

# National Research Council Research Press

## L<sup>A</sup>T<sub>E</sub>X User Guide for Journals<sup>1</sup>

### 1 Basic coding

All L<sup>A</sup>T<sub>E</sub>X documents must include these three commands:

```
\documentclass{...}
...          <-- 'preamble'
\begin{document}
...          <-- 'body'
...
\end{document}
```

1. The `documentclass` must be specified, either with a generic package, such as `article` or a specific package, such as `nrc1`.
2. Between the first two commands comes the material known as the 'preamble', which includes additional packages (and their options), as well as any file-specific macros.
3. Between the 2nd and 3rd commands comes the actual contents of the article — known as the 'body' of the file.

Commands are usually of the following types:

1. **control sequences** begin with a backslash (`\`).
2. **environments** use matching `\begin{...}` and `\end{...}` commands (i.e., `\begin{document}` must eventually be matched with `\end{document}`).
3. **optional** arguments are within square brackets [...]

### 2 Document classes and options

NRC journals are set either in full-width, using the `nrc1` class, or in 2-column format, using the `nrc2` document class.

The following represent the options for both document classes. Note that most articles will **not** require all of them; as well, some options are only for `nrc2`.

```
\documentclass[<options here>]{<class here>}
      usecmfonts      nrc1
OR    type1rest      OR nrc2
      genTeX
      french
      nonumbib
nrc1 only:  leqno
nrc2 only:  reqno
```

<sup>1</sup>This document is available from your local CTAN site in `macros/latex/contrib/supported/nrc/` in both `.ps` and `.pdf` formats.

To combine options, insert a comma between each option:

```
\documentclass[type1rest,nonumbib,genTeX]{nrc2}
```

The following sections describe the options available to both classes, and then those options which are specific to `nrc1` or `nrc2` only. Options specific to in-house production work are described separately; see Section 6.

#### 2.1 Options for both classes

**Note:** Do not load options or packages which are never accessed; their presence implies they are required and may cause unnecessary searches for coded material which is not, in fact, present.

**usecmfonts** Selects Knuth's Computer Modern fonts if you do not have access to PostScript fonts in your printer. NRC production procedures will replace these with Times, Helvetica, and MathTime fonts used for printing proofs and camera copy. Note that spacing for most text and math mode material will change since Times is narrower than the Computer Modern fonts. Do not use in combination with `[type1rest]`.

**type1rest** Selects a restricted set of Adobe fonts, as a rough substitute for the NRC production fonts. It has the advantage of using fonts that are available on any PostScript printer, and typesetting running text almost as it will appear in the published result. Math material will still be set in Computer Modern. Do not use in combination with `[usecmfonts]`.

**genTeX** All users (other than NRC editorial staff) must specify this option for generic encoding (by default, `OT1`), to over-ride the in-house settings). Its absence may generate an error message beginning:

```
Package fontenc Error: ...
```

**french** For French-language articles. It configures the NRC document classes to print all the automated textual elements (in the author IDbox, for figures, tables, bibliographies, etc.) in French as per NRC specifications. To be used in concert with:

```
\usepackage[french]{babel}
```

**nonumbib** This option removes numbers (i.e., 'labels') from `\bibitem` entries; material is set with a hanging indent. The default is to have numbered bibliographic entries.

## 2.2 Options specific to only one class

`leqno` for `nrc1` only

This option puts equation numbers to the left margin; default is to have them on the right.

`reqno` for `nrc2` only

This option puts equation numbers to the right margin; default is to have them on the left.

One other difference between the packages relates to the position of the `\maketitle` command. See page 4 for details.

## 3 The preamble

The preamble area of the file should specify all packages and macros definitions (if any) used; macros in particular should not be defined within the body of the file.

### 3.1 Useful packages

The following packages and their options are often necessary. Note that package order can be significant, on occasion. In particular, it is recommended that graphics packages be loaded immediately after the document class.

`\usepackage{graphicx}` Graphics (figures, illustrations, and so on) should be included using the standard *L<sup>A</sup>T<sub>E</sub>X* `graphicx` package: use of this package permits portability across different implementations of *T<sub>E</sub>X* (which itself has no graphics primitive commands).

Your *T<sub>E</sub>X*/*L<sup>A</sup>T<sub>E</sub>X* system may offer documentation; otherwise see *The L<sup>A</sup>T<sub>E</sub>X Graphics Companion* (see 5.1).

Remember to specify the printer driver as a package option, if necessary (e.g., `dvips`, `dvipson`, etc.).

`\usepackage[figuresright]{rotating}` The `rotating` package<sup>2</sup> is only needed when tables or figures must be placed in landscape (‘sideways’) position. It must be preceded by the `graphicx` package.

The `figuresright` option ensures that rotated elements are oriented with the caption at the left margin of the regular page, in accord with NRC style requirements.

`\usepackage[french]{babel}` For French-language articles, there are two requirements:

1. load `babel` with the `french` option, as shown.<sup>3</sup>
2. add the `french` option to the document class

<sup>2</sup>For the NRC’s production use, the standard distribution version of this file is currently under revision. Authors can proceed with the public version of `rotating.sty`.

<sup>3</sup>It is not necessary to use `babel` with an `english` option — that is the NRC default.

The `babel` package invokes French hyphenation patterns<sup>4</sup> as well as some of the (European) French typesetting conventions (e.g., space before some punctuation).

The `french` class option ensures that elements provided by the `babel` package are revised to meet NRC terms. As well, the class option replaces all English text which is generated automatically with the corresponding French word(s), again in accord with NRC requirements.

`\usepackage{amsmath}` A great deal of additional functionality is provided with this package, and the NRC document classes have been designed to work smoothly with it. The package is described in great detail in three documents:

1. The revised version of chap. 8 of *The L<sup>A</sup>T<sub>E</sub>X Companion* is a good guide (see 5.1 for details). As printed in the book, chap. 8 is out of date and should not be referenced.
2. All new *L<sup>A</sup>T<sub>E</sub>X* installations will have a file called `amslatex` which, when processed, yields a 43-page document (v.1.02, 01 Nov. 96). The material is essentially the same as the revised chap. 8 but the differences in presentation are sometimes useful to consider.
3. The file `amsmath.dvi` yields a more *T<sub>E</sub>X*nically detailed explanation of the package; not intended as a user guide.

`\usepackage{amsfonts}` The AMS fonts provide additional special characters frequently used by the mathematics and scientific communities. This package provides access to the following font sets: Euler (Fraktur, Roman, Script, extensions); Computer Modern (math bold italic, symbol, extensions, in the smaller sizes); Cyrillic (lightface, bold, italic, smallcaps); and the `msam` and `msbm` fonts, familiar to *RevT<sub>E</sub>X* users.

`\usepackage{cite}` Authors should use this package, which enhances the default options available in *L<sup>A</sup>T<sub>E</sub>X* (e.g., `\citen` prints cross-references without brackets). See `cite.sty` documentation for additional features.

`\usepackage{bm}` This package simplifies the use of bold symbols and other objects in math mode. It defines a single command, `\bm{...}`, which is used in math mode, and causes its argument to be typeset in the appropriate math bold font. See `bm.sty` documentation for details.

These packages and others can be found either on your machine or can be acquired from CTAN, the Comprehensive *T<sub>E</sub>X* Archive Network; use the search facilities at [www.ctan.org/search](http://www.ctan.org/search). The NRC document classes and this documentation can be found on CTAN in `macros/latex/contrib/supported/nrc/`.

<sup>4</sup>Use `\-` to signal additional potential hyphenation points.

## 3.2 Additional macros

1. Avoid creating too many personal macros, which may conflict with the NRC document classes (and possibly with other packages) and thereby slow in-house processing of files. Where these are used, macros not actively invoked in the file should be pruned out.
2. Where author macros are needed, they should all be gathered at the top of the file in the preamble area, after all packages have been loaded, and clearly marked as being author macros:

```
%%%%%%%% Author macros begin:
...
...
%%%%%%%% Author macros end
```

3. Similarly, move all `\let` statements to the preamble area, where they are immediately visible to the editor.

## 4 The body

All articles have the following elements:

1. titleblock and author information
2. abstract and resumé
3. headings and subheadings
4. text
5. bibliography

Most articles also include some or all of the following elements:

1. in-line and display mathematics
2. enumerated lists
3. tables
4. figures and illustrations (e.g., PostScript)
5. footnotes
6. offset quoted passages
7. acknowledgements

### 4.1 Titleblock and author information

All elements of the titleblock are taken care of via macros, some of which have optional arguments, to allow for variant forms and for ‘labelling’ of bits of text (for cross-referencing).

```
\title{...}
```

Lines will be broken automatically; line breaks can be forced by using `\\`.

```
\author[...]{Author1}
```

*Author1*’s name as it will appear in the titleblock and the right running head. The optional argument allows a different form of the author’s name to appear in the IDbox at page-bottom (e.g., full first name in titleblock, but initials only in IDbox).

Each author is specified separately. The document class will automatically insert ‘and’ (Fr. ‘et’) between the last and second-last names, both in the titleblock and in the IDbox area.

```
\address[label1]{addr1}
```

Address for *Author1*; this should be immediately below the `\author` entry. Each author’s address is specified separately. If no address is specified before the next author entry, the immediately preceding address is used (an address for the first author **must** therefore be specified).

The optional `[label1]` argument (any sequence of letters can be used) does not print anything; it makes it possible to relate one address to several authors (this is similar to *L<sup>A</sup>T<sub>E</sub>X*’s `\label` and `\ref` commands).

Below is an example of using the author-address cross-referencing macros. Notice that `\address` always refers to the immediately preceding `\author`.

```
\author{Author1} defines first author
```

```
\address[label1]{Address1} defines an address for Au-
  thor1 and tags it as [label1]
```

```
\author{Author2} this author doesn’t have an address,
  so the IDbox will use the immediately preceding au-
  thor’s address (i.e., Address1)
```

```
\author{Author3} defines a third author
```

```
\address{Address3} third author is at an address of their
  own
```

```
\author{Author4} defines a fourth author
```

```
\address[label1] fourth author uses the address asso-
  ciated with [label1], above
```

The net result (assuming the `breakaddress` option has been used) is the following:

**Author1, Author2, and Author4.**

Address1.

**Author3.**

Address3.

#### *IDbox address notes*

Author addresses can be augmented with additional information via numbered notes, which appear below all the authors’ names and main addresses.

**\correspond{...}**

Usually one author is selected from all co-authors to deal with correspondence.

If the argument is left empty (that is, if only `\correspond` appears below a given author entry), the following text will appear: ‘Author to whom all correspondence should be addressed:’ (Fr. ‘Auteur correspondant :’).

If the argument contains specific information (e.g., phone, fax, e-mail), it will be introduced by the words: ‘Corresponding author.’ (Fr. ‘Auteur correspondant.’). The following macros are available:

`\phone{...}`    `\fax{...}`    `\email{...}`

Note that they can be used anywhere inside the author IDbox area.

**\present{...}**

Authors may wish to indicate a temporary or current address, different from the main one provided via `\address`. This note will begin with the text: ‘Present address:’ (Fr. ‘Adresse actuelle :’).

**\AddressNote{...}**

Allows the user to input any information they wish, with no automatic text being added.

**\dedication{...}**

Will print a dedicatory text in the IDbox area, between the ‘Received/Accepted’ and the author/address sections.

**\abbreviations{...}**

Automatic printing of the word ‘*Abbreviations:*’, followed by text input inside the argument (the curly braces). Forced line breaks (via `\`) can be used to separate entries.

**\shortauthor{author list}**

Shortened list of author names for use in the right running header. This macro must be present (its absence generates an error message), and should appear below all the author-address information

**\maketitle**

This command activates the titleblock commands.

The `nrc1` class requires this command to appear **before** the abstract/resumé block of text.

The `nrc2` class requires this command to appear **after** the abstract/resumé block of text.

**\maketitle\*** [an NRC macro]

With the `nrc2` class only, where Abstracts/Resumes which spill over to a second page, a full-width rule must appear below them. Use `\maketitle*` instead of `\maketitle` to generate this rule.

## 4.2 Abstracts/Résumés

The syntax is the normal one expected for environments: a matched set of either `{abstract}` or `{resume}`:

`\begin{abstract} ... \end{abstract}`            English

`\begin{resume} ... \end{resume}`            French

Some journals may require the following, which should appear **inside** the abstract environments:

**\keywords{...}**

Automatically prints ‘*Keywords:*’, followed by whatever text is input inside the argument (the curly braces).

**\motscles{...}**

Automatically prints ‘*Mots clés :*’, followed by whatever text is input inside the argument (the curly braces).

## 4.3 Headings and subheadings

Four levels, numbered automatically. Line breaks can be forced by using `\`. To suppress numbering (e.g., for ‘Acknowledgements’), use an asterisk before the opening curly brace: `\section*{Acknowledgements}`. Note that the level-4 heading has no numbering by default.

`\section{...}` Level-1 heading

`\subsection{...}` Level-2 heading

`\subsubsection{...}` Level-3 heading

`\paragraph{...}` Level-4 heading

## 4.4 Text

Same as the default *L<sup>A</sup>T<sub>E</sub>X* commands:

`\begin{quote} ... \end{quote}`

`\begin{enumerate} ... \end{enumerate}`

`\begin{itemize} ... \end{itemize}`

`\begin{description} ... \end{description}`

`\footnote{...}`

Where lists must be flushed to the left margin, there are two NRC-specific environments to use:

`\begin{flenumerate} ... \end{flenumerate}`

[an NRC macro]

Generates a numbered list (first level only) with labels flushed to the left margin. No nesting possible.

`\begin{flitemize} ... \end{flitemize}`

[an NRC macro]

Generates a bulleted list (first level only) with labels flushed to the left margin. No nesting possible.

#### 4.4.1 Column switching in nrc2

On occasion, material for 2-column journals is best set full-width, interrupting the two text columns. For equations, the following customized code will achieve this effect:

```
\begin{FullWidth}[0.5]
\LeftColumnBar
  <equation to span both columns>
\RightColumnBar
\end{FullWidth}
```

The following description provides details of each step:

`\begin{FullWidth} ... \end{FullWidth}` This environment encloses the material which is to span the two columns. The text for the two columns immediately above this environment will be balanced. Text immediately below the environment will resume the 2-column layout.

The optional `[0.5]` argument (‘one half’ in this example) is an adjustment factor, affecting the split between left and right columns. Default is ‘1.0’, the units are nominal line depths in the default font size; increasing the factor tends to increase the number of lines in the left column.

`\LeftColumnBar`

This draws a rule below the left column of the 2-column text which is above the full-width material.

`\RightColumnBar`

This draws a rule above the right column of 2-column text which is below the full-width material.

`\BalanceColumns[0.5]`

This command is used at the end of a file, in order to balance the final page.

The optional argument serves the same purpose and is used in the same way as that for `\begin{FullWidth}`.

Where both equations and text must span two columns, the text portions must *additionally* be enclosed in the following environment:

```
...
\begin{WideText}
  <text material>
\end{WideText}
...
```

The text will then be flush left, and indented 3em from the right margin, as per NRC requirements, while the equation numbers will be flushed to the right (where that is the style). The two combined will look like this:

```
\begin{FullWidth}[0]
\LeftColumnBar
\begin{equation}
  <equation material here>
\end{equation}

\begin{WideText}
  <text material>
\end{WideText}

\begin{equation}
  <equation material here>
\end{equation}
\RightColumnBar
\end{FullWidth}
```

## 4.5 Mathematics

In addition to default *L<sup>A</sup>T<sub>E</sub>X* commands, the `amsmath` package provides a number of useful enhancements. Consult both the revised chap. 8 of *The L<sup>A</sup>T<sub>E</sub>X Companion* and the *AMS L<sup>A</sup>T<sub>E</sub>X* documentation for details (see section 5.1). See also `bm.sty` for enhanced font handling inside math mode.

`\begin{equation} ... \end{equation}`

`\begin{array} ... \end{array}`

`\begin{subequation} ... \end{subequation}`

This is an `amsmath` environment *within which* other environments are used, to achieve lettered sub-equation numbers: e.g., 1.2a, 1.2b, etc. There is a file `subeqn.tex` on most *T<sub>E</sub>X* installations with additional details.

In addition to the usual environments, two NRC macros allow further customisation of the form of the equation number:

`\numberby{...}{...}` [an NRC macro]

For articles where equation numbers must include section numbers (e.g., equation 3.2 is the second equation in section 3), input the following in the preamble area, after all `\usepackage` commands:<sup>5</sup>

`\numberby{equation}{section}`

The first argument contains what element is being numbered; the second indicates that section numbers should be included in that numbering.

`\eqnoformat` [an NRC macro]

The `nrc2` class default format is for square brackets around equation numbers. Other options (i.e., parentheses) can be achieved via the following definition, to be placed in the preamble, after all packages have been loaded:

<sup>5</sup>This avoids having to load the `amsmath` package in order to access the `\numberwithin` command, which does the same thing.

```
\renewcommand{\eqnoformat}[1]{(#1)}
```

`dcolumn` NRC journal style is to align on decimals; please use the `dcolumn` package, available from CTAN, if not already part of your installation.

## 4.6 Tables, Figures, Captions

### 4.6.1 Tables

```
\begin{table} ... \end{table}
```

For regular tables, up to same width as text (page-wide or column-wide).

```
\begin{table*} ... \end{table*}
```

For tables spanning two columns.

```
\begin{sidewaystable} ... \end{sidewaystable}
```

For rotating a table sideways. To ensure rotation is in correct direction, remember to add the `figuresright` option to the `rotating` package in the Preamble.

```
\begin{sidewaystable*} ... \end{sidewaystable*}
```

For rotating a table sideways across a 2-column page. As for above, make sure the `figuresright` option has been added to the `rotating` package, loaded in the Preamble.

```
\begin{tabular} ... \end{tabular}
```

**Note:** use `\tabcolsep` to slightly reduce/increase intercolumn space.

```
\hline* [an NRC macro]
```

For the thicker lines at top/bottom of tables. Regular 1pt rules accessed via default `\hline` command.

### 4.6.2 Figures

```
\begin{figure} ... \end{figure}
```

For regular figures, up to same width as text (page-wide or column-wide).

```
\begin{figure*} ... \end{figure*}
```

For figures spanning two columns.

### 4.6.3 Captions

```
\topcaption{...} [an NRC macro]
```

NRC style has all captions at the top of their table or figure. Syntax is the same as for *L<sup>A</sup>T<sub>E</sub>X* default `\caption`.

Captions will be automatically sized to the width of their table, provided the file is processed at least twice. Should a caption require a different width, the following code, used inside the float environment, will work:

```
\setlength{\captionwidth}{ ... }
\topcaption{ ... }
```

```
\sepcaption{...} [an NRC macro]
```

For captions separated from their full-column or full-page tables and figures. Caption will appear at top of next column or next page. Usage is **different** from regular caption commands in that it must appear in its own separate `table` environment:

```
\begin{table}
  \sepcaption{....}
\end{table}
```

```
\begin{table}
  <contents of table>
\end{table}
```

### 4.6.4 Centering

To centre any of these elements, the `\centering` command is preferred to the `{center}` environment, which adds its own vertical space and hence interferes with NRC spacing requirements.

## 4.7 Cross-Referencing

As with all cross-referencing codes, process file 2 or even 3 times, to ensure that all [?] have been resolved; that is, until the following message no longer appears:<sup>6</sup>

```
LaTeX Warning: Label(s) may have changed.
Rerun to get cross-references right.
```

Components of an article affected by cross-referencing — and thus requiring several processing runs, include the following:

- cross-refs to tables and figures, and to equations, etc. (via `\ref`, `\pageref`, and `\label`)
- automatic sizing of caption widths for floats (via `\topcaption`)
- bibliographies (via `\cite et al.`, and `\bibitem`)

To ensure that cross-referencing via the `\label` and `\ref` commands is correctly associated with the matching tables and figures, it is recommended that the `\label` command appear **inside** the closing parentheses of caption commands.

<sup>6</sup>Note, however, that if cross-referencing codes are incomplete, [?] will remain. In such cases, the warning message reads: **LaTeX Warning: There were undefined references.**

## 4.8 Bibliography

The default macros `\cite` and `\bibitem` are usually adequate for citations and bibliography entries. Additional flexibility can be had by using the `cite` package; for more complicated requirements, authors may choose to use the `natbib` package. Authors using the latter must remember to submit their `.bib` file, and are reminded to use the referencing style and order of elements appropriate to the journal to which they are submitting.<sup>7</sup>

The main `cite` commands are:

```
\cite{...}
```

To produce cross-referencing digit or digits inside square brackets.

```
\citen{...}
```

To produce cross-referencing digit with **no** brackets.

Further options are described in the `cite` documentation. However, one in particular will be noted here, as some NRC journals require in-line citations to appear within parentheses, rather than square brackets. If this is the case, the following code should be added to the preamble (after all packages, including `cite`, have been loaded):

```
\renewcommand{\citeleft}{()}
\renewcommand{\citeright}{()}
```

The references/bibliography section at the end of the paper uses the default *L<sup>A</sup>T<sub>E</sub>X* commands:

```
\begin{thebibliography}{99}
  \bibitem[...]{...}

  \bibitem[...]{...}

\end{thebibliography}
```

## 4.9 Appendices

Where only the word ‘Appendix’ is needed, use the command `\section*{Appendix}` (note that the asterisk suppresses any section numbering, either by digit or letter). If equations within the Appendix are to restart at ‘1’, insert

```
\setcounter{equation}{0}
```

If more than the word ‘Appendix’ is to appear, then the `\section` command must be augmented by either `\appendix` or `\appendix*`.

The `\appendix` command (unmodified) behaves as in the standard *L<sup>A</sup>T<sub>E</sub>X* classes; so, for ‘A. Title of First Appendix’, the following code is used:

```
\appendix
\section{Title of First Appendix}
```

<sup>7</sup>As yet, there is no `nrc.bst` file for the NRC.

For ‘Appendix A:’ + a subheading (and then ‘Appendix B:’ + its subheading, etc.), the following code will do the job (notice that the word ‘Appendix’ is **not** input):

```
\appendix*
\section{A subheading}
...
\section{Next subheading}
```

Both `\appendix` and `\appendix*` preserve `\numberby` commands, as one might expect: equations in appendix A are numbered ‘A.1’, ‘A.2’, etc.

## 5 Resources

The following documentation, newsgroups, and web pages are useful source to consult for help, news, and updates. Keep in mind, however, that conflicts may arise when

### 5.1 Books and articles

*The L<sup>A</sup>T<sub>E</sub>X Companion*: by Michel Goossens, Frank Mittelbach, and Alexander Samarin (Addison-Wesley, 1994).

Contains many details to assist users. Caveats:

Chapter 8 is no longer valid — a revised version is available in both `.ps` and `.pdf` formats from CTAN.<sup>8</sup>

As well, the sections on graphics and colour have been superseded by material in *The L<sup>A</sup>T<sub>E</sub>X Graphics Companion*.

*The L<sup>A</sup>T<sub>E</sub>X Graphics Companion: Illustrating Documents with T<sub>E</sub>X and PostScript*, by Michel Goossens, Sebastian Rahtz, and Frank Mittelbach (Addison-Wesley, 1997).

*Math into L<sup>A</sup>T<sub>E</sub>X: An Introduction to L<sup>A</sup>T<sub>E</sub>X and AMSL<sup>A</sup>T<sub>E</sub>X*, by George Grätzer (Birkhäuser, Boston and Springer Verlag, New York, 1996).

*First Steps in L<sup>A</sup>T<sub>E</sub>X: A Short Course*, by George Grätzer (Birkhäuser, Boston and Springer Verlag, New York, summer 1999).

*The T<sub>E</sub>Xbook*: by Donald E. Knuth (Addison-Wesley, 1986).

*L<sup>A</sup>T<sub>E</sub>X: A Document Preparation System — User’s Guide and Reference Manual*, by Leslie Lamport (Addison-Wesley, 1994, 2nd ed).

*A Guide to L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>*: by Helmut Kopka and Patrick W. Daly (Addison-Wesley, 1998, 3rd ed).

Michael Downes: “Breaking equations,” *TUGboat* 18,3 (Sept 1997): 182–194.

<sup>8</sup>CTAN = Comprehensive T<sub>E</sub>X Archive Network; a list of site addresses can be found on the TUG home page [www.tug.org](http://www.tug.org). Follow the links to `/tex-archive/info/companion-rev`.

Keith Reckdahl: “Using EPS graphics in L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> documents,” *TUGboat* 17,1 (March 1996): 43–53.

Keith Reckdahl: “Using EPS graphics in L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> documents, Part 2: Floating figures, boxed figures, captions, and math in figures,” *TUGboat* 17,3 (Sept. 1996): 288–310.

The latest version of the Reckdahl material can be found on CTAN in `info/epslatex` in both `.ps` and `.pdf` formats.

## 5.2 Electronic resources

**www.tug.org:** the most complete stepping-stone to the worldwide T<sub>E</sub>X community, including the CTAN archives, user groups, news, and so on.

**comp.text.tex** a general all-purpose newgroup for T<sub>E</sub>X users. Consult your local technical support group to see if newsgroup access is available via your browser.

**FAQ:** put together by the UK T<sub>E</sub>X Users Group; available via the TUG web page.

**Listserv lists:** there are a great number of specialised lists. Consult the TUG web pages for details.

## 6 In-house Coding for Articles

### 6.1 File activity log

At the very top of each file are entries noting activities specific to the file. Comment structure may vary but could cover such activities as editing, typesetting, screen-proofing, checking tables and figures, inputting author corrections, and so on. Entries may be dated or not, depending on journal. Comments should be on one line each, beginning with `%%` signs:

```
%% Typeset by: ...
%% Edited by: ...
%% Tables and Figures: ....
%% .... <and so on> ...
```

Specific day-to-day details could also be added:

```
%% 17 NOV 99: ran file to test author code
%% 25 NOV 99: input c/e; screen-proofed output
%% 9 DEC 99: proofs printed, mailed to author
%% .... <and so on> ...
```

If several people work on the same file, initials could be added after each log entry.

### 6.2 Changing class option choices

Included in the main class options are three which are intended for authors only; remove the following options before processing author files in-house:

```
genTeX      type1rest      usecmfonts
```

Similarly, there are a number of class options related to various stages of in-house production and thus intended only for NRC editorial staff. Below is a list of these options, followed by a brief description of their purpose:

```
\documentclass[<options here>]{<class here>}
                                breakaddress      nrc1
for nrc2 only: twocolid          OR nrc2
for nrc2 only: twocolid*
                                preprint
                                proof
                                pagnf
                                trimmarks
                                finalverso
```

**breakaddress** This option affects the author IDbox at the bottom of the titlepage. It inserts a linebreak between the author name and address; the default setting has them print on the same line.

**twocolid** For `nrc2` only. This option affects author information (the IDbox at page bottom): the text spans both columns.<sup>9</sup>

<sup>9</sup>The default is to set all IDbox material into the bottom of the left column.

**twocolid\*** For `nrc2` only. This variation for the IDbox also spans both columns, but the material inside is itself set up in two columns.

**preprint** This affects headers and footers, omitting such items as dates, page numbers, and so on. For any additional text in running heads (e.g., ‘Rapid Communication’), use `\shortauthor`.

**proof** Prints a special centred footer on every page with the following text: ‘Proof/Épreuve’.

**pagnf** Prints a special centred footer on every page with the following text: ‘Pagination not final/Pagination non finale’.

**finalverso** Specifies that the paper should end on a recto page (creating a blank, unnumbered page if the text doesn’t for itself; the blank page does *not* appear in the paper’s page count).

**trimmarks** Prints cropmarks at all four corners. Note that trimmarks for `nrc2` are off the regular 8.5 × 11-inch paper, but will be visible if oversized paper is used.

### 6.3 Additional packages

`\usepackage[...]{color}` The `color` package is used for in-house production of reversed out text (white on black). As with graphics packages, the driver must often be specified, as an option.

**personal macros** Over time, it may become apparent that some small modifications or shorthands are used in almost all papers. Until such changes are incorporated into the document classes, these should not be inserted into each article file but rather stored in a separate file, loaded via the `\usepackage` command and inserted after all other packages.

### 6.4 Package to remove

If the user has specified

```
\usepackage[T1]{fontenc}
```

so as to enable French language hyphenation to work when using CM or restricted Type 1 fonts, the package invocation should be deleted (the NRC classes supply their own `fontenc` invocation).

### 6.5 Additional macros

Following the loading of all packages and their options, files may contain additional macros from the author (see page 3 for instructions provided to authors). These should be clearly marked off with, for example, a row of `%` signs both above and below. Keep in mind the potential for author definitions to interfere or over-ride journal macros and specifications; for example, authors may have commands to specify

page dimensions, or fonts for sections, or numbering schemes. Where these do not collide with journal requirements, they can probably be safely retained. However, where there is interference, journal definitions take precedence. Ideally, authors will increasingly switch to using the NRC’s document classes and reduce the chances of such problems.

### 6.6 Other additions in the preamble area

The following information is input by the NRC’s in-house production team, and not by the author. It appears after all packages have been loaded, and before the `\begin{document}` statement (after `\journal` would be a good place:

```
\setcounter{page}{<number>}
\journal{<Short name>}
\volyear{<vol no.>[<copyright year>]{<year>}
```

```
\received{<complete date>}
\accepted{<complete date>}
\IDdates{<other date material>}
```

```
\setcounter{page}{...}
```

Insert starting page number for article. The information will be printed on the titlepage (bottom left) and in the running head; the complete page range will be calculated and inserted automatically when the file is run a second time.

```
\journal{...}
```

Specific journal abbreviations must be entered via this macro (e.g., `Can. J. Civ. Eng.`).

```
\volyear{...}[...]{...}
```

First argument is for the volume number. The second (optional) argument specifies the copyright year; if the argument is not present, the copyright year is assumed to be the same as the publication year. The third argument specifies the publication year. This information is used in the titlepage footer and in the left running head.

```
\received{...}
```

Insert date as per journal style — e.g., June 6, 1996 — but without a final period (it is automatically inserted). The word ‘Received’ (Fr. ‘Reçu le’) will be automatically generated; however, the date must be input in French (e.g., 6 juin 1996). This text appears in the author IDbox area.

```
\accepted{...}
```

Insert date as per journal style — e.g., November 25, 1996 — but without a final period (it is automatically inserted). The word ‘Accepted’ (Fr. ‘Accepté le’) will be automatically generated; however, the date must be input in French (e.g., 25 novembre 1996). This text appears in the author IDbox area.

`\IDdate{...}`

Unlike the previous two macros, no canned text is included, allowing the user to insert customised date references to print after the ‘Received’ and ‘Accepted’ material in the author IDbox area.

## 6.7 Special titleblocks

Some journal material requires a special heading: a solid black stripe with reversed-out white lettering. The white-on-black effect requires the presence of a special package in the preamble area, immediately below the graphics package, in addition to the special title coding:

```
\usepackage[...]{color}
```

As with the `graphicx` package, it must have its ‘driver’ option specified. In this case, it is Y&Y’s `dvipsone`. Since both the `graphicx` package and `color` share the same option, it is possible to merge them into one line:

```
\usepackage[dvipsone]{graphicx,color}
```

Having added the `color` package, the actual special title command will now work. There are two versions of the command:

`\specialtitle`

This allows the regular titleblock (`\title`, etc.) to be included with the special title; for example, a review article with its own title.

```
\begin{document}
\specialtitle{REVIEW/SYNTH\‘ESE}
\title{Regular article title}
\author{Someone’s name here}
\address{Someplace nice and warm}
\correspond
\shortauthor{Review/Synth\‘ese}
\maketitle
```

`\specialtitle*`

The regular article titleblock cannot be used with this variant; for example, an editorial or other non-article material.

```
\begin{document}
\specialtitle*{EDITORIAL/\‘EDITORIAL}
\shortauthor{Editorial/\‘Editorial}
\maketitle
```

For non-articles, the headers and footers are changed by using the `\pagestyle{nrcplain}` command. The page numbers will appear at bottom centre, the NRC Canada copyright footer is suppressed, and the running heads are suppressed entirely. For further adjustments to pagination, see ‘Miscellaneous adjustments’.

## 6.8 Translations of abstracts/resumés

The following lines are inserted at the end of each abstract or resumé, before the `\end{...}` statement:

`\translation` generates the text: ‘[Journal translation]’.

`\traduit` generates the text: ‘[Traduit par la rédaction]’.

`\Traduit` generates the text: ‘[Traduit par la Rédaction]’.

Note that author files will only have one: an abstract or a resumé. It is useful to insert a suitable `\vspace` to represent the approximate space the translation, so that page breaks will not be unduly affected by the additional text.

## 6.9 Miscellaneous adjustments

1. For **roman numerals**, with only page numbers in the footers, insert the following lines at the end of the preamble, just above the `\begin{document}` line (notice that, in this example, pagination will begin with roman iii):

```
\pagestyle{nrcplain}
\pagenumbering{roman}
\setcounter{page}{3}
```

2. To add parentheses (or any other design element) to (roman) page numbers, insert the following just before the `\setcounter{page}{...}` command:

```
\renewcommand\thepage{(\roman{page})}
```

3. For full-width text spanning two columns, the default left and right margins can be altered by using the following optional argument to the `{WideText}` environment (recall that the default values are 0em on the left, 3em on the right):

```
\begin{WideText}[<l.margin>][<r.margin>]
<text here>
\end{WideText}
```

## 6.10 Two-column bilingual texts

Special coding at both the top of the file and around the bilingual paragraphs is required.

### 6.10.1 In the preamble

The first step is to load the appropriate package and options. These are added after the `\documentclass` line in the preamble.

1. if main (left column) language is English:

```
\usepackage[french,english]{babel}
```

As English is the default, there is no need to specify it as an option to the document class.

2. if main (left column) language is French, there is an additional option to add to the document class line:

```
\documentclass[french]{nrc1}
\usepackage[english,french]{babel}
```

Notice that this seems counter-intuitive.

### 6.10.2 In the bilingual text

The next step is to code the English and French texts so that the tops of matching paragraphs align horizontally. One set of codes surrounds the entire bilingual set of paragraphs; another set of codes is put around each matched set of English-French paragraphs.

```
1. \begin{par-text}[<language>]
2.   \begin{par-para}
3.     ... <English paragraph> ...
4.   \othercol
5.     ... <French paragraph> ...
6.   \end{par-para}
7.
8.   \begin{par-para}
9.     ... <English paragraph> ...
10.  \othercol
11.    ... <French paragraph> ...
12.  \end{par-para}
13. \end{par-text}
```

**lines 1, 13:** The entire 2-column section of matching paragraphs is set inside a `par-text` environment. This separates the parallel text portion of a file from other elements that may not require such formatting: headings or other text, graphics inclusions, etc. The `par-text` command has one required option (language) and two width options (to change from default values).

**line 1:** `[<language>]` When the left-column language is English, `[french]` is the right-column ‘option’.

When left-column language is French, the right-column language option is `[english]`. **Also required** is the preamble code specified in section 6.10.1, item 2.

**line 1:** The default column widths, which do **not** need to be specified, are:

	left col	inter-col	right col
<code>nrc1</code>	15pc	2pc	17pc
<code>nrc2</code>	20.5pc	2pc	20.5pc

To change left column width and inter-column space (the right column width is calculated, based on these other two dimensions):

```
\begin{par-text}[<lang.>][<dimen1>][<dimen2>]
```

where `<dimen1>` is the new left column width, and `<dimen2>` is the new inter-column space. If only the inter-column space, `<dimen2>`, is to change, `<dimen1>` must still be inserted, in order for the program to find the 2nd set of square brackets.

**lines 2 and 6:** matching English/French paragraphs are set inside a `par-para` environment

**lines 3 and 5:** the matched sets of paragraphs (which can of course be longer than one line!)

**lines 4 and 10:** to signal the end of the left-column paragraph and the start of its matching right column paragraph, use `\othercol`

**line 7:** to make it easier to read the source file, separate each set of `{par-para}` with a blank line or a % sign

**Note:** The default vertical space between lines is set at 1pc ( $\approx$  one blank line). To change this at specific points, explicit `\vspace{...}` commands can be inserted between sets of `{par-para}`. To change this for the entire file, insert `\parallelparsep{<some dimen.>}` before `{par-text}`.

## 7 Final notes

1. There is no dotless-j available in Adobe PostScript fonts. The only dotless-j appears in math mode —  $j$  — which is accessed by `\jmath$`.
2. Only English and French hyphenation are currently set up; English is the default, French is invoked when the `[french]` document class option is specified.