space.prefix
1038         "number" bibinfo.check
1039         * *
1040       }
1041       if$
1042     }
1043     if$
1044   }
1045   { number duplicate$ empty$
1046     'pop$
1047     { tie.or.space.prefix
1048       "number" bibinfo.check
1049       * *
1050     }
1051     if$
1052     type duplicate$ empty$
1053     'pop$
1054     { ", " swap$ *
1055       "t" change.case$ "type" bibinfo.check
1056       *
1057     }
1058     if$
1059   }
1060   if$
1061 }

```

`format.chapter` prints out the chapter field in the form 'c.1', for use with UK primary legislation.

```

1062 FUNCTION {format.chapter}
1063 { chapter duplicate$ empty$
1064   { pop$ "" }
1065   { "chapter" bibinfo.check
1066     "c." swap$ *
1067   }
1068   if$
1069 }

```

`format.series.number.chapter` prints out the series and chapter/number fields in the form '(series, c.1)' or '(series, number)', for use with UK legislation.

```

1070 FUNCTION {format.series.number.chapter}
1071 { series duplicate$ empty$
1072   { pop$ "(" }
1073   { "series" bibinfo.check

```

```

1074     "(" swap$ *
1075   }
1076   if$
1077   type duplicate$ empty$
1078   { pop$
1079     number duplicate$ empty$
1080     'pop$
1081     { "number" bibinfo.check
1082       swap$ duplicate$ "(" =
1083       { swap$ * }
1084       { ", " * swap$ * }
1085       if$
1086     }
1087     if$
1088     chapter duplicate$ empty$
1089     'pop$
1090     { "chapter" bibinfo.check
1091       swap$ duplicate$ "(" =
1092       { swap$ * }
1093       { ", c." * swap$ * }
1094       if$
1095     }
1096     if$
1097   }
1098   { "type" bibinfo.check
1099     swap$ duplicate$ "(" =
1100     { swap$ * }
1101     { ", " * swap$ * }
1102     if$
1103     number duplicate$ empty$
1104     { pop$
1105       chapter duplicate$ empty$
1106       'pop$
1107       { "chapter" bibinfo.check
1108         " c." swap$ * *
1109       }
1110       if$
1111     }
1112     { "number" bibinfo.check
1113       " " swap$ * *
1114       chapter duplicate$ empty$
1115       'pop$
1116       { "chapter" bibinfo.check
1117         ", c." swap$ * *
1118       }
1119       if$
1120     }
1121     if$
1122   }
1123   if$
1124   ")" *
1125   duplicate$ "(" =
1126   { pop$ "" }
1127   'skip$
1128   if$
1129 }

```

`format.case.number` returns the number field, suppressing punctuation, or inserts a period. In the case of EU Commission Decisions, the format is '(userb) Commission Decision number'

```

1130 FUNCTION {format.case.number}
1131 { casenumber duplicate$ empty$
1132   { pop$
1133     number duplicate$ empty$
1134     { pop$ "" }
1135     { institution field.or.null "Commission" =
1136       userb empty$ not
1137       and
1138       { userb "userb" bibinfo.check
1139         "(" swap$ * " " * bbl.commission * " " *
1140         swap$ "number" bibinfo.check *
1141       }

```

```

1142         { "number" bibinfo.check
1143           "(" swap$ * ")" *
1144         }
1145         if$
1146       }
1147     if$
1148   }
1149   { "casenumber" bibinfo.check
1150     "(" swap$ * ")" *
1151     institution field.or.null "Commission" =
1152     number empty$ not
1153     and
1154     { " " * bbl.commission * " " *
1155       number "number" bibinfo.check *
1156     }
1157     'skip$
1158   if$
1159 }
1160 if$
1161 }

```

eu.case.check checks if the case is in OJ or has a number, in which case punctuation is suppressed.

```

1162 FUNCTION {eu.case.check}
1163 { journal field.or.null "OJ" =
1164   number empty$ not
1165   or
1166   casenumber empty$ not
1167   or
1168   'continue.clause
1169   'new.block
1170   if$
1171 }

```

5.9 Notes

format.note returns the note field, but changes the case of the first letter according to the output state (unless protected by braces).

```

1172 FUNCTION {format.note}
1173 { note empty$
1174   { "" }
1175   { note #1 #1 substring$
1176     duplicate$ "{" =
1177     'skip$
1178     { output.state mid.sentence =
1179       output.state mid.clause =
1180       or
1181       { "l" }
1182       { "u" }
1183       if$
1184       change.case$
1185     }
1186     if$
1187     note #2 global.max$ substring$ * "note" bibinfo.check
1188   }
1189   if$
1190 }

```

5.10 Addresses and publishers

format.org.or.pub intercepts a publisher (or whatever) being written out as bibinfo. If the write will succeed and an address has been specified, the address is written out first, then a colon and space; then the original write is allowed to proceed.

```

1191 FUNCTION {format.org.or.pub}
1192 { 't :=
1193   ""

```



```

1194 address empty$ t empty$ and
1195 'skip$
1196 { address "address" bibinfo.check *
1197   t empty$
1198   'skip$
1199   { address empty$
1200     'skip$
1201     { ": " * }
1202     if$
1203     t *
1204   }
1205   if$
1206 }
1207 if$
1208 }

```

The next three functions write out the address plus the publisher, organization and institution respectively.

```

1209 FUNCTION {format.publisher.address}
1210 { publisher "publisher" bibinfo.warn format.org.or.pub
1211 }
1212 FUNCTION {format.organization.address}
1213 { publisher empty$
1214   { organization "organization" bibinfo.check format.org.or.pub }
1215   { publisher "publisher" bibinfo.warn format.org.or.pub
1216     organization duplicate$ empty$
1217     'pop$
1218     { "organization" bibinfo.check ". " * swap$ * }
1219     if$
1220   }
1221   if$
1222 }
1223 FUNCTION {format.institution.address}
1224 { publisher empty$
1225   { institution "institution" bibinfo.check format.org.or.pub }
1226   { publisher "publisher" bibinfo.warn format.org.or.pub
1227     institution duplicate$ empty$
1228     'pop$
1229     { "institution" bibinfo.check ". " * swap$ * }
1230     if$
1231   }
1232   if$
1233 }

```

We add a macro for printing the library (repository) holding an eprint.

```

1234 FUNCTION {format.library}
1235 { library "library" bibinfo.check
1236   emphasize
1237   %<bst>
1238   duplicate$ empty$ not
1239   is.online
1240   and
1241   journal empty$
1242   and
1243   { " " * bbl.online * }
1244   'skip$
1245   if$
1246   %</bst>
1247 }

```

The library field is also used for where a physical image is kept. As we have only one address field, it will attach to whichever is present out of organization, publisher and library. In case there is more than one, it will attach to publisher in preference to library and library in preference to organization.

```

1248 FUNCTION {format.img.library}
1249 { library duplicate$ empty$
1250   { pop$ "" }
1251   { "library" bibinfo.check

```

```

1252     "At: " swap$ *
1253   }
1254   if$
1255 }
1256 FUNCTION {format.img.library.address}
1257 { address empty$ library empty$ and institution empty$ and
1258   { "" }
1259   { "At: "
1260     address "address" bibinfo.check *
1261     library duplicate$ empty$
1262     { institution duplicate$ empty$
1263       { pop$ "" }
1264       { address empty$
1265         'skip$
1266         { ". " swap$ }
1267         if$
1268         "institution" bibinfo.check * *
1269       }
1270     }
1271   }
1272   { address empty$
1273     'skip$
1274     { ". " swap$ }
1275     if$
1276     "library" bibinfo.check * *
1277   }
1278   if$
1279 }
1280 if$
1281 }
1282 FUNCTION {format.pub.org.lib.address}
1283 { publisher duplicate$ empty$
1284   { pop$
1285     organization duplicate$ empty$
1286     { pop$
1287       format.img.library.address }
1288     { "organization" bibinfo.check
1289       library empty$
1290       { format.org.or.pub }
1291       { ". " *
1292         format.img.library.address *
1293       }
1294     }
1295   }
1296   if$
1297 }
1298 { "publisher" bibinfo.warn format.org.or.pub
1299   library empty$
1300   'skip$
1301   { ". " *
1302     format.img.library *
1303   }
1304   if$
1305 }
1306 if$
1307 }

```

5.11 Pinpointing

`multi.page.check` should operate on the `pages` field. If the value is a range, that is, contains '-', ',', or '+', returns 1, otherwise returns 0.

```

1309 INTEGERS { multiresult }
1310 FUNCTION {multi.page.check}
1311 { 't :=
1312   #0 'multiresult :=
1313   { multiresult not
1314     t empty$ not
1315     and
1316   }
1317   { t #1 #1 substring$

```

```

1318     duplicate$ "-" =
1319     swap$ duplicate$ ", " =
1320     swap$ "+" =
1321     or or
1322     { #1 'multiresult := }
1323     { t #2 global.max$ substring$ 't := }
1324     if$
1325   }
1326   while$
1327   multiresult
1328 }

```

n.dashify converts hyphens in page ranges into en dashes.

```

1329 FUNCTION {n.dashify}
1330 { 't :=
1331   ""
1332   { t empty$ not }
1333   { t #1 #1 substring$ "-" =
1334     { t #1 #2 substring$ "--" = not
1335       { "--" *
1336         t #2 global.max$ substring$ 't :=
1337       }
1338       { { t #1 #1 substring$ "-" = }
1339         { "-" *
1340           t #2 global.max$ substring$ 't :=
1341         }
1342         while$
1343       }
1344     }
1345   }
1346   { t #1 #1 substring$ *
1347     t #2 global.max$ substring$ 't :=
1348   }
1349   if$
1350 }
1351 while$
1352 }

```

format.pages returns the pages fields, prefixed by 'p.' or 'pp.' as appropriate.

```

1353 FUNCTION {format.pages}
1354 { pages duplicate$ empty$ 'skip$
1355   { duplicate$ multi.page.check
1356     { bbl.pages swap$
1357       n.dashify
1358     }
1359     { bbl.page swap$
1360     }
1361     if$
1362     "pages" bibinfo.check
1363     *
1364   }
1365   if$
1366 }

```

format.journal.pages does similar, but it looks at the preceding string and, if both are non-empty, inserts a comma between it and the pages string.

```

1367 FUNCTION {format.journal.pages}
1368 { pages duplicate$ empty$ 'pop$
1369   { swap$ duplicate$ empty$
1370     { pop$ pop$ format.pages }
1371     { ", " *
1372       swap$
1373       n.dashify
1374       pages multi.page.check
1375       'bbl.pages
1376       'bbl.page
1377     }
1378     if$
1379     swap$
1380     "pages" bibinfo.check

```

```

1380         * *
1381     }
1382     if$
1383 }
1384 if$
1385 }

```

`format.journal.eid` returns the EID, but it looks at the preceding string and, if both are non-empty, inserts a comma between it and the EID string. The EID is a code used by some online-only journals to identify an article within a volume or issue instead of a page range (since the page numbering resets for each article, not each volume/issue).

```

1386 FUNCTION {format.journal.eid}
1387 { eid "eid" bibinfo.check
1388   duplicate$ empty$ 'pop$
1389   { swap$ duplicate$ empty$ 'skip$
1390     { ", " *
1391     }
1392     if$
1393     swap$ *
1394   }
1395   if$
1396 }

```

`format.vol.num.pages` returns the journal pinpointing in the form ‘volume(number), eid/pages’. It writes a warning to the log if `number` is given instead of `volume`: if a journal does not organize itself into volumes, treat every issue as its own volume! Since the Harvard (Bath) style places publication state information in the volume position, the `pubstate` field from `biblatex` is emulated here.

```

1397 FUNCTION {format.vol.num.pages}
1398 { pubstate field.or.null
1399   duplicate$ "inpress" =
1400   { pop$ bbl.inpress }
1401   { duplicate$ "submitted" =
1402     { pop$ bbl.submitted }
1403     { duplicate$ "inpreparation" =
1404       { pop$ bbl.inpreparation }
1405       { pop$ "" }
1406     }
1407     if$
1408   }
1409   if$
1410 }
1411 if$
1412 duplicate$ empty$
1413 { pop$
1414   volume field.or.null
1415   duplicate$ empty$ 'skip$
1416   { "volume" bibinfo.check
1417   }
1418   if$
1419   number "number" bibinfo.check duplicate$ empty$ 'skip$
1420   { swap$ duplicate$ empty$
1421     { "there's a number but no volume in " cite$ * warning$ }
1422     'skip$
1423     if$
1424     swap$
1425     "(" swap$ * ")" *
1426   }
1427   if$ *
1428   eid empty$
1429   { format.journal.pages }
1430   { format.journal.eid }
1431   if$
1432 }
1433 'skip$
1434 if$
1435 }

```

`format.chapter.pages` returns pinpointing information for books, in the form ‘chap. chapter,

p.pages'.

```
1435 FUNCTION {format.chapter.pages}
1436 { chapter empty$
1437   'format.pages
1438   { type empty$
1439     { bbl.chapter }
1440     { type "1" change.case$
1441       "type" bibinfo.check
1442     }
1443     if$
1444     chapter tie.or.space.prefix
1445     "chapter" bibinfo.check
1446     * *
1447     pages empty$
1448     'skip$
1449     { " " * format.pages * }
1450     if$
1451   }
1452   if$
1453 }
```

format.journal.series.vol.pages returns the journal title and pinpointing in the form 'volume journal pages', 'journal volume-pages' or 'journal series volume/pages', depending on the journal.

```
1454 FUNCTION {format.journal.series.vol.pages}
1455 { journal field.or.null
1456   duplicate$ "OJ" =
1457   { "journal" bibinfo.check
1458     emphasize
1459     series empty$
1460     volume empty$
1461     and
1462     pages empty$
1463     and
1464     'skip$
1465     { " " * }
1466     if$
1467     series "series" bibinfo.check
1468     volume "volume" bibinfo.check *
1469     duplicate$ empty$
1470     'skip$
1471     { pages field.or.null duplicate$ empty$
1472       'skip$
1473       { "/" swap$ *
1474       }
1475       if$ *
1476     }
1477     if$ *
1478   }
1479   { duplicate$ "ECR" =
1480     { "journal" bibinfo.check
1481       volume "volume" bibinfo.check
1482       duplicate$ empty$
1483       'skip$
1484       { " " swap$ * "--" * * }
1485       if$
1486     }
1487     { "journal" bibinfo.check
1488 %<bst>
1489       is.online
1490       { " " * bbl.online * }
1491       'skip$
1492       if$
1493 %</bst>
1494       volume "volume" bibinfo.check
1495       duplicate$ empty$
1496       'pop$
1497       { " " * swap$ * }
1498       if$
1499       pages empty$
```

```

1500     eid empty$
1501     and
1502     'skip$
1503     { " " * }
1504     if$
1505     }
1506     if$
1507     }
1508     if$
1509     eid empty$
1510     { pages "pages" bibinfo.check * }
1511     { eid "eid" bibinfo.check * }
1512     if$
1513 }

```

5.12 URLs

`format.eprint` constructs a string `\eprint[archive]{eprint}`.

```

1514 FUNCTION {format.eprint}
1515 { eprint duplicate$ empty$
1516   'skip$
1517   { "\eprint"
1518     archive empty$
1519     'skip$
1520     { "[" * archive * "]" * }
1521     if$
1522     "{" * swap$ * "}" *
1523   }
1524   if$
1525 }

```

`format.url` constructs a string Available from: `\url{url}` [Accessed `urldate`].

```

1526 FUNCTION {format.url}
1527 { doi empty$
1528   { url }
1529   { "https://doi.org/" doi * }
1530   if$
1531   duplicate$ empty$
1532   { pop$ "" }
1533   { "\urlprefix\url{" swap$ * "}" * }
1534   if$
1535   urlyear empty$
1536   { urldate empty$
1537     'skip$
1538     { " [\urldateprefix{" * urldate * "}" * }
1539     if$
1540   }
1541   { " [\urldateprefix{" * urlyear * "}" * }
1542   if$
1543 }

```

5.13 Cross referencing between entries

The following functions are used for entries that look like ‘Author, (Year). Title. In: Author (Year).’ In practice, they should never be used with Harvard (Bath).

```

1544 FUNCTION {format.article.crossref}
1545 { word.in
1546   " \cite{" * crossref * "}" *
1547 }
1548 FUNCTION {format.incoll.inproc.crossref}
1549 { word.in
1550   " \cite{" * crossref * "}" *
1551 }

```

`format.book.crossref` is a bit different as it is intended for cases where the given book is volume X of a larger work: ‘Author, (Year). Title. Vol. volume of Author (Year).’ In the absence of a volume, writes a warning to the log and behaves like the above.

```

1552 FUNCTION {format.book.crossref}
1553 { volume duplicate$ empty$
1554   { "empty volume in " cite$ * "'s crossref of " * crossref * warning$
1555     pop$ word.in
1556   }
1557   { bbl.volume
1558     capitalize
1559     swap$ tie.or.space.prefix "volume" bibinfo.check * * bbl.of space.word *
1560   }
1561   if$
1562   " \cite{" * crossref * "}" *
1563 }

```

5.14 Formatting drivers for specific entry types

These functions are called when an entry of the given type is being formatted.

5.14.1 Article

```

1565 FUNCTION {article}
1566 { output.bibitem
1567   format.authors "author" output.check
1568   author format.key output
1569   format.date "year" output.check
1570   date.block
1571   format.title "title" output.check
1572   get.title.addenda
1573   new.block
1574   crossref missing$
1575     { journal "t" change.case$
1576       "journal" bibinfo.check
1577       emphasize
1578       "journal" output.check
1579     }%<*bst>
1580     is.online
1581       { continue.clause
1582         bbl.online output
1583       }
1584       'skip$
1585     if$
1586   }%</bst>
1587   format.vol.num.pages output
1588   {
1589     { format.article.crossref output.nonnull
1590       format.pages output
1591     }
1592     if$
1593     new.block
1594     format.note output
1595     new.block
1596     format.eprint output
1597     format.url output
1598     fin.entry
1599   }

```

5.14.2 Book

```

1600 FUNCTION {book}
1601 { output.bibitem
1602   author empty$
1603     { editor empty$
1604       type$ "reference" =
1605       or
1606       { type$ "reference" =
1607         { format.title "title" output.check }
1608         { format.btitle "title" output.check }
1609       if$
1610       format.date "year" output.check
1611       year empty$ 'skip$ { date.block } if$
1612       get.title.addenda

```

```

1613     }
1614     { format.editors "author and editor" output.check
1615       format.date "year" output.check
1616       date.block
1617       format.btitle "title" output.check
1618       get.title.addenda
1619     }
1620     if$
1621   }
1622   { format.authors output.nonnull
1623     crossref missing$
1624     { "author and editor" editor either.or.check }
1625     'skip$
1626     if$
1627     format.date "year" output.check
1628     date.block
1629     format.btitle "title" output.check
1630     get.title.addenda
1631   }
1632   if$
1633   format.bvolume output
1634   format.number.series output
1635   new.block
1636   format.edition output
1637   crossref missing$
1638   { new.sentence
1639     format.publisher.address output
1640   }
1641   { new.block
1642     format.book.crossref output.nonnull
1643   }
1644   if$
1645   new.block
1646   format.note output
1647   new.block
1648   format.eprint output
1649   format.url output
1650   fin.entry
1651 }

```

5.14.3 Unpublished or self-published monograph

```

1652 FUNCTION {booklet}
1653 { output.bibitem
1654   author empty$
1655   { format.btitle "title" output.check
1656     format.date "year" output.check
1657     year empty$ 'skip$ { date.block } if$
1658     get.title.addenda
1659   }
1660   { format.authors output
1661     author format.key output
1662     format.date "year" output.check
1663     date.block
1664     format.btitle "title" output.check
1665     get.title.addenda
1666   }
1667   if$
1668   new.block
1669   format.booklet.type output
1670   new.block
1671   howpublished "howpublished" bibinfo.check output
1672   new.block
1673   format.note output
1674   publisher empty$ 'skip$
1675   { new.block}
1676   if$
1677   format.publisher.address output
1678   new.block
1679   format.eprint output
1680   format.url output
1681   fin.entry

```



```
1682 }
```

5.14.4 Work in book

```
1683 FUNCTION {inbook}
1684 { output.bibitem
1685   author empty$
1686   { format.editors "author and editor" output.check
1687     editor format.key output
1688   }
1689   { format.authors output.nonnull
1690     crossref missing$
1691     { "author and editor" editor either.or.check }
1692     'skip$
1693     if$
1694   }
1695   if$
1696   format.date "year" output.check
1697   date.block
1698   format.btitle "title" output.check
1699   get.title.addenda
1700   new.block
1701   format.edition output
1702   crossref missing$
1703   { format.publisher.address output
1704     format.bvolume output
1705     format.chapter.pages "chapter and pages" output.check
1706     new.block
1707     format.number.series output
1708     new.sentence
1709   }
1710   { format.chapter.pages "chapter and pages" output.check
1711     new.block
1712     format.book.crossref output.nonnull
1713   }
1714   if$
1715   new.block
1716   format.note output
1717   new.block
1718   format.eprint output
1719   format.url output
1720   fin.entry
1721 }
```

5.14.5 Work in collection

```
1722 FUNCTION {incollection}
1723 { output.bibitem
1724   author empty$
1725   { type$ "inreference" =
1726     { format.label.booktitle output }
1727     { format.title "title" output.check }
1728     if$
1729     format.date "year" output.check
1730     year empty$ 'skip$ { date.block } if$
1731     type$ "inreference" =
1732     'skip$
1733     { get.title.addenda }
1734     if$
1735   }
1736   { format.authors output.nonnull
1737     format.date "year" output.check
1738     date.block
1739     format.title "title" output.check
1740     get.title.addenda
1741   }
1742   if$
1743   new.block
1744   crossref missing$
1745   { type$ "inreference" =
1746     author empty$
```

```

1747     and
1748     { format.byeditors output }
1749     { format.in.ed.booktitle "booktitle" output.check }
1750     if$
1751     new.block
1752     format.edition output
1753     new.block
1754     type$ "inreference" =
1755     author empty$
1756     and
1757     { format.btitle "title" output.check
1758       get.title.addenda
1759       new.block
1760     }
1761     'skip$
1762     if$
1763     format.publisher.address output
1764     format.bvolume output
1765     format.number.series output
1766     format.chapter.pages output
1767   }
1768   { format.incoll.inproc.crossref output.nonnull
1769     format.chapter.pages output
1770   }
1771   if$
1772   new.block
1773   format.note output
1774   new.block
1775   format.eprint output
1776   format.url output
1777   fin.entry
1778 }

```

5.14.6 Conference paper

```

1779 FUNCTION {inproceedings}
1780 { output.bibitem
1781   format.authors "author" output.check
1782   author format.key output
1783   format.date "year" output.check
1784   date.block
1785   format.title "title" output.check
1786   get.title.addenda
1787   new.block
1788   crossref missing$
1789   { format.in.ed.booktitle "booktitle" output.check
1790     eventyear output
1791     venue output
1792     new.sentence
1793     publisher empty$
1794     { format.organization.address output }
1795     { organization "organization" bibinfo.check output
1796       format.publisher.address output
1797     }
1798     if$
1799     format.bvolume output
1800     format.number.series output
1801     format.pages output
1802   }
1803   { format.incoll.inproc.crossref output.nonnull
1804     format.pages output
1805   }
1806   if$
1807   new.block
1808   format.note output
1809   new.block
1810   format.eprint output
1811   format.url output
1812   fin.entry
1813 }
1814 FUNCTION {conference} { inproceedings }

```

5.14.7 Legal case studies

```
1815 FUNCTION {jurisdiction}
1816 { output.bibitem
1817   author empty$
1818   { format.btitle "title" output.check
1819     continue.clause
1820     format.case.number output
1821     number empty$
1822     casenumber empty$
1823     and
1824     'new.sentence
1825     'continue.clause
1826     if$
1827     format.jur.date "year" output.check
1828     year empty$ 'skip$ { eu.case.check } if$
1829     get.title.addenda
1830   }
1831   { format.authors output
1832     author format.key output
1833     format.jur.date "year" output.check
1834     date.block
1835     continue.clause
1836     format.btitle "title" output.check
1837     get.title.addenda
1838   }
1839   if$
1840   eu.case.check
1841   format.note output
1842   note empty$
1843   'eu.case.check
1844   'new.block
1845   if$
1846   crossref missing$
1847   { continue.clause
1848     format.journal.series.vol.pages output
1849   }
1850   { format.article.crossref output.nonnull
1851     format.pages output
1852   }
1853   if$
1854   new.block
1855   format.eprint output
1856   format.url output
1857   fin.entry
1858 }
```

5.14.8 Legislation

```
1859 FUNCTION {uklegislation}
1860 { output.bibitem
1861   author empty$
1862   { format.btitle "title" output.check
1863     continue.clause
1864     format.date emphasize "year" output.check
1865     get.title.addenda
1866   }
1867   { format.authors output
1868     author format.key output
1869     format.date "year" output.check
1870     date.block
1871     continue.clause
1872     format.btitle "title" output.check
1873     get.title.addenda
1874   }
1875   if$
1876   entrysubtype field.or.null "secondary" =
1877   { number "number" bibinfo.check output }
1878   { series empty$ type empty$ and
1879     { number empty$
1880       { format.chapter output }
1881     }
1882   }
```

```

1881         { continue.clause
1882             format.series.number.chapter output
1883         }
1884         if$
1885     }
1886     { chapter empty$
1887         { new.block }
1888         { continue.clause }
1889         if$
1890             format.series.number.chapter output
1891         }
1892         if$
1893     }
1894     if$
1895     note empty$
1896     'skip$
1897     { new.block
1898         format.note output
1899         new.block
1900     }
1901     if$
1902     publisher empty$ 'skip$
1903     { entrysubtype field.or.null "secondary" =
1904         'skip$
1905         { new.block }
1906         if$
1907             format.publisher.address output
1908         }
1909         if$
1910         new.block
1911         format.eprint output
1912         format.url output
1913         fin.entry
1914     }
1915 FUNCTION {eulegislation}
1916 { output.bibitem
1917     author empty$
1918     { format.title "title" output.check
1919         continue.clause
1920         format.eu.date "year" output.check
1921         get.title.addenda
1922     }
1923     { format.authors output
1924         author format.key output
1925         format.eu.date "year" output.check
1926         date.block
1927         continue.clause
1928         format.title "title" output.check
1929         get.title.addenda
1930     }
1931     if$
1932     eu.case.check
1933     format.note output
1934     note empty$
1935     'eu.case.check
1936     'new.block
1937     if$
1938     crossref missing$
1939     { continue.clause
1940         format.journal.series.vol.pages output
1941     }
1942     { format.article.crossref output.nonnull
1943         format.pages output
1944     }
1945     if$
1946     new.block
1947     format.eprint output
1948     format.url output
1949     fin.entry
1950 }
1951 FUNCTION {legislation}
1952 { journal empty$
1953     'uklegislation

```

```

1954     'eulegislation
1955     if$
1956 }

```

5.14.9 Manual

```

1957 FUNCTION {manual}
1958 { output.bibitem
1959   author empty$
1960   { format.btitle "title" output.check
1961     format.date "year" output.check
1962     year empty$ 'skip$ { date.block } if$
1963     get.title.addenda
1964   }
1965   { format.authors output
1966     author format.key output
1967     format.date "year" output.check
1968     date.block
1969     format.btitle "title" output.check
1970     get.title.addenda
1971   }
1972   if$
1973   format.edition output
1974   new.block
1975   format.manual.number output
1976   new.block
1977   format.library output
1978   organization address new.block.checkb
1979   format.organization.address output
1980   new.block
1981   format.note output
1982   new.block
1983   format.eprint output
1984   format.url output
1985   fin.entry
1986 }

```

5.14.10 Image

```

1987 FUNCTION {image}
1988 { output.bibitem
1989   author empty$
1990   { format.btitle "title" output.check
1991     format.date "year" output.check
1992     year empty$ 'skip$ { date.block } if$
1993     get.title.addenda
1994   }
1995   { format.authors output
1996     author format.key output
1997     format.date "year" output.check
1998     date.block
1999     format.btitle "title" output.check
2000     get.title.addenda
2001   }
2002   if$
2003   format.edition output
2004   new.block
2005   format.manual.number output
2006   new.block
2007   format.pub.org.lib.address output
2008   new.block
2009   format.note output
2010   new.block
2011   format.eprint output
2012   format.url output
2013   fin.entry
2014 }

```

5.14.11 Master's thesis

```
2015 FUNCTION {mastersthesis}
2016 { output.bibitem
2017   format.authors "author" output.check
2018   author format.key output
2019   format.date "year" output.check
2020   date.block
2021   format.btitle "title" output.check
2022   get.title.addenda
2023   new.block
2024   bbl.mthesis format.thesis.type output.nonnull
2025   new.block
2026   school "school" bibinfo.warn output
2027   address "address" bibinfo.check output
2028   new.block
2029   format.note output
2030   new.block
2031   format.eprint output
2032   format.url output
2033   fin.entry
2034 }
```

5.14.12 Miscellaneous

```
2035 FUNCTION {misc}
2036 { output.bibitem
2037   author empty$
2038   { format.title "title" output.check
2039     format.date "year" output.check
2040     year empty$ 'skip$ { date.block } if$
2041     get.title.addenda
2042   }
2043   { format.authors output
2044     author format.key output
2045     format.date "year" output.check
2046     date.block
2047     format.title "title" output.check
2048     get.title.addenda
2049   }
2050   if$
2051   new.block
2052   howpublished "howpublished" bibinfo.check output
2053   new.block
2054   format.note output
2055   new.block
2056   format.eprint output
2057   format.url output
2058   fin.entry
2059 }
```

5.14.13 Doctoral thesis

```
2060 FUNCTION {phdthesis}
2061 { output.bibitem
2062   format.authors "author" output.check
2063   author format.key output
2064   format.date "year" output.check
2065   date.block
2066   format.btitle "title" output.check
2067   get.title.addenda
2068   new.block
2069   bbl.phdthesis format.thesis.type output.nonnull
2070   new.block
2071   school "school" bibinfo.warn output
2072   address "address" bibinfo.check output
2073   new.block
2074   format.note output
2075   new.block
2076   format.eprint output
2077   format.url output
```

```

2078     fin.entry
2079 }

```

5.14.14 Conference proceedings

```

2080 FUNCTION {proceedings}
2081 { output.bibitem
2082   editor empty$
2083   { format.btitle "title" output.check
2084     format.date "year" output.check
2085     year empty$ 'skip$ { date.block } if$
2086     get.title.addenda
2087   }
2088   { format.editors output
2089     editor format.key output
2090     format.date "year" output.check
2091     date.block
2092     format.btitle "title" output.check
2093     get.title.addenda
2094   }
2095   if$
2096   format.bvolume output
2097   format.number.series output
2098   new.sentence
2099   publisher empty$
2100   { format.organization.address output }
2101   { organization "organization" bibinfo.check output
2102     format.publisher.address output
2103   }
2104   if$
2105   new.block
2106   format.note output
2107   new.block
2108   format.eprint output
2109   format.url output
2110   fin.entry
2111 }

```

5.14.15 Report

```

2112 FUNCTION {techreport}
2113 { output.bibitem
2114   author empty$
2115   { format.btitle "title" output.check
2116     format.date "year" output.check
2117     year empty$ 'skip$ { date.block } if$
2118     get.title.addenda
2119   }
2120   { format.authors output
2121     author format.key output
2122     format.date "year" output.check
2123     date.block
2124     format.btitle "title" output.check
2125     get.title.addenda
2126   }
2127   if$
2128   new.block
2129   format.tr.number output
2130   new.block
2131   publisher empty$
2132   { format.institution.address output }
2133   { institution "institution" bibinfo.check output
2134     format.publisher.address output
2135   }
2136   if$
2137   new.block
2138   format.library output
2139   new.block
2140   format.note output
2141   new.block
2142   format.eprint output

```

```

2143   format.url output
2144   fin.entry
2145 }

```

5.14.16 Unpublished works

```

2146 FUNCTION {unpublished}
2147 { output.bibitem
2148   author empty$
2149   { booktitle empty$ 'format.btitle 'format.title if$ "title" output.check
2150     format.date "year" output.check
2151     year empty$ 'skip$ { date.block } if$
2152     get.title.addenda
2153   }
2154   { format.authors output
2155     author format.key output
2156     format.date "year" output.check
2157     date.block
2158     booktitle empty$ 'format.btitle 'format.title if$ "title" output.check
2159     get.title.addenda
2160   }
2161   if$
2162   new.block
2163   format.in.ed.booktitle output
2164   new.block
2165   howpublished "howpublished" bibinfo.check output
2166   new.block
2167   bbl.unpublished output
2168   new.block
2169   format.note output
2170   new.block
2171   format.eprint output
2172   format.url output
2173   fin.entry
2174 }

```

5.14.17 Aliases and fallbacks

Here are a list of aliases supported by this style.

```

2176 FUNCTION {letter}
2177 { journal empty$
2178   'unpublished
2179   'article
2180   if$
2181 }
2182 FUNCTION {collection} { book }
2183 FUNCTION {reference} { book }
2184 FUNCTION {inreference} { incollection }
2185 FUNCTION {audio} { booklet }
2186 FUNCTION {movie} { booklet }
2187 FUNCTION {music} { booklet }
2188 FUNCTION {video} { booklet }
2189 FUNCTION {dataset} { manual }
2190 FUNCTION {electronic} { manual }
2191 FUNCTION {online} { manual }
2192 FUNCTION {patent} { manual }
2193 FUNCTION {software} { manual }
2194 FUNCTION {standard} { manual }
2195 FUNCTION {www} { manual }
2196 FUNCTION {thesis} { phdthesis }
2197 FUNCTION {report} { techreport }

```

The fallback driver is `misc`, as with most styles.

```

2198 FUNCTION {default.type} { misc }

```

5.15 Bibliography processing

We are now ready for BibTeX to read in the `.bib` file.

2200 READ

These functions are used to generate a sort key for each entry in the .bib file. `sortify` strips out L^AT_EX commands, spaces and ASCII symbols, and converts to lowercase.

```
2201 FUNCTION {sortify}
2202 { purify$
2203   "1" change.case$
2204 }
```

`chop.word` takes a string *s*, an integer *len*, and a prefix (stop) string. If the first *len* characters of *s* match the prefix, those characters are stripped off *s*.

```
2205 INTEGERS { len }
2206 FUNCTION {chop.word}
2207 { 's :=
2208   'len :=
2209   s #1 len substring$ =
2210   { s len #1 + global.max$ substring$ }
2211   's
2212   if$
2213 }
```

`format.lab.names` is similar to `format.full.names`, the main difference being that if there are more than 3 names in the list, the second and subsequent names are replaced with ‘et al.’

```
2214 FUNCTION {format.lab.names}
2215 { 's :=
2216   "" 't :=
2217   #1 'nameptr :=
2218   s num.names$ 'numnames :=
2219   numnames 'namesleft :=
2220   { namesleft #0 > }
2221   { s nameptr
2222     "{vv~}{ll}" format.name$
2223     't :=
2224     nameptr #1 >
2225     { nameptr #2 =
2226       numnames #3 > and
2227       { "others" 't :=
2228         #1 'namesleft := }
2229       'skip$
2230       if$
2231       namesleft #1 >
2232       { ", " * t * }
2233       { s nameptr "{ll}" format.name$ duplicate$ "others" =
2234         { 't := }
2235         { pop$ }
2236         if$
2237         t "others" =
2238         { " " * bbl.etal *
2239         }
2240         { bbl.and
2241           space.word * t *
2242         }
2243         if$
2244       }
2245       if$
2246     }
2247     't
2248     if$
2249     nameptr #1 + 'nameptr :=
2250     namesleft #1 - 'namesleft :=
2251   }
2252   while$
2253 }
```

`author.editor.key.label` is the analogue of `author.editor.key.full` but with a truncated list of author/editor names.

```

2254 FUNCTION {author.editor.key.label}
2255 { author empty$
2256   { editor empty$
2257     { key empty$
2258       { title empty$
2259         { cite$ #1 #3 substring$ }
2260         { title
2261           type$ "book" =
2262             { emphasize }
2263             'skip$
2264             if$
2265           }
2266         if$
2267       }
2268       'key
2269       if$
2270     }
2271     { editor format.lab.names }
2272     if$
2273   }
2274   { author format.lab.names }
2275   if$
2276 }

```

editor.key.label is the analogue of editor.key.full but with a truncated list of editor names.

```

2277 FUNCTION {editor.key.label}
2278 { editor empty$
2279   { key empty$
2280     { title empty$
2281       { cite$ #1 #3 substring$ }
2282       { title emphasize }
2283       if$
2284     }
2285     'key
2286     if$
2287   }
2288   { editor format.lab.names }
2289   if$
2290 }

```

author.key.label is the analogue of author.key.full but with a truncated list of author names.

```

2291 FUNCTION {author.key.label}
2292 { author empty$
2293   { key empty$
2294     { type$ "inreference" =
2295       booktitle empty$ not
2296       and
2297       { booktitle }
2298       { title empty$
2299         { cite$ #1 #3 substring$ }
2300         { title
2301           type$ "article" =
2302           type$ "incollection" =
2303           or
2304           type$ "inproceedings" =
2305           or
2306           type$ "reference" =
2307             author empty$
2308             and
2309             or
2310           type$ "misc" =
2311           or
2312           'skip$
2313           { emphasize }
2314           if$
2315         }
2316       }
2317     }
2318     if$
2319   }
2320   { author format.lab.names }
2321   if$
2322 }

```

```

2318         if$
2319     }
2320     'key
2321     if$
2322 }
2323 { author format.lab.names }
2324 if$
2325 }

```

calc.short.authors chooses between the above.

```

2326 FUNCTION {calc.short.authors}
2327 { type$ "book" =
2328   type$ "inbook" =
2329   or
2330   'author.editor.key.label
2331   { type$ "proceedings" =
2332     'editor.key.label
2333     'author.key.label
2334     if$
2335   }
2336   if$
2337   'short.list :=
2338 }

```

calc.label creates a string in the form ‘Truncated Author List(Year’. The closing parenthesis is supplied by output.bibitem (see above), into which this string is incorporated.

```

2339 FUNCTION {calc.label}
2340 { calc.short.authors
2341   short.list
2342   "("
2343   *
2344   year nodate.check duplicate$ empty$
2345   { pop$ "" }
2346   'skip$
2347   if$
2348   *
2349   'label :=
2350 }

```

sort.format.names consumes one token (a field) and constructs a list of names in the form ‘Surname Forename Prefix Suffix’, with just spaces between adjacent names and ‘zzzzz’ used in place of ‘et al.’

```

2351 FUNCTION {sort.format.names}
2352 { 's :=
2353   #1 'nameptr :=
2354   ""
2355   s num.names$ 'numnames :=
2356   numnames 'namesleft :=
2357   { namesleft #0 > }
2358   { s nameptr
2359     "{ll{ }}{ f{ }}{ jj{ }}{ vv{ }}"
2360     format.name$ 't :=
2361     nameptr #1 >
2362     { " " *
2363       namesleft #1 =
2364       t "others" =
2365       and
2366       { "zzzzz" 't := }
2367       'skip$
2368       if$
2369       t sortify *
2370     }
2371     { t sortify * }
2372     if$
2373     nameptr #1 + 'nameptr :=
2374     namesleft #1 - 'namesleft :=
2375   }
2376   while$

```

```
2377 }
```

`sort.format.title` strips off initial articles from the preceding field and normalizes what remains using `sortify` (see above).

```
2378 FUNCTION {sort.format.title}
2379 { 't :=
2380   "A " #2
2381   "An " #3
2382   "The " #4 t chop.word
2383   chop.word
2384   chop.word
2385   sortify
2386   #1 global.max$ substring$
2387 }
```

`author.editor.sort` creates a string for use when sorting the entry in the bibliography. In order of preference, the string is based on author, editor, title or the `key` field.

```
2388 FUNCTION {author.editor.sort}
2389 { author empty$
2390   { editor empty$
2391     { title empty$
2392       { key empty$
2393         { "to sort, need author, editor, title, or key in " cite$ * warning$
2394           ""
2395         }
2396         { key sortify }
2397         if$
2398       }
2399       { title sort.format.title }
2400       if$
2401     }
2402     { editor sort.format.names }
2403     if$
2404   }
2405   { author sort.format.names }
2406   if$
2407 }
```

`editor.sort` does similar but skips the author names.

```
2408 FUNCTION {editor.sort}
2409 { editor empty$
2410   { title empty$
2411     { key empty$
2412       { "to sort, need editor, title, or key in " cite$ * warning$
2413         ""
2414       }
2415       { key sortify }
2416       if$
2417     }
2418     { title sort.format.title }
2419     if$
2420   }
2421   { editor sort.format.names }
2422   if$
2423 }
```

`author.sort` does similar but skips the editor names.

```
2424 FUNCTION {author.sort}
2425 { author empty$
2426   { type$ "inreference" =
2427     booktitle empty$ not
2428     and
2429     { booktitle sort.format.title }
2430     { title empty$
2431       { key empty$
2432         { "to sort, need author, title, or key in " cite$ * warning$
2433           ""
```

```

2434         }
2435         { key sortify }
2436         if$
2437     }
2438     { title sort.format.title }
2439     if$
2440 }
2441 if$
2442 }
2443 { author sort.format.names }
2444 if$
2445 }

```

`presort` constructs the `sort.label` from the `calc.label` and one of the above three functions. It also constructs the `sort.key$` (used by `SORT`) from the `sort.label` and the title.

```

2447 FUNCTION {presort}
2448 { calc.label
2449   label sortify
2450   " "
2451   *
2452   type$ "book" =
2453   type$ "inbook" =
2454   or
2455   'author.editor.sort
2456   { type$ "proceedings" =
2457     'editor.sort
2458     'author.sort
2459     if$
2460   }
2461   if$
2462   #1 entry.max$ substring$
2463   'sort.label :=
2464   sort.label
2465   *
2466   " "
2467   *
2468   title field.or.null
2469   sort.format.title
2470   *
2471   #1 entry.max$ substring$
2472   'sort.key$ :=
2473 }

```

We now tell BibTEX to go through each entry in turn and apply the `presort` function, then use the resultant sort keys to put the entries in order.

```

2475 ITERATE {presort}
2476 SORT

```

If there are any duplicate author–year combinations, these functions detect them and disambiguate them by adding a letter to the year.

```

2477 STRINGS { last.label next.extra }
2478 INTEGERS { last.extra.num last.extra.num.extended last.extra.num.blank number.label }
2479 FUNCTION {initialize.extra.label.stuff}
2480 { #0 int.to.chr$ 'last.label :=
2481   "" 'next.extra :=
2482   #0 'last.extra.num :=
2483   "a" chr.to.int$ #1 - 'last.extra.num.blank :=
2484   last.extra.num.blank 'last.extra.num.extended :=
2485   #0 'number.label :=
2486 }
2487 FUNCTION {forward.pass}
2488 { last.label label =
2489   { last.extra.num #1 + 'last.extra.num :=
2490     last.extra.num "z" chr.to.int$ >
2491     { "a" chr.to.int$ 'last.extra.num :=
2492       last.extra.num.extended #1 + 'last.extra.num.extended :=
2493     }
2494     'skip$

```

```

2495     if$
2496     last.extra.num.extended last.extra.num.blank >
2497     { last.extra.num.extended int.to.chr$
2498       last.extra.num int.to.chr$
2499       * 'extra.label := }
2500     { last.extra.num int.to.chr$ 'extra.label := }
2501     if$
2502   }
2503   { "a" chr.to.int$ 'last.extra.num :=
2504     "" 'extra.label :=
2505     label 'last.label :=
2506   }
2507   if$
2508   number.label #1 + 'number.label :=
2509 }
2510 FUNCTION {reverse.pass}
2511 { next.extra "b" =
2512   { "a" 'extra.label := }
2513   'skip$
2514   if$
2515   extra.label 'next.extra :=
2516   extra.label
2517   duplicate$ empty$
2518   'skip$
2519   { "{\natexlab{" swap$ * "}" * }
2520   if$
2521   'extra.label :=
2522   label extra.label * 'label :=
2523 }

```

Applying these functions is a bit more tricky, but once we have done that, we re-sort the entries to make absolutely sure they in the right order, this time with the year between with `sort.label` and the title.

```

2524 EXECUTE {initialize.extra.label.stuff}
2525 ITERATE {forward.pass}
2526 REVERSE {reverse.pass}
2527 FUNCTION {bib.sort.order}
2528 { sort.label
2529   " "
2530   *
2531   year field.or.null sortify
2532   *
2533   " "
2534   *
2535   title field.or.null
2536   sort.format.title
2537   *
2538   #1 entry.max$ substring$
2539   'sort.key$ :=
2540 }
2541 ITERATE {bib.sort.order}
2542 SORT

```

We now write out the beginning of the bibliography to a .bbl file. This includes opening a \LaTeX environment, thebibliography, and some user-redefinable strings.

```

2543 FUNCTION {begin.bib}
2544 { preamble$ empty$
2545   'skip$
2546   { preamble$ write$ newline$ }
2547   if$
2548   "\begin{thebibliography}{ number.label int.to.str$ * "}" *
2549   write$ newline$
2550   "\providecommand{\natexlab}[1]{#1}"
2551   write$ newline$
2552   "\providecommand{\url}[1]{\texttt{#1}}"
2553   write$ newline$
2554   "\providecommand{\urlprefix}{Available from: }"
2555   write$ newline$
2556   "\providecommand{\urldateprefix}{Accessed }"

```

```

2557 write$ newline$
2558 "\providecommand{\selectlanguage}[1]{\relax}"
2559 write$ newline$
2560 "\providecommand{\bibinfo}[2]{#2}"
2561 write$ newline$
2562 "\providecommand{\eprint}[2][ ]{\url{#2}}"
2563 write$ newline$
2564 }
2565 EXECUTE {begin.bib}
2566 EXECUTE {init.state.consts}

```

We go through each entry in turn, in the right order, and write the formatted text out to the file.

```

2567 ITERATE {call.type$}

```

After the last entry, we close the L^AT_EX environment and stop writing to the .bbl file.

```

2568 FUNCTION {end.bib}
2569 { newline$
2570 "\end{thebibliography}" write$ newline$
2571 }
2572 EXECUTE {end.bib}

```