

# New L<sup>A</sup>T<sub>E</sub>X Style for FAO Yearbook \*

Boris Veytsman<sup>†</sup>

2013/12/17, v1.4

## Abstract

This package provides class for typesetting FAO Yearbook. This is a refactoring of the `faoyeabook` package

## 1 Introduction

The package `faoyearbook` [1] was written in 2011 for FAO Statistical Yearbook.

The package `faosyb` is a refactoring of this package. We use the lessons learned and incorporate new design requirements. We use some (actually plenty) code from the previous version, but since we do not have to be compatibility, we can correct some unfortunate decisions.

## 2 User Guide

The installation of the class follows the usual practice [2] for L<sup>A</sup>T<sub>E</sub>X packages:

1. Run `latex` on `faosyb.ins`. This will produce the L<sup>A</sup>T<sub>E</sub>X class `faosyb.cls`.
2. Put the file `faosyb.cls` to the place where L<sup>A</sup>T<sub>E</sub>X can find it (see [2] or the documentation for your T<sub>E</sub>X system).
3. Update the database of file names. Again, see [2] or the documentation for your T<sub>E</sub>X system for the system-specific details.
4. The file `faosyb.pdf` provides the documentation for the package (this is the file you are probably reading now).

As an alternative to items 2 and 3 you can just put the file `faosyb.cls` in the working directory where your `.tex` file is.

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<sup>†</sup>[borisv@lk.net](mailto:borisv@lk.net), [boris@varphi.com](mailto:boris@varphi.com)

## 2.1 Invocation

To use the class, put in the preamble of your document

```
\documentclass[<options>]{faosyb}
```

If the option `web` (default) is chosen, the pages of the book have the dimensions corresponding to A4 paper. However, if the option `print` is chosen, then the pages are printed on a wider area, and crop marks are added for the trimming.

If the option `issuu` is chosen, the internal links are transformed to external in the form suitable for <http://www.issuu.com>. Note that this option probably does not make much sense unless `web` option is also chosen. However, it is still possible to select both `print` and `issuu` option if someone needs it for an obscure purpose.

The option `Draft` (note the capitalization!) leads to the the large word ‘DRAFT’ printed across the pages. The standard  $\text{\LaTeX}$  option `draft` leads to the same result, but it also makes other changes, most notably, in the behavior of the `\includegraphics` command and warnings.

`\ifprint` It is possible to query the current mode using the macro `\ifprint`, for example

```
\ifprint
  Stuff for print version
\else
  Stuff for web version
\fi
```

Any branch of this conditional may be empty, so web-only stuff can be coded as

```
\ifprint\else Web-only stuff\fi
```

`\includegraphics` There is a special facility for `\includegraphics` command to choose a file depending on the current mode of the package. Namely, if there is a file `image_print.pdf` visible by  $\text{\LaTeX}$ , then the commands `\includegraphics{image}` or `\includegraphics{image.pdf}` selects the file `image_print.pdf`. In the case this file is not found, the file `image.pdf` is selected instead. Similarly in the web mode the file `image_web.pdf` will be selected first, and only if it does not exist, `image.pdf` is selected. This rule works also for commands `\includeLargeGraphics` and `\includeExtraLargeGraphics` described below.

Note that at this time there is no similar facility for the `\input` command.

## 2.2 Setting Parameters

`\faoset` Some parameters in the class can be set with the command `\faoset{<key=value>}`, for example

```
\faoset{bgcolor=blue}
```

Most of the parameters are explained below.

One of the important parameters is **year**. While the package at this time does not provide facilities for the title pages, it needs to know the year for the proper typesetting of footers. The command

```
\faoset{year=2013}
```

is used to provide this information.

## 2.3 Fonts

`\narrowfamily`    The class uses PT Sans fonts [3] for body text and Arev fonts [4] for math. It defines two additional families: Narrow and Caption, corresponding to the PT Sans Narrow and PT Sans Caption font. They can be selected by the declarations `\captionfamily` and `\textcaption` or by the commands `\textnarrow{<text>}` and `\textcaption{<text>}` following the usual L<sup>A</sup>T<sub>E</sub>X conventions. Note that since PT Sans does not provide math alphabet, this choice does not change the mathematical text.

PT Sans Narrow may be useful for typesetting tables, for example,

```
{\scriptsize\narrowfamily
\rowcolors{4}{@bgcolor!30}{@bgcolor!20}
\input{./Tables/P1.DEM_1.tex}}
```

The choice of `\narrowfamily` is automatically done by the `tablepages` environment.

## 2.4 Colors and Icons for Parts

A Yearbook is separated into parts (more on this below). Each part has its own color and icon. They are set by the keys `bgcolor` and `icon` of the `\faoset` command, for example,

```
\faoset{icon=./Icons/agriculture.png}
\faoset{icon=./Icons/population}
\faoset{bgcolor=blue}
\faoset{bgcolor=green!25!yellow}
```

The parameter for the `icon` key can be any file name (with or without extension), suitable for the `\includegraphics` command. The parameter for the `bgcolor` key can be specified in any form acceptable by `xcolor` package [5].

The key `tableheadcolor` sets the color for the headers of tables defined by H or P key (see Section 2.7). Normally it is the current `@bgcolor` color, but it can be set to any required value.

`\selecticon`    Note that `\faoset` command does not change the icon or background color immediately. When issued *before* `\part` command, it sets up icon and color for

the next part. If needed, you can manually change this using `\selecticon` and `\selectcolor` commands. In most cases you should *not* use these commands.

`@bgcolor`      After a `\part` command (or explicit `\selecticon` and `\selectcolor` command we can access the current values of the color in `@bgcolor`, `@tablecolor`  
`@tableheadcolor` colors and `\currenticon` macro.  
`\currenticon`

Foreword and other parts in the front matter of the book do not use icons. Instead they have geometric symbols. The key `symbol` can have the values `righttriangle`, `square`, `rightsemicircle` and sets the symbol for such part.

`\lettrine`      Front matter uses dropped capitals (lettrines) in the beginning of the sections. The command `\lettrine{W}{ord}` can help in this case.

## 2.5 Sectioning

`\part`      The main division of the text are `\parts`. The command `\part{<title>}` is used for  
`\section`      numbered parts, while the command `\part*{<title>}` is used for unnumbered parts.  
`\subsection`      The next division are `\sections` and `\subsections`. They are never numbered.  
The style does not use `\chapters`.  
`\EndPartIntro`      The sections immediately following new parts are special: they are typeset in one column and cannot have floats. The command `\EndPartIntro` switches to the “normal” sections.

## 2.6 Headers and Footers

`\evenfootmark`      Normally headers and footers are defined by the text. However, there is a  
`\oddfootmark`      possibility to change some of them. Commands `\evenfootmark{<text>}` and `\oddfootmark` set the right and left footers for even and odd pages correspondingly (the remaining footers are used by the page numbers). By default they are defined as

```
\evenfootmark{\textbf{FA0} Statistical Yearbook \textbf{\fao@year}}
\oddfootmark{\rightmark}
```

The last command sets the footer to be the current section name (or part name before the first section), but the user can change this.

## 2.7 Floats

One of the most important changes from the previous version of the class [1] is the treatment of floats.

In standard  $\text{\LaTeX}$  floats “float”: they can be placed by the algorithm anywhere. The previous version made them “sticky”: the author explicitly tells  $\text{\TeX}$  where floats should be placed. However, to do so the class required the author to make explicitly page breaks, which was not very convenient.

This version has a completely rewritten interface and algorithm for placing floats:

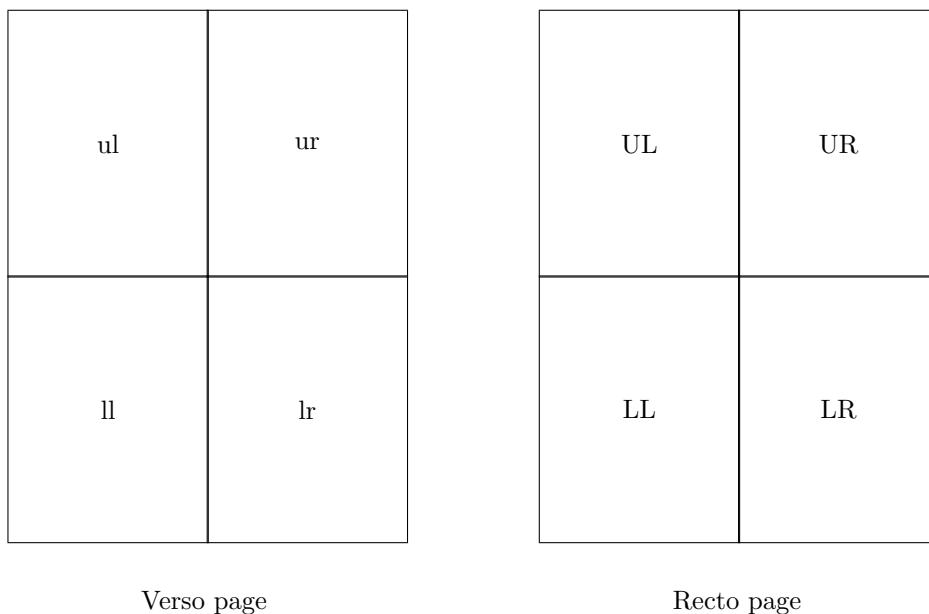


Figure 1: A Spread

1. Like in standard  $\text{\LaTeX}$ , authors do not normally provide page breaks— $\text{\TeX}$  tries to make this decision for them.
2. Like in the previous version, floats are put exactly where the authors want them—no default placing and second-guessing.

Here is how it is done.

The main unit of the book is *spread*: a verso page and the corresponding recto page. Each page is divided into four quarters, upper left, upper right, lower left and lower right. We will denote them `ul`, `ur`, `ll`, `lr` for the verso page and `UL`, `UR`, `LL`, `LR` for the recto page (Figure 1). We allow four kinds of floats:

**Single floats** occupy exactly one quarter. They are denoted as `S`.

**Tall floats** occupy two quarters stacked vertically (for example, `ul` and `ll`). They are denoted as `T`.

**Wide floats** occupy two quarters adjacent horizontally (for example, `LL` and `LR`). They are denoted as `W`.

**Big floats** occupy all four quarters on a page. They are denoted as `B`.

The parameters  $\{\langle type \rangle\}$  and  $\{\langle location \rangle\}$  are mandatory for floats, for example

```

\begin{map}{T}{ur}
...
\end{map}
\begin{chart}{S}{UL}
...
\end{chart}

```

For multiquarter floats the location is the location of the upper left corner, so Big float can use only `ul` or `UL` location.

Of course, not all combinations are valid: you cannot specify float as `{T}{ll}` or `{W}{UR}`, for example. If you use such combinations, the results may be unpredictable. Also it is not predictable what happens if you try to put overlapping floats (e.g. `{S}{UR}` and `{W}{UL}`).

There are two additional rules:

1. A verso page may have text and floats (still it is recommended that if it has text, then it should not have floats occupying the upper left corner).
2. A recto page may have *either* text or floats: if there are floats for this page, all text is moved to the following verso page.

<code>chart</code> <code>map</code> <code>table</code>	<p>There are three types of floats defined by the class:</p> <p><b>chart</b> plots and other charts,</p> <p><b>map</b> mapped data.</p> <p><b>table</b> mini tables.</p>
<code>caption</code>	<p>Each of these kinds of material is typeset using the corresponding environment: <b>chart</b>, <b>table</b> or <b>map</b>. Note that the caption for each of these environments <i>must</i> precede the graphical material, for example:</p>

```

\begin{chart}{B}{UL}
\caption{Hunger Data}
\label{chart:hunger}
\includegraphics{hunger.pdf}
\end{chart}

```

Note that our class redefines `table` environemnt!. For tables on separate pages use `longtable`.

<code>\chartwidth</code> <code>\chartheight</code>	<p>Inside a <b>chart</b>, <b>map</b> or <b>table</b> it is useful to know the size allocated for the graphics or table, for example, to be able to scale the graphics. Two lengths, <code>\chartwidth</code> and <code>\chartheight</code> provide this information, so the user can say, for example,</p>
---	--

```

\includegraphics[width=\chartwidth, height=\chartheight]{theChart}

```

`\source` Inside a `chart`, `map` or `table` the macro `\source{<source>}` gives the source of the information, for example,

`\Source{FA0, Statistical Division [FAOSTAT]}`

`\listoftables` The standard L<sup>A</sup>T<sub>E</sub>X has the command `\listoftables` to produce the list of  
`\listofcharts` tables in the document. Our class retains this command and produces two addi-  
`\listofmaps` tional commands `\listofcharts` and `\listofmaps` with the obvious meaning.

## 2.8 Page Breaks

`\clearpage` Standard L<sup>A</sup>T<sub>E</sub>X has commands for immediate page break (e.g. `\clearpage`)  
`\cleardoublepage` and for switching to the next recto page, possibly ejecting the next verso page  
`\clearspread` (`\cleardoublepage`). The class provides another command `\clearspread`. It  
switches to the next *verso* page, possibly ejecting the next recto page (and putting  
there floats intended for this page, if any).

## 2.9 Tables

`tablepages` The tables at the end of a part should be typeset inside `tablepages` environment. The environment switches to the one column setup, decreases the margins and changes the font to `\narrowfamily`.

To typeset numerical items one should use `d` column identifier with the format `d{<a.b>}`, where *a* is the number of decimal in the integer part of the number, and *b* is the number of decimal digitst in the fractional part. For example, a number 12.345 corresponds to `d{2.3}`. The column headers are usually *not* numerical, so one need to use `\multicolumn` entries to typeset them. The class defines several such entries:

**H** produces a centered entry.

**P** produces an entry of a given length, for example, `P{1.5cm}`

**C** produces an entry of the length corresponding to the given number of numerical columns. For example, `C{2}` corresponds to a header of two numerical columns. Each column is assumed to be of the size enough to store  $-99.999$ .

`\hhline` For the rules that do not span the table width `\hhline{<specificaition>}` command from the `hhline` package should be used. The `{<specification>}` argument of this command has many variants, but for our purposes we need only one variant: the command `-` produces a horizontal line spanning one column. The color of this line is determined by the command `\arrayrulecolor{<color>}`, issued in the last `>{<argument>}` command before the `-` specification. Therefore the command `>\arrayrulecolor{@tableheadcolor}-` produces a line of the color `@tableheadcolor`, which is seen as the absence of line. The command `>\arrayrulecolor{black}---` produces a black line spanning three columns.

Thus if we have a four-column table and want a rule spanning columns 2–3, the following command should be issued:

```
\hhline{>\arrayrulecolor{@tableheadcolor}}~% Column 1, no rule
>\arrayrulecolor{black}--% Columns 2 and 3, black rule
>\arrayrulecolor{@tableheadcolor}}~% Column 4, no rule
```

The usual `*` specification may be used for repeating patterns, for example, `*{5}{-}` is equivalent to `-----`.

The vertical bar `|` specification in the `\hhline` argument means an interruption of the line. The interruption is by default a black interval, to make it the same color as the header background, use `>\arrayrulecolor{@tableheadcolor}}|`.

The design of the tables in the current edition requires several important changes to the usual tables:

1. There should be no `\toprule` at the beginning of a table.
2. The first row header of a table must be empty and white; this is done by the command `\cellcolor{white}` in this cell.
3. `\hhline` separating rows in the header must not go through this first white cell; this is done by the `~` specification.

## 2.10 Publication Descriptions

<p>publication</p> <p>\pDescription</p> <p>\pEdition</p> <p>\pCycle</p> <p>pWeb</p>	<p>FAO yearbook describes some FAO publications. These publications should be put inside the environment <code>publication</code>. The environment has one mandatory argument, which is the title of the publication, and one optional argument, which sets the file name of the publication cover. Note that the option argument, if present, must precede the mandatory one. If this argument is absent, no cover is included. Inside the environment the macros <code>\pDescription{&lt;description&gt;}</code>, <code>\pEdition{&lt;year&gt;}{&lt;edition&gt;}</code>, <code>\pWeb{&lt;URL&gt;}</code> and <code>\pCycle{&lt;date&gt;}</code> are used to typeset the corresponding items related to the publication. For example,</p> <pre>\begin{publication}[./Plots/StateOfFoodAndAgriculture.png]{The State of Food and Agriculture} \pDescription{The State of Food and Agriculture, FAO's major annual flagship publication, aims at bringing to a wider audience balanced science-based assessments of important issues in the field of food and agriculture. Each edition of the report contains a comprehensive, yet easily accessible, overview of a selected topic of major relevance for rural and agricultural development and for global food security. This is supplemented by a synthetic overview of the current global agricultural situation.} \pEdition{2010}{Livestock in the balance} \pEdition{2011}{Women in Agriculture Closing the gender gap for development} \pCycle{May each year}</pre>
---	--



```
\pWeb{http://www.fao.org/docrep/013/i2050e/i2050e00.htm}
\end{publication}
```

Note that, as in the example, some fields may be repeated.

**publicationparskip**      Two spacing parameters can be used for typesetting of publications: **publicationskip** is the amount of additional space between the publications, while **publicationparskip** is the space between the paragraphs inside the publication environment. The default values correspond to the command

```
\faoset{publicationskip=6pt plus 2pt minus 2pt,
        publicationparskip=6pt plus 6pt minus 4pt}
```

## 2.11 Metadata

**\metadatasection**      The sources of the data are collected in special sections called “Metadata section”. Each section is introduced by the command **\metadatasection{<title>}**, for example,

```
\metadatasection{Indicators}
```

**metadata**              The sources themselves are collected in the **metadata** environments. Each environment has one obligatory argument—the name of the source. It may include the following commands:

**\key**      **\key{<key>}** sets the corresponding key which is used for labeling the metadata

**\source**      **\source{<source>}** sets the source of the data.

**\owner**      **\owner{<owner>}** sets the owner of the data.

Note that there is no “description” command because any text which is not an argument of the commands above is considered to belong to the description of the data.

Example of the usage of these commands:

```
\metadatasection{Indicators}
\begin{metadata}{Agricultural population}
  \key{agripop}%
  Agricultural population is defined as all persons depending for
  their livelihood on agriculture, hunting, fishing and forestry.
  It comprises all persons economically active in agriculture as
  well as their non-working dependents. It is not necessary that
  this referred population exclusively come from rural population.
  \source{FILL ME}
  \owner{FILL ME}
\end{metadata}
```

`\refMetadata`      The metadata is referenced by the command `\refMetadata{<key>}`, for example  
`\refMetadata{agripop}`

This command will not be typeset, but makes creates a backreference to the corresponding chart from the indicator section.

Note that the package automatically provides backreferencing: all charts, maps and tables where the metadata is referenced, are mentioned in the corresponding metadata section.

## 2.12 Further Reading

`freading`      The special environment `freading` is used for the “further reading” sections of the book. It starts the text from the new page and changes some defaults.

## 2.13 Subscripts in Text

`\textsubscript`      The standard  $\text{\LaTeX}$  defines `\textsuperscript`. The class adds a similar `\textsubscript` command.

## 3 Implementation

### 3.1 Options

`\faoyearbook@size@warning` The font-changing options are not used in our setup, so we just produce a warning:

```
1 \long\def\faoyearbook@size@warning#1{%
2   \ClassWarning{faoyearbook}{Size-changing option #1 will not be
3     honored}}%
4 \DeclareOption{8pt}{\faoyearbook@size@warning{\CurrentOption}}%
5 \DeclareOption{9pt}{\faoyearbook@size@warning{\CurrentOption}}%
6 \DeclareOption{10pt}{\faoyearbook@size@warning{\CurrentOption}}%
7 \DeclareOption{11pt}{\faoyearbook@size@warning{\CurrentOption}}%
8 \DeclareOption{12pt}{\faoyearbook@size@warning{\CurrentOption}}%
```

`\ifprint` We have a flag which shows whether we are in Web or print mode

```
9 \newif\ifprint
10 \printfalse
11 \DeclareOption{web}{\printfalse}
12 \DeclareOption{print}{\printtrue}
13 \PassOptionsToPackage{papersize={230mm,317mm},layout=a4paper,
14   layoutoffset=1cm,layoutvoffset=1cm,twoside}{geometry}}
```

`\ifDraft` If we are in ‘Draft’ or ‘draft mode’, we print a word ‘draft’ across the page:

```
15 \newif\ifDraft
16 \Draftfalse
17 \DeclareOption{Draft}{\Drafttrue}
18 \DeclareOption{draft}{\Drafttrue}
```

`\if@issuemode` Whether we need issuu-style links

```
19 \newif\if@issuemode
20 \@issuemodefalse
21 \DeclareOption{issuu}{\@issuodemtrue}
```

All other options are just sent to the main class:

```
22 \DeclareOption*{\PassOptionsToClass{\CurrentOption}{report}}
23 \ProcessOptions\relax
```

### 3.2 Loading Class and Packages

We start with the base class and some packages

```
24 \LoadClass[10pt,twoside,twocolumn]{report}
25 \RequirePackage{graphicx,xkeyval}
26 \RequirePackage[table,cmyk]{xcolor}
27 \RequirePackage{tikz,geometry,dcolumn}
28 \usetikzlibrary{calc}
29 \RequirePackage{fancyhdr}
30 \RequirePackage[landscape,longtable,siunitx,booktabs]
31 \RequirePackage{multicol,atbegshi,picture,hhline,afterpage}
32 \RequirePackage[T1]{fontenc}
```

```

33 \RequirePackage[utf8x]{inputenc}
34 \RequirePackage{pdfpages}
35 \RequirePackage[authoryear]{natbib}
36 \RequirePackage[breaklinks]{hyperref}
37 \RequirePackage{bookmark}
38 \RequirePackage{adjmulticol,lettrine}
39 \if@issuemode
40 \RequirePackage{issuulinks}
41 \fi

```

Options for the hyperref package are set as follows:

```

42 \ifprint
43 \hypersetup{breaklinks,colorlinks=false,pdfborder=0 0 0,
44   pdfauthor={FAO},
45   pdfsubject={Statistical Yearbook of the Food And Agricultural Organization for the United Nations},
46   pdftitle={Statistical Yearbook of the Food And Agricultural Organization for the United Nations},
47   pdfkeywords={FAO, Food Security, Undernourishment, Sustainable agriculture},
48   pdfpagelayout=TwoColumnLeft,
49   pdfnewwindow=true
50 }
51 \else
52 \hypersetup{breaklinks,colorlinks=false,pdfborder=0 0 0,
53   pdfauthor={FAO},
54   pdfsubject={Statistical Yearbook of the Food And Agricultural Organization for the United Nations},
55   pdftitle={Statistical Yearbook of the Food And Agricultural Organization for the United Nations},
56   pdfkeywords={FAO, Food Security, Undernourishment, Sustainable agriculture},
57   pdfpagelayout=TwoColumnRight,
58   pdfnewwindow=true
59 }
60 \fi

```

### 3.3 Color

We need to tell the printer that we are using CMYK color model. The following is taken from the pdfx package (the package itself is not too easy to make work).

```

61 \def\@pctchar{\expandafter\@gobble\string\%}
62 \def\@bchar{\expandafter\@gobble\string\}
63 \immediate\pdfobj stream attr{/N 4} file{FOGRA39L.icc}
64 \edef\OBJ@CVR{\the\pdfastobj}
65 \pdfcatalog{/OutputIntents [ <<
66   /Type/OutputIntent
67   /S/GTS_PDFX
68   /OutputCondition (FOGRA39)
69   /OutputConditionIdentifier (FOGRA39 \@bchar(ISO Coated v2
70     300\@pctchar\space \@bchar(ECI\@bchar)\@bchar))
71   /DestOutputProfile \OBJ@CVR\space 0 R
72   /RegistryName(http://www.color.org)
73 >> ]}

```

`\LettrineFontHook` We want the drop caps to have @bgcolor  
74 `\renewcommand\LettrineFontHook{\color{@bgcolor}}`

`\DefaultFindent` The distance between the dropped capital and the text  
75 `\setlength\DefaultFindent{2pt}`

### 3.4 Key-Value Interface

`\faoset` We define the family `fao` for our keys:  
76 `\def\faoset#1{\setkeys{fao}{#1}}`

One of the important keys is `year`  
77 `\define@key{fao}{year}{\gdef\fao@year{#1}}`  
78 `\faoset{year=20XX}`

### 3.5 Fonts

We use `arev` for mathematics:  
79 `\RequirePackage{arevmath}`

For body text we use PT Sans:  
80 `\def\PTSans@scale{0.95}`  
81 `\def\PTSansNarrow@scale{0.95}`  
82 `\def\PTSansCaption@scale{0.95}`  
83 `\renewcommand{\sfdefault}{PTSans-TLF}`  
84 `\renewcommand{\familydefault}{\sfdefault}`  
85 `\renewcommand{\bfdefault}{b}`

`\narrowfamily` We declare a new family, `\narrowfamily`:  
86 `\DeclareRobustCommand\narrowfamily{\fontfamily{PTSansNarrow-TLF}\selectfont}`

`\textnarrow` And the matching `\textnarrow` command:  
87 `\DeclareTextFontCommand{\textnarrow}{\narrowfamily}`

`\captionfamily` Same with `\captionfamily`:  
88 `\DeclareRobustCommand\captionfamily{\fontfamily{PTSansCaption-TLF}\selectfont}`

`\textcaption` And the matching `\textcaption` command:  
89 `\DeclareTextFontCommand{\textcaption}{\captionfamily}`

`\normalsize` The basic size is 9.6pt:  
90 `\renewcommand\normalsize{%`  
91 `\@setfontsize\normalsize{9.6pt}{\@xipt}%`  
92 `\abovedisplayskip 10\p@ \@plus2\p@ \@minus5\p@`  
93 `\abovedisplayshortskip \z@ \@plus3\p@`  
94 `\belowdisplayshortskip 6\p@ \@plus3\p@ \@minus3\p@`  
95 `\belowdisplayskip \abovedisplayskip`  
96 `\let\@listi\@listI}`  
97 `\normalsize`

`\small` This is the small size:

```
98 \renewcommand\small{%
99   \@setfontsize\small\@ixpt{10}%
100  \abovedisplayskip 8.5\p@ \@plus3\p@ \@minus4\p@
101  \abovedisplayshortskip \z@ \@plus2\p@
102  \belowdisplayshortskip 4\p@ \@plus2\p@ \@minus2\p@
103  \def\@listi{\leftmargin\leftmargini
104             \topsep 4\p@ \@plus2\p@ \@minus2\p@
105             \parsep 2\p@ \@plus\p@ \@minus\p@
106             \itemsep \parsep}%
107  \belowdisplayskip \abovedisplayskip}
```

We use `rm` style of URL:

```
108 \urlstyle{sf}
```

### 3.6 Margins and Paragraphing

We use `a4paper`.

```
109 \geometry{layout=a4paper,
110   left=2cm,right=2cm,bottom=2.8cm,top=1.5cm,
111   columnsep=30pt, twoside}%
112 \savegeometry{standard}
```

`\parindent` We use not indented paragraphs with paragraph borders given by skips

```
\parskip 113 \setlength\parindent\z@
114 \setlength\parskip{6\p@ plus 6\p@ minus 4\p@}
```

`\footskip` We need generous foot

```
115 \setlength\footskip{27\p@}
```

`\headheight` We need generous headers

```
116 \setlength\headheight{35\p@}
```

### 3.7 Cropmarks

There are several packages that provide crop marks. Unfortunately they do not work for us because they put crop marks at the background. Since we have colored pages, we want crop marks to be on the foreground.

In this section we re-implement cropmarks of the `geometry` package, putting the marks on the foreground.

We postpone the code to the beginning of the document to get the proper value of the switch

```
117 \AtBeginDocument{\ifprint
118   \AtBeginShipout{%
119     \AtBeginShipoutUpperLeftForeground{%
120       \color{black}%
121       \@tempdima=\Gm@layouthoffset
```

```

122 \tempdimb=\Gm@layoutvoffset
123 \put(\tempdima,-\tempdimb+6\p@){\line(0,1){50}}%
124 \put(\tempdima-6\p@,-\tempdimb){\line(-1,0){50}}%
125 \advance\tempdima by \Gm@layoutwidth
126 \put(\tempdima,-\tempdimb+6\p@){\line(0,1){50}}%
127 \put(\tempdima+6\p@,-\tempdimb){\line(1,0){50}}%
128 \advance\tempdimb by \Gm@layoutheight
129 \put(\tempdima,-\tempdimb-6\p@){\line(0,-1){50}}%
130 \put(\tempdima+6\p@,-\tempdimb){\line(1,0){50}}%
131 \advance\tempdima by -\Gm@layoutwidth
132 \put(\tempdima-6\p@,-\tempdimb){\line(-1,0){50}}%
133 \put(\tempdima,-\tempdimb-6\p@){\line(0,-1){50}}%
134 }}\fi}

```

In draft mode we put the word ‘DRAFT’ across the page:

```

135 \AtBeginDocument{\ifDraft
136 \AtBeginShipout{%
137 \AtBeginShipoutUpperLeft{%
138 \color{black!25}%
139 \tempdima=\Gm@layouthoffset
140 \tempdimb=\Gm@layoutvoffset
141 \advance\tempdima by 0.2\Gm@layoutwidth
142 \advance\tempdimb by 0.7\Gm@layoutheight
143 \put(\tempdima,-\tempdimb){%
144 \rotatebox{45}{%
145 \fontsize{6cm}{6cm}\selectfont
146 DRAFT}}}\fi}

```

### 3.8 Setting Colors and Icons

`\fao@color@string` This is the command that remembers the present color for TOC

```
147 \def\fao@color@string{0,0,0}
```

`@bgcolor@next` We store the next background color in `@bgcolor@next`. We store the next heading background in `@tableheadcolor@next`.

`\setbgcolor` The command `\setbgcolor` selects the next background color:

```

148 \def\setbgcolor#1{\colorlet{@bgcolor@next}[cmyk]{#1}%
149 \@for\curr@ext:=\@toc@ext@list\do{%
150 \addtocontents{\curr@ext}{\string\colorlet{@bgcolor}[cmyk]{#1}}%
151 \addtocontents{toc}{\string\colorlet{@bgcolor}[cmyk]{#1}}%
152 \gdef\fao@color@string{#1}}
153 \colorlet{@bgcolor@next}[cmyk]{white}

```

The key-value interface for the same command:

```
154 \define@key{fao}{bgcolor}{\setbgcolor{#1}}
```

And for separate setting of `@tableheadcolor`

```
155 \define@key{fao}{tableheadcolor}{\colorlet{@tableheadcolor}[cmyk]{#1}}
```

`@bgcolor` The current color is in the macro `@bgcolor`.

`@tableheadcolor` This command makes the actual color change:

```

\selectcolor 156 \def\selectcolor{\colorlet{@bgcolor}{@bgcolor@next}}%
              157 \colorlet{@tableheadcolor}{@bgcolor}}
              158 \selectcolor

```

`@tablebg` The color for table pages

```

159 \define@key{fao}{tablebg}{\colorlet{@tablebg}[cmyk]{#1}}

```

`\seticon` Setting the next icon for the part

```

160 \def\seticon#1{\gdef\next@icon{#1}}
161 \define@key{fao}{icon}{\seticon{#1}}

```

`\selecticon` The actual icon change

`\currenticon`

```

162 \def\selecticon{\gdef\currenticon{\next@icon}}
163 \def\next@icon{}

```

`\newicon` Define an icon #2 for the part #1

```

164 \def\newicon#1#2{\expandafter\gdef\csname @icon@#1\endcsname{#2}}

```

`\colored@icon` The icon for us is just a mask. This will create a colored icon using background `@bgcolor`

```

165 \newcommand\colored@icon[2][\bgroup\fbboxsep=-1pt%
166 \fcolorbox{white}{@bgcolor}{\includegraphics[#1]{#2}}\egroup}

```

`\colored@icon@fg` The icon for us is just a mask. This will create a colored icon using background `@bgcolor!#3`

```

167 \newcommand\colored@icon@fg[3][\bgroup\fbboxsep=-1p%
168 \fcolorbox{white}{@bgcolor!#3}{\includegraphics[#1]{#2}}\egroup}

```

### 3.9 Page Styles

`\evenfootmark` The mark on even pages

```

169 \def\evenfootmark#1{\gdef\@evenfootmark{#1}}
170 \evenfootmark{\textbf{FAO} Statistical Yearbook \textbf{\fao@year}}

```

`\oddfootmark` The mark on odd pages

```

171 \def\oddfootmark#1{\gdef\@oddfootmark{#1}}
172 \oddfootmark{\rightmark}

```

`standardpagestyle` This is our main page style

```

173 \fancypagestyle{standardpagestyle}{%
174 \fancyhf{}%
175 \fancyhfoffset[LR]{2.22cm}%
176 \renewcommand\headrulewidth{\z@}%
177 \fancyhead[LE]{\hspace*{25p@}\color{@bgcolor}\captionfamily
178 \Huge\strut\ifnum\thepart>0\relax

```



```

179 \thepart\fi\normalsize\dotfill}%
180 \fancyhead[L0]{\hspace*{25\p@}\color{@bgcolor}\normalsize\dotfill\captionfamily
181 \Huge\leftmark\expandafter\ifx\csname @icon@\thepart\endcsname\relax\else\space
182 \raisebox{-0.25\totalheight}{%
183 \colored@icon[width=1.1cm]{\csname
184 @icon@\thepart\endcsname}}\fi
185 \hspace*{25\p@}}%
186 \fancyfoot[LE]{
187 \bgroup
188 \setlength\fbboxsep{10\p@}%
189 \color{@bgcolor}%
190 \raisebox{-\height}{\fcolorbox{@bgcolor}{@bgcolor}{\color{white}\thepage}}%
191 \normalsize\dotfill
192 \raisebox{-\height}{\@evenfootmark\hspace*{25\p@}}%
193 \egroup}%
194 \fancyfoot[L0]{
195 \bgroup
196 \setlength\fbboxsep{10\p@}%
197 \color{@bgcolor}%
198 \raisebox{-\height}{\hspace*{25\p@}\@oddfootmark}%
199 \normalsize\dotfill
200 \raisebox{-\height}{\fcolorbox{@bgcolor}{@bgcolor}{\color{white}\thepage}}%
201 \egroup}%
202 }
203 \pagestyle{standardpagestyle}

```

`\@partpagerpicture` A picture in the part page. `\@part` defines it to the combination of the current icons

```
204 \def\@partpagepicture{}
```

`partpagestyle` The page style for the parts introduction

```

205 \fancypagestyle{partpagestyle}{%
206 \fancyhf{}%
207 \fancyhead[L]{%
208 \begin{picture}(0,0)
209 \@partpagepicture
210 \put(-14,50){%
211 \raisebox{-\height}{\begin{tikzpicture}
212 \fill[color=@bgcolor,opacity=.1]
213 (0,0) rectangle ($(\textwidth,\textheight)+(5cm,5cm)$);
214 \end{tikzpicture}}}}
215 \end{picture}}
216 \fancyhfoffset[LR]{2.22cm}%
217 \renewcommand\headrulewidth{\z@}%
218 \fancyfoot[LE]{
219 \bgroup
220 \setlength\fbboxsep{10\p@}%
221 \color{@bgcolor}%
222 \raisebox{-\height}{\fcolorbox{@bgcolor}{@bgcolor}{\color{white}\thepage}}%
223 \normalsize\dotfill

```

```

224 \raisebox{-\height}{\@evenfootmark\hspace{20\p@}}%
225 \egroup}%
226 \fancyfoot[L0]{
227 \bgroup
228 \setlength\fbboxsep{10\p@}%
229 \color{@bgcolor}%
230 \raisebox{-\height}{\hspace*{25\p@}\@oddfootmark}%
231 \normalsize\dotfill
232 \raisebox{-\height}{\fcolorbox{@bgcolor}{@bgcolor}{\color{white}\thepage}}%
233 \egroup}%
234 }

```

`\fao@partblobtop` Some pages have “part blobs”: colored blobs on the specific positions of the page.  
`\fao@partblobbottom` These macros set the top and the bottom of the blob corresponding to the part set in the second parameter:

```

235 \def\fao@partblobtop#1#2{\expandafter\gdef\csname fao@blobstart#1\endcsname{#2}}
236 \def\fao@partblobbottom#1#2{\expandafter\gdef\csname fao@blobend#1\endcsname{#2}}

```

### 3.10 Nonfloats

In Faoyearbook we used float package. Since we changed too much in the internals, here we just rewrite the code from scratch.

`\@toc@ext@list` Added macro Comma-separated list of extensions for toc-like files:  
237 \gdef\@toc@ext@list{toc}

`\nf@vert@sep` Vertical separation between the floats  
238 \newlength\nf@vert@sep  
239 \setlength\nf@vert@sep{30pt}

`\nf@width` The width of the nonfloat  
240 \newlength\nf@width

`\nf@height` The height of the nonfloat  
241 \newlength\nf@height

`\nf@captionheight` The height reserved for the caption  
242 \newlength\nf@captionheight  
243 \setlength\nf@captionheight{32\p@}

`\nf@sourceheight` The height reserved for the source lines  
244 \newlength\nf@sourceheight  
245 \setlength\nf@sourceheight{48\p@}

`\nf@margin` Margin for floats  
246 \newlength\nf@margin  
247 \setlength\nf@margin{12\p@}

`\nf@trianglebase` The design requires a triangle under the caption. Here it is

```

248 \newlength\nf@trianglebase
249 \setlength\nf@trianglebase{12\p@}

```

`\chartwidth` The resulting width of a chart

```

250 \newlength\chartwidth

```

`\chartheight` The resulting width of a chart

```

251 \newlength\chartheight

```

`\nf@topskip` Top separation for a nonfloat @topskip

`\nf@bottomskip` Bottom separation for a nonfloat @bottomskip

`\nonfloat@type` The counter to keep the next type to assign

```

252 \newcount\nonfloat@type
253 \nonfloat@type=4\relax

```

`\nf@contentsbox` The box to keep the contents of the float

```

254 \newbox\nf@contentsbox

```

`\nf@mainbox` The box for the float

```

255 \newbox\nf@mainbox

```

`\newnon@float` The macro `\newnon@float` has the following arguments: TYPE, EXT, NAME for example

```

\newnon@float{map}{lom}{Map}

```

It defines a nonfloat with these parameters.

```

256 \def\newnon@float#1#2#3{%

```

First, we need to define `\ftype@TYPE`: the type of the float. Note that tables are taken, so we need to make a special care of nonfloats that correspond to floats.

```

257 \expandafter\ifx\csname ftype@#1\endcsname\relax
258 \expandafter\edef\csname ftype@#1\endcsname{\the\nonfloat@type}%
259 \multiply\nonfloat@type by 2\relax
260 \fi

```

Now we define the extension for the floats

```

261 \expandafter\def\csname ext@#1\endcsname{#2}%
262 \xdef\@toc@ext@list{\@toc@ext@list,#2}%

```

The macro `\fnum@TYPE` formats the line like “Figure 1”. We need to check whether the counter is defined

```

263 \expandafter\ifx\csname the#1\endcsname\relax
264 \newcounter{#1}\fi
265 \expandafter\def\csname fnum@#1\endcsname{#3~\csname
266 the#1\endcsname}%

```

Now we want to define the environment TYPE. Since it might be already defined, we first delete this definition, otherwise `\newenvironment` might throw an error

```
267 \expandafter\let\csname #1\endcsname\relax
268 \expandafter\let\csname end#1\endcsname\relax
```

And the actual definition

```
269 \newenvironment{#1}{\non@float{#1}}{\endnon@float{}}
```

`\@getfirstletter` An aux macro to get a first letter of a word. Used in constructs

```
\edef\U{\@getfirstletter{AAAAA\@endword}}}
```

```
270 \def\@getfirstletter#1{\@getfirstletter#1}
271 \def\@getfirstletter#1{#1\@gobbleword}
272 \def\@gobbleword#1\@endword{}
```

`\non@float` Now we are ready to define the `\non@float` macro. It has three parameters: TYPE, SIZE and PLACEMENT. `\nf@source` is the source of the float.

```
273 \def\non@float#1#2#3{
274   \def\@capttype{#1}%
275   \def\nf@size{#2}%
276   \def\nf@placement{#3}%
```

The macro `\nf@vert@pos` is either u or l

```
277 \lowercase{\xdef\nf@vert@pos{\@getfirstletter#3\@endword}}
278 \global\let\nf@source\@empty
```

Define the source command inside float

```
279 \def\source##1{\gdef\nf@source{##1}}
```

Define the caption producing command:

```
280 \long\def\@makecaption##1##2{\long\gdef\nf@caption{%
281   {\bfseries\large\color{white}
282     \MakeUppercase{##1}: ##2}}}%
283 \gdef\nf@caption{}
```

We calculate the size of the float and skips

```
284 \nf@width=\columnwidth
285 \nf@height=\dimexpr(\textheight/2-\nf@vert@sep)%
286 \if\nf@vert@pos u\relax
287   \nf@topskip=\z@
288   \nf@bottomskip=\nf@vert@sep
289 \else
290   \nf@topskip=\nf@vert@sep%
291   \nf@bottomskip=\z@
292 \fi
293 \def\tempW{W}%
294 \def\tempT{T}%
295 \def\tempB{B}%
296 \ifx\nf@size\tempW
297   \nf@width=\textwidth
```

```

298 \fi
299 \ifx\nf@size\tempT
300   \nf@height=\textheight
301   \nf@topskip=\z@
302   \nf@bottomskip=\z@
303 \fi
304 \ifx\nf@size\tempB
305   \nf@width=\textwidth
306   \nf@height=\textheight
307   \nf@topskip=\z@
308   \nf@bottomskip=\z@
309 \fi
310 \chartheight=
311   \dimexpr(\nf@height-\nf@captionheight-\nf@sourceheight
312     -2\nf@margin-\nf@trianglebase)%
313 \chartwidth=\dimexpr(\nf@width-2\nf@margin-0.5\nf@trianglebase)%
314 \nf@height=\dimexpr(\nf@height+\nf@topskip+\nf@bottomskip)%

```

Now we construct the main box.

```

315 \global\setbox\nf@contentsbox
316   \color@vbox
317   \normalcolor
318   \vbox to \chartheight
319   \bgroup
320   \hsize\chartwidth
321   \@parboxrestore
322   \@floatboxreset
323 }

```

\endnon@float The actual typesetting

```

324 \def\endnon@float{\@endfloatbox\par
325   \hsize=\nf@width
326   \setbox\nf@mainbox=\vbox to \nf@height\bgroup
327     \hsize=\chartwidth
328     \vskip\nf@topskip
329     \noindent
330     \begin{picture}(0,0)%
331       \put(0,0){\color{@bgcolor}%
332         \begin{tikzpicture}[baseline=(current bounding box.north)]
333           \fill (0,0) -- (\nf@trianglebase,0) --
334             (0.5\nf@trianglebase,-\nf@trianglebase) -- cycle;
335         \end{tikzpicture}}
336     \end{picture}%
337   \def\@tempa{chart}%
338   \ifx\@tempa\@capttype
339     \begin{picture}(0,0)%
340       \put(0,0){\color{@bgcolor}%
341         \begin{tikzpicture}[baseline=(current bounding box.north)]
342           \draw(0,0) -- (\nf@width,0);
343           \draw (0.5\nf@trianglebase,-2\nf@trianglebase) --

```

```

344      (0.5\nf@trianglebase,-\charheight-2\nf@trianglebase
345      -\nf@margin) --
346      (\nf@width-\pgflinewidth, -\charheight-2\nf@trianglebase
347      -\nf@margin) -- (\nf@width-\pgflinewidth, 0);
348    \end{tikzpicture}}
349  \end{picture}%
350  \fi
351  {\color{bgcolor}\color@block{\nf@width}{\nf@captionheight}{.1\p@}}%
352  \hskip\dimexpr(\nf@margin+0.5\nf@trianglebase)%
353  \vbox to \nf@captionheight\bgroup
354  \nf@caption\vfill\normalcolor
355  \egroup\par\nointerlineskip\vskip\nf@trianglebase
356  \vskip\nf@margin
357  \noindent\hskip\dimexpr(\nf@margin+0.5\nf@trianglebase)%
358  \box\nf@contentsbox\par\nointerlineskip
359  \vskip\nf@margin
360  \hskip\dimexpr(\nf@margin+0.5\nf@trianglebase)%
361  \vbox to \nf@sourceheight\bgroup
362  \ifx\nf@source\empty\else
363  \noindent\color{bgcolor}%
364    \rule{.2em}{.2em}~\rule{.2em}{.2em}~%
365    \rule{.2em}{.2em}~\rule{.2em}{.2em}~%
366    \rule{.2em}{.2em}\par\normalcolor
367  \noindent Source: \nf@source\par\vfill\fi\egroup
368  \vfill\egroup
369  \edef\nf@currbox{\expandafter\csname nfbox@\nf@size
370    @\nf@placement\endcsname}%
371  \global\setbox\nf@currbox=
372  \vbox{\box\nf@currbox\nointerlineskip\penalty0\box\nf@mainbox}}

```

\map A standard nonfloat:

```
373 \newnon@float{map}{lom}{Map}
```

\listofmapsname The name for the list of maps

```
374 \def\listofmapsname{List of Maps}
```

\table Another one

```
375 \newnon@float{table}{lot}{Table}
```

\chart And another one

```
376 \newnon@float{chart}{loc}{Chart}
```

\listofchartsname The name for the list of charts

```
377 \def\listofchartsname{List of charts}
```

### 3.11 Output Routine

This is hairy because output routines are hairy...

We need several insert boxes. Naming convention: the letter for the box size and two letter code for the location. We use `\newbox` instead of `\newinsert` since we do not use associated `\count`, `\dimen` and `\skip` registers.

```

378 \newbox\nfbox@S@ul
379 \newbox\nfbox@S@ur
380 \newbox\nfbox@S@ll
381 \newbox\nfbox@S@lr
382 \newbox\nfbox@S@UL
383 \newbox\nfbox@S@UR
384 \newbox\nfbox@S@LL
385 \newbox\nfbox@S@LR
386 \newbox\nfbox@T@ul
387 \newbox\nfbox@T@ur
388 \newbox\nfbox@T@UL
389 \newbox\nfbox@T@UR
390 \newbox\nfbox@W@ul
391 \newbox\nfbox@W@ll
392 \newbox\nfbox@W@UL
393 \newbox\nfbox@W@LL
394 \newbox\nfbox@B@ul
395 \newbox\nfbox@B@UL

```

`\@tempboxb` Standard L<sup>A</sup>T<sub>E</sub>X has `\@tempboxa`. We need more...

```

396 \ifx\@tempboxb\@undefined
397   \newbox\@tempboxb
398 \fi

```

`\standard@output` The standard L<sup>A</sup>T<sub>E</sub>X output routine is saved as `\standard@output`. We use it for one column pages—maybe one even wants a standard float here?

```

399 \edef\standard@output{\the\output}

```

`\output` Right now we use standard output on one column pages and the new one with two columns

```

400 \output{\if@twocolumn\the\nf@output\else\standard@output\fi}

```

`\nf@output` Here we define our own output routine.

```

401 \newtoks\nf@output
402 \nf@output {%

```

We define the current boxes `\curr@nfbox....`. Also, `uc` or `lc` mean Upper or Lower Current column

```

403   \ifodd\c@page
404     \global\let\curr@nfbox@S@ul\nfbox@S@UL
405     \global\let\curr@nfbox@S@ur\nfbox@S@UR
406     \global\let\curr@nfbox@S@ll\nfbox@S@LL
407     \global\let\curr@nfbox@S@lr\nfbox@S@LR
408     \global\let\curr@nfbox@T@ul\nfbox@T@UL
409     \global\let\curr@nfbox@T@ur\nfbox@T@UR
410     \global\let\curr@nfbox@W@ul\nfbox@W@UL

```

```

411 \global\let\curr@nfbbox@W@ll\nfbbox@W@LL
412 \global\let\curr@nfbbox@B@ul\nfbbox@B@UL
413 \else
414 \global\let\curr@nfbbox@S@ul\nfbbox@S@ul
415 \global\let\curr@nfbbox@S@ur\nfbbox@S@ur
416 \global\let\curr@nfbbox@S@ll\nfbbox@S@ll
417 \global\let\curr@nfbbox@S@lr\nfbbox@S@lr
418 \global\let\curr@nfbbox@T@ul\nfbbox@T@ul
419 \global\let\curr@nfbbox@T@ur\nfbbox@T@ur
420 \global\let\curr@nfbbox@W@ul\nfbbox@W@ul
421 \global\let\curr@nfbbox@W@ll\nfbbox@W@ll
422 \global\let\curr@nfbbox@B@ul\nfbbox@B@ul
423 \fi
424 \if@firstcolumn
425 \global\let\curr@nfbbox@S@uc\curr@nfbbox@S@ul
426 \global\let\curr@nfbbox@S@lc\curr@nfbbox@S@ll
427 \global\let\curr@nfbbox@T@uc\curr@nfbbox@T@ul
428 \else
429 \global\let\curr@nfbbox@S@uc\curr@nfbbox@S@ur
430 \global\let\curr@nfbbox@S@lc\curr@nfbbox@S@lr
431 \global\let\curr@nfbbox@T@uc\curr@nfbbox@T@ur
432 \fi
433 \let \par \@@par
434 %
435 % There are several possibilities when we start the output routine for
436 % a single column in a two-column layout.
437 % \begin{enumerate}
438 % \item Wide or big non-floats completely cover the page. In this
439 % case we do not need to create columns, and directly go to the
440 % output.
441 % \item The column is occupied by tall or single nonfloats. We make
442 % a column of nonfloats and send it further.
443 % \item There is room for text on the page, but its height
444 % (\cs{@colroom}) is different from the one known to the page builder
445 % (\cs{vsize}). In this case we change \cs{vsize} and return.
446 % \item The room for text is exactly \cs{vsize}. In this case we form
447 % a column and return.
448 % \end{enumerate}
449 % \begin{macrocode}
450 \global\@colht=\textheight
451 \ifdim\ht\curr@nfbbox@B@ul>0.5\baselineskip
452 \global\advance\@colht by -\textheight
453 \fi
454 \ifdim\ht\curr@nfbbox@W@ul>0.5\baselineskip
455 \global\advance\@colht by -0.5\textheight
456 \fi
457 \ifdim\ht\curr@nfbbox@W@ll>0.5\baselineskip
458 \global\advance\@colht by -0.5\textheight
459 \fi

```



```

460 \ifdim\@colht < \baselineskip
461 \nf@output@widepage
462 \else
463 \nf@makecol
464 \fi
465 }

```

`\nf@output@widepage` The macro `\nf@output@widepage` outputs a page completely filled by wide pictures.

```

466 \def\nf@output@widepage{%
467 \unvbox\@cclv
468 \penalty\outputpenalty
469 \if@firstcolumn\else
470 \ClassError{faosyb}{Wide or big nonfloats defined too late. Move
471 them up}{I encountered Big or Wide floats when I already made the
472 first column. Please move them up}
473 \fi
474 \ifdim\ht\curr@nfbox@B@ul>0.5\baselineskip
475 \global\setbox\@outputbox\vsplit\curr@nfbox@B@ul to \textheight
476 \else
477 \setbox\@tempboxa\vsplit\curr@nfbox@W@ul to 0.5\textheight
478 \setbox\@tempboxb\vsplit\curr@nfbox@W@ll to 0.5\textheight
479 \setbox\@outputbox\vbox\bgroup
480 \box\@tempboxa
481 \nointerlineskip
482 \box\@tempboxb
483 \egroup
484 \fi
485 \global\vsizetextheight
486 \global\@colht\textheight
487 \@outputpage
488 \@firstcolumntrue
489 }

```

`\nf@makecol` This macro tries to make one column of text. If successful, it puts first column into temporary storage, and outputs the page when or if the second column is ready.

When we start `\nf@makecol`, `\@colht` already reflects possible wide nonfloats. This to get `\@colroom`, we need to take into account only the narrow ones

```

490 \def\nf@makecol{%
491 \global\@colroom\@colht
492 \ifdim\ht\curr@nfbox@T@uc>0.5\baselineskip
493 \global\@colroom=0pt
494 \fi
495 \ifdim\ht\curr@nfbox@S@uc>0.5\baselineskip
496 \global\advance\@colroom by -0.5\textheight
497 \fi
498 \ifdim\ht\curr@nfbox@S@lc>0.5\baselineskip
499 \global\advance\@colroom by -0.5\textheight

```

```
500 \fi
```

Now there could be two cases. If `\@colroom` is small, we fill the column with the non-floats only. Otherwise we have a “mixed” column with both text and nonfloats.

```
501 \ifdim\@colroom<0.5\baselineskip
502   \nf@makenfcol
503 \else
504   \nf@makemixedcol
505 \fi}
```

`\nf@makenfcol` This macro outputs a column with only non-floats. If it is called, we already know that the narrow non-floats would fill the column, so we do not do any additional checks.

```
506 \def\nf@makenfcol{%
507   \unvbox\@cclv
508   \penalty\outputpenalty
509   \ifdim\@colht>0.9\textheight % one tall or two squares
510     \ifdim\ht\curr@nfbox@T@uc>0.5\baselineskip
511       \setbox\@outputbox\vbox\bgroup
512       \boxmaxdepth \@maxdepth
513       \vsplit \curr@nfbox@T@uc to \textheight
514       \egroup
515     \else
516       \setbox\@outputbox\vbox\bgroup
517       \boxmaxdepth \@maxdepth
518       \vsplit\curr@nfbox@S@uc to 0.5\textheight
519       \nointerlineskip
520       \vsplit\curr@nfbox@S@lc to 0.5\textheight
521       \egroup
522     \fi
523   \else % one square
524     \ifdim\ht\curr@nfbox@S@uc>0.49\textheight
525       \setbox\@outputbox\vsplit \curr@nfbox@S@uc to 0.5\textheight
526     \else
527       \setbox\@outputbox\vsplit \curr@nfbox@S@lc to 0.5\textheight
528     \fi
529   \fi
530   \nf@opcol
531 }
```

`\nf@makemixedcol` This macros used when we have a mix of text with nonfloats (or possibly just text).

We check whether the page builder has the right idea about the text size; if not, we return from the output routine

```
532 \def\nf@makemixedcol{%
533   \ifdim\@colroom=\vsize
534     \nf@makemixedcol@
535   \else
```

```

536 \global\ysize=\@colroom
537 \unvbox\@cclv
538 \penalty\outputpenalty
539 \fi}

```

\nf@makmixedcol@ And now the real work of \nf@makmixedcol@

```

540 \def\nf@makmixedcol{%
541   \ifvoid\footins
542     \setbox\@outputbox \box \@cclv
543   \else
544     \setbox\@outputbox \vbox {%
545       \boxmaxdepth \@maxdepth
546       \unvbox \@cclv
547       \vskip \skip\footins
548       \color@begingroup
549         \normalcolor
550         \footnoterule
551         \unvbox \footins
552       \color@endgroup
553     }%
554   \fi
555   \ifdim\ht\curr@nfbox@S@uc>0.49\textheight
556     \setbox\@tempboxa\vsplit\curr@nfbox@S@uc to 0.5\textheight
557     \setbox\@outputbox \vbox
558       \bgroup
559         \box\@tempboxa
560         \nointerlineskip
561         \box\@outputbox
562     \egroup
563   \fi
564   \ifdim\ht\curr@nfbox@S@lc>0.49\textheight
565     \setbox\@tempboxa\vsplit\curr@nfbox@S@lc to 0.5\textheight
566     \setbox\@outputbox \vbox
567       \bgroup
568         \box\@outputbox
569         \nointerlineskip
570         \box\@tempboxa
571     \egroup
572   \fi
573   \nf@opcol}

```

\nf@opcol This is like the standard L<sup>A</sup>T<sub>E</sub>X \@outputdblcol, but with the treatment of wide nonfloats.

```

574 \def\nf@opcol{%
575   \if@firstcolumn
576     \global\@firstcolumnfalse
577     \global\setbox\@leftcolumn\box\@outputbox
578   \else
579     \global\@firstcolumntrue
580     \ifdim\ht\curr@nfbox@W@ul>0.5\baselineskip

```

```

581     \setbox\@tempboxa\vsplit \curr@nfbbox@W@ul to 0.5\textheight
582   \else
583     \setbox\@tempboxb\box\@tempboxa
584   \fi
585   \setbox\@outputbox \vbox\bgroup
586     \box\@tempboxa
587     \nointerlineskip
588     \hb@xt@\textwidth {%
589       \hb@xt@\columnwidth {%
590         \box\@leftcolumn \hss}%
591     \hfil
592     {\normalcolor\vrule \@width\columnseprule}%
593     \hfil
594     \hb@xt@\columnwidth {%
595       \box\@outputbox \hss}%
596   }%
597 \egroup
598 \ifdim\ht\curr@nfbbox@W@ll>0.5\baselineskip
599   \setbox\@tempboxa\vsplit \curr@nfbbox@W@ll to 0.5\textheight
600   \setbox\@outputbox\vbox\bgroup
601     \box\@outputbox
602     \nointerlineskip
603     \box\@tempboxa
604   \egroup
605 \fi
606 \@outputpage
607 \global\vsz\textheight
608 \global\@colht\textheight
609 \global\@colroom\textheight
610 \fi}

```

`\standard@clearpage` The usual `\clearpage` flushes the floats. We keep it in `\standard@clearpage`

```

611 \let\standard@clearpage\clearpage

```

`\clearpage` Now we can define `\clearpage` to take care of the mode:

```

612 \def\clearpage{%
613   \if@twocolumn
614     \nf@clearpage
615   \else
616     \standard@clearpage
617 \fi}

```

`\nf@totalheight` The total height of all non-floats

```

618 \def\nf@totalheight{\dimexpr(
619   \ht\nfbbox@S@UL+
620   \ht\nfbbox@S@UR+
621   \ht\nfbbox@S@LL+
622   \ht\nfbbox@S@LR+
623   \ht\nfbbox@T@UL+

```

```

624 \ht\nfbox@T@UR+
625 \ht\nfbox@W@UL+
626 \ht\nfbox@W@LL+
627 \ht\nfbox@B@UL+
628 \ht\nfbox@S@ul+
629 \ht\nfbox@S@ur+
630 \ht\nfbox@S@ll+
631 \ht\nfbox@S@lr+
632 \ht\nfbox@T@ul+
633 \ht\nfbox@T@ur+
634 \ht\nfbox@W@ul+
635 \ht\nfbox@W@ll+
636 \ht\nfbox@B@ul)}

```

`\nf@clearpage` We keep ejecting pages until get rid of nf stuff

```

637 \def\nf@clearpage{%
638 \write\m@ne{}%
639 \if@firstcolumn
640 \ifdim\dimexpr(\pagetotal+\nf@totalheight)>\baselineskip
641 \leavevmode
642 \null\vfill\newpage
643 \null\vfill\newpage
644 \fi
645 \else
646 \leavevmode
647 \null\vfill\newpage
648 \fi
649 \ifdim\nf@totalheight>\baselineskip
650 \nf@clearpage\fi
651 }

```

`\clearspread` This is like `\cleardoublepage`, but with the logic inverted:

```

652 \def\clearspread{\clearpage\ifodd\c@page
653 \hbox{}\newpage\if@twocolumn\hbox{}\newpage\fi\fi\@firstcolumntrue}

```

We need to clear everything at the end

```

654 \AtEndDocument{\if@twocolumn
655 \ifdim\nf@totalheight>\baselineskip
656 \null\vfill\clearpage\fi
657 \fi}

```

### 3.12 Sectioning

`\if@mainmatter` This is used to check whether we are at main matter

```

658 \newif\if@mainmatter

```

`\frontmatter` We want Arabic numbers for front matter:

```

659 \def\frontmatter{\cleardoublepage\setbgcolor{gray}\selectcolor
660 \pagestyle{standardpagestyle}%
661 \onecolumn\@mainmatterfalse}

```

`\mainmatter` We want Arabic numbers for main matter:

```

662 \def\mainmatter{\cleardoublepage\onecolumn
663   \pagestyle{standardpagestyle}%
664   \@mainmattertrue}

```

`\tocdepth` Only sections and up are allowed in TOC:

```

665 \setcounter{tocdepth}{1}

```

`\secnumdepth` Only the parts are numbered in our setup:

```

666 \setcounter{secnumdepth}{-1}

```

`\thepart` And the parts are numbered using Arabic numbers:

```

667 \renewcommand \thepart {\@arabic\c@part}

```

`\c@fao@partnum` To draw the blobs in part color in the proper position, we need to associate them with parts. However, some parts are numbered, some are not. The macro `\fao@partnum` keeps the current part number counted continuously from the beginning to end.

```

668 \newcounter{fao@partnum}
669 \setcounter{fao@partnum}{0}

```

`\fao@currentpartnum` The current value of `\fao@partnum` used in TOC:

```

670 \def\fao@currentpartnum{0}

```

`\part` The largest partition in the book

```

671 \renewcommand\part{%
672   \secdef\@part\@spart}

```

`\EndPartIntro` This command switches off the special formatting of part pages:

```

673 \def\EndPartIntro{\clearspread\twocolumn\normalcolor
674   \pagestyle{standardpagestyle}}

```

`iconfill` Fill a line with the icons of increasing size. The parameters are the initial size, length of the strip and the intensity of the background

```

675 \def\@maxpart{1}
676 \def\iconfill#1#2#3{%
677   \expandafter\ifx\csname @icon@1\endcsname\relax\strut\else
678     \@tempcnta=1
679     \setbox\@tempboxa=\hbox{}}%
680   \loop
681     \@tempdima=#1
682     \setbox\@tempboxa=\hbox{\unhbox\@tempboxa
683       \colored@icon@fg[width=\@tempdima]{\csname
684         @icon@1\endcsname}}{#3}}%
685     \advance\@tempcnta by 1\relax
686     \ifnum\@tempcnta>\@maxpart\relax\@tempcnta=1\fi
687     \ifdim\wd\@tempboxa>#2\else\repeat
688     \unhbox\@tempboxa
689   \fi}

```

`\currenticonfill` Several iterations of the current icon with increasing sizes. The parameters are the initial size, length and the intensity of the background.

```

690 \def\currenticonfill#1#2#3{%
691   \expandafter\ifx\csname @icon@\thepart\endcsname\relax\strut\else
692   \setbox\@tempboxa=\hbox{%
693     \@tempdima=#1
694     \loop
695       \@tempdima=1.44\@tempdima
696       \setbox\@tempboxa=\hbox{\unhbox\@tempboxa
697         \colored@icon@fg[width=\@tempdima]{\csname
698           @icon@\thepart\endcsname}{#3}}%
699       \ifdim\wd\@tempboxa>#2\else\repeat
700       \unhbox\@tempboxa
701     \fi}

```

`\@part` This is the actual part making macro.

```

702 \def\@part[#1]#2{%
703   \clearspread
704   \onecolumn
705   \clearspread
706   \selectcolor
707   \selecticon
708   \color{@bgcolor}%
709   \rowcolors{2}{@bgcolor!10}{}%
710   \pagestyle{partpagestyle}%
711   \refstepcounter{part}%
712   \addcontentsline{toc}{part}{\thepart\hspace{1em}#1}%
713   \protected@write\@auxout{%
714     {\string\newicon{\thepart}{\currenticon}
715       \string\gdef\string\@maxpart{\thepart}}%
716   \def\@partpagepicture{%
717     \put(-20,-500){\rotatebox{30}{\parbox{\textwidth}{%
718       \iconfill{1cm}{0.5\textwidth}{20}\currenticonfill{1cm}{0.4\textwidth}{20}\\
719       \iconfill{1cm}{1.15\textwidth}{100}\\
720       \iconfill{1cm}{1.14\textwidth}{20}}}}}%
721   \markboth{#1}{#1}%
722   \null
723   \newpage
724   \def\@partpagepicture{\put(150,-200){\rotatebox{30}{\iconfill{1cm}{12cm}{20}}}%
725   \gdef\@partpagepicture{}}
726   {\interlinepenalty \@M
727     \vspace*{80\p@}
728     \captionfamily
729     \fontsize{240\p@}{240\p@}\selectfont\raggedright\thepart~%
730     \parbox[b]{0.8\textwidth}{\fontsize{64\p@}{72\p@}\selectfont
731       \raggedright\null#2\par}\par\vskip80\p@
732   }\par\normalcolor}

```

`\@currentsymbol` the symbol for the next unnumbered part

```

733 \define@choicekey*+{fao}{symbol}[\val\nr]%
734 {\righttriangle,square,rightsemicircle}{%
735   \ifcase\nr\relax
736     \gdef\@currentsymbol{(0,0) -- (1ex,0) -- (1ex,1ex) -- cycle}%
737   \or
738     \gdef\@currentsymbol{(0,0) -- (1ex,0) -- (1ex,1ex) -- (0,1ex) --
739     cycle}%
740   \or
741     \gdef\@currentsymbol{(0,0) arc[start angle=90, end angle=-90, x
742     radius = 0.5ex, y radius = 0.5ex] -- cycle}%
743   \fi
744 }{\ClassError{faosyb}{Bad symbol value \val}}
745 \faoset{symbol=square}

\@spart nmmumbered parts are only in the foreword
746 \def\@spart#1{%
747   \clearpage
748   \onecolumn
749   \selectcolor
750   \selecticon
751   \pagestyle{empty}%
752   \rowcolors{2}{\bgcolor!10}{}%
753   \phantomsection
754   \addcontentsline{toc}{spart}{\hspace{1em}#1}%
755   \makebox[0pt]{%
756     \raisebox{-\totalheight}%
757     [0pt][0pt]{\rotatebox{90}{\Huge
758       \captionfamily
759       \tikz\fill[color=\bgcolor]\@currentsymbol;\space
760       \color{gray}#1\strut}}%
761     \hspace*{50pt}}\par\vspace*{-\baselineskip}%
762   \vspace*{-\parskip}}

\sectionmark We do not want to have uppercase sections in the footers
763 \def\sectionmark#1{\markright{#1}}

\section New sections start on a recto page in one column mode and on a verso page in
two column mode
764 \renewcommand\section{\par\clearspread
765   \@startsection {section}{1}{\z@}%
766   {-1sp}%
767   {2.3ex \@plus.2ex}%
768   {\normalfont\Large\bfseries\raggedright
769   \color{\bgcolor}}}

\subsection The subsection macro
770 \renewcommand\subsection{\@startsection{subsection}{2}{\z@}%
771   {-1sp}%
772   {1.5ex \@plus .2ex}%

```



```

773                                     {\normalfont\large\bfseries\raggedright
774                                     \color{@bgcolor}}

```

### 3.13 Tables

`\tablepages` Long tables at the end of a part

```

775 \newenvironment{tablepages}{\onecolumn
776   \bgroup\narrowfamily\multicolsep=\z@
777   \vspace*{-2cm}%
778   \def\emph{\textsl}%
779   \begin{adjmulticols}{1}{-1.3cm}{-1.3cm}\centering\normalcolor}%
780   {\end{adjmulticols}\egroup}

```

`\tablemph` Some styles define `\tablemph` commands. Here we supply a stub

```

781 \AtBeginDocument{\providecommand{\tablemph}[1]{\emph{#1}}}

```

We define new column types for table headers:

```

782 \newcolumnntype{d}[1]{D{.}{.}{#1}}
783 \newcolumnntype{H}{>{\columncolor{@tableheadcolor}[1.01\tabcolsep][1.01\tabcolsep]}c}

```

P column type is much more complex. Basically we want a centered entry with a parbox of the given width inside.:

```

784 \newcolumnntype{P}[1]{>{\columncolor{@tableheadcolor}[1.01\tabcolsep][1.01\tabcolsep]}%
785   \@fao@Pentry{#1}}c<{\end@fao@Pentry}}

```

`\@fao@Pentry` Since `\parbox` needs “real” braces to delimit the argument, we use this trick. Note `\hspace{0pt}` to allow  $\TeX$  to hyphenate the first word.

```

786 \def\@fao@Pentry#1#2\end@fao@Pentry{%
787   \parbox[t]{#1}{\centering\strut\hspace{\z@}#2\strut}}

```

Same with C entry:

```

788 \newcolumnntype{C}[1]{>{\columncolor{@tableheadcolor}[1.01\tabcolsep][1.01\tabcolsep]}%
789   \@fao@Centry{#1}}c<{\end@fao@Centry}}

```

`\@fao@Centry` This macro is similar to `\@fao@Pentry`, but with different way to set the width of the `\parbox`:

```

790 \def\@fao@Centry#1#2\end@fao@Centry{%
791   \settowidth{\@tempdima}{\$-99.999\$}%
792   \@tempdima=#1\@tempdima\relax
793   \parbox[t]{\@tempdima}{\centering\strut\hspace{\z@}#2\strut}}

```

`\LT@makecaption` This macro produces the caption for the long tables. We redefine it to get the tables in the way specified by the designer

```

794 \def\LT@makecaption#1#2#3{%
795   \LT@mcol\LT@cols {#{1}}{\cellcolor{white}}%
796   \rlap{\fcolorbox{white}{@tableheadcolor}{\normalsize
797     \captionfamily\large\strut
798     \textcolor{white}{#1{\MakeUppercase{#2}: }#3}}}%

```

```

799 \begin{picture}(0,0)%
800 \put(.5,-7){\color{bgcolor}%
801 \begin{tikzpicture}[baseline=(current bounding box.north)]
802 \fill (0,0) -- (\nf@trianglebase,0) --
803 (.5\nf@trianglebase,-\nf@trianglebase) -- cycle;
804 \end{tikzpicture}}
805 \end{picture}\normalcolor
806 \raisebox{-17pt}{\strut}}

```

### 3.14 Front Matter

`\@generic` This is a generic macro with two parameters: name of the toc and file extension

```

807 \def\@generic#1#2{\clearspread
808 {\fontsize{48pt}{48pt}\selectfont
809 \captionfamily\color{black!40}#1\par}\@mkboth{#1}{#1}\bigskip
810 \@starttoc{#2}}

```

`\tableofcontents` Our table of contents

```

811 \renewcommand\tableofcontents{\clearspread
812 \@mkboth{\contentsname}{\contentsname}%
813 \makebox[0pt][l]{\fontsize{24pt}{32pt}\selectfont \bfseries
814 \color{black!70}\MakeUppercase{\contentsname}\space}%
815 \par\vspace{-2\baselineskip}\vspace{-\parskip}%
816 \@starttoc{toc}}

```

`\@tocpartskip` This is the skip between the parts in TOC:

```

817 \newlength{\@tocpartskip}
818 \define@key{fao}{tocpartskip}{\setlength{\@tocpartskip}{#1}}
819 \faoset{tocpartskip}=\z@

```

`\@fao@tocrule@start` The start of the current TOC colored rule

```
820 \newdimen\@fao@tocrule@start
```

`\@fao@tocrule@height` The height of the current TOC rule

```
821 \newdimen\@fao@tocrule@height
```

`\@draw@tocrule@part` Drawing the toc rule for a part

```

822 \def\@draw@tocrule@part{\@fao@tocrule@height=\pagetotal
823 \protected@write\@auxout{}{\string\@fao@partblobbottom{\@fao@currentpartnum}{\the\@fao@tocrule@height}}
824 \advance\@fao@tocrule@height-\@fao@tocrule@start
825 \bgroup\parskip\z@
826 \parbox[b][\z@]{\z@}{\hspace*{-15\p@}\color{bgcolor}\rule{2\p@}{\@fao@tocrule@height}}%
827 \parbox[b][\z@]{\z@}{\hspace*{330\p@}%
828 \color{bgcolor}\rule{41\p@}{\@fao@tocrule@height}}%
829 \par\vspace{-0.5\baselineskip}\egroup}

```

`\@draw@tocrule@section` Drawing the toc rule for a section

```
830 \def\@draw@tocrule@section{\@fao@tocrule@height=\pagetotal
```

```

831 \protected@write\@auxout{}\string\faopartblobbottom{\faocurrentpartnum}{\the\@fao@tocrule
832 \advance\@fao@tocrule@height-\@fao@tocrule@start
833 \advance\@fao@tocrule@height5\p@
834 \bgroup\parskip\z@\small
835 \raisebox{\baselineskip}[\z@][\z@]{\parbox[b][\z@]{\z@}{\hspace*{-35\p@}\color{\bgcolor}\ru
836 \raisebox{\baselineskip}[\z@][\z@]{\parbox[b][\z@]{\z@}{\hspace*{310\p@}%
837 \color{\bgcolor}\rule{41\p@}{\@fao@tocrule@height}}}%
838 \par\vspace{-\baselineskip}\egroup}

```

`\l@part` This prints the part in TOC:

```

839 \renewcommand*\l@part[2]{%
840 \ifnum \c@tocdepth >-2\relax
841 \addpenalty{-\@highpenalty}%
842 \setlength\@tempdima{3em}%
843 \addvspace{\@tocpartskip}%
844 \begingroup

```

We store the current vertical position of the page into `\@fao@tocrule@start`

```

845 % \addvspace{-2pc}\par
846 \@fao@tocrule@start=\pagetotal
847 \protected@write\@auxout{}\string\faopartblobtop{\faocurrentpartnum}{\the\@fao@tocrule
848 \parindent \z@ \rightskip \@pnumwidth
849 \parfillskip -\@pnumwidth
850 \leftskip180\p@
851 {\leavevmode
852 \color{\bgcolor}\bfseries\partname\space#1:
853 \hfil \hb@xt@\@pnumwidth{\hss #2}}%
854 \par\@draw@tocrule@part
855 \nobreak
856 \global\@nobreaktrue
857 \everypar{\global\@nobreakfalse\everypar{}}%
858 \endgroup
859 \fi}

```

`\l@spart` This adds unnumbered part to TOC

```

860 \newcommand*\l@spart[2]{%
861 \ifnum \c@tocdepth >-2\relax
862 \addpenalty{-\@highpenalty}%
863 \setlength\@tempdima{3em}%
864 \begingroup
865 \@fao@tocrule@start=\pagetotal
866 \protected@write\@auxout{}\string\faopartblobtop{\faocurrentpartnum}{\the\@fao@tocrule
867 \parindent \z@ \rightskip \@pnumwidth
868 \parfillskip -\@pnumwidth
869 \leftskip180\p@
870 {\leavevmode
871 \color{\bgcolor}\bfseries#1:
872 \hfil \hb@xt@\@pnumwidth{\hss #2}}%
873 \par\@draw@tocrule@part
874 \nobreak

```

```

875         \global\@nbreaktrue
876         \everypar{\global\@nbreakfalse\everypar{}}%
877     \endgroup
878 \fi}

```

`\l@section` This prints the section in TOC:

```

879 \renewcommand*\l@section[2]{%
880     \ifnum \c@tocdepth >-2\relax
881         \addpenalty{-\@highpenalty}%
882         \setlength\@tempdima{3em}%
883         \begingroup
884             \small
885             \@fao@tocrule@start=\pagetotal
886             \leftskip200\p@\relax\parskip\z@
887             \parindent \z@ \rightskip \@pnumwidth
888             \parfillskip -\@pnumwidth
889             {\leavevmode\small\strut
890              #1\hfil \hb@xt@\@pnumwidth{\hss #2}}\par\@draw@tocrule@section
891             \nbreak
892             \global\@nbreaktrue
893             \everypar{\global\@nbreakfalse\everypar{}}%
894         \endgroup
895     \fi}

```

`\appendix` We do not draw colored rules in the TOC part of the appendix:

```

896 \renewcommand\appendix{%
897     \bookmarksetup{startatroot}%
898     \addtocontents{toc}{\string\let\string\@draw@tocrule@part\string\relax
899     \string\let\string\@draw@tocrule@section\string\relax}}

```

We use special formatting of metadata in the lists of ... This requires explicit `\pars` at the end:

```

900 \AtEndDocument{%
901     \immediate\write\@auxout{\string\@writefile{loc}{\string\par}}%
902     \immediate\write\@auxout{\string\@writefile{lot}{\string\par}}%
903     \immediate\write\@auxout{\string\@writefile{lom}{\string\par}}}

```

`\l@nonfloat` The generic listing of a nonfloat in a list

```

904 \newcommand*\l@nonfloat{\@dottedtocline{1}{\z@}{2.3em}}

```

`\numberline` The number in table of contents

```

905 \def\numberline#1{%
906     \raisebox{\z@}[\z@][\z@]{%
907         \fcolorbox{\bgcolor}{\bgcolor}{%
908             \hb@xt@\@tempdima{\color{white}#1\strut\hfil}}\hspace{2em}}

```

`\listofmaps` Our list of maps

```

909 \newcommand\listofmaps{\@genericctoc{\listofmapsname}{lom}}

```

`\l@map` Entry in the list of maps  
910 `\let\l@map\l@nonfloat`

`\listoftables` Our list of tables  
911 `\renewcommand\listoftables{\@generic toc{\listtablename}{lot}}`

`\l@table` Entry in the list of tables  
912 `\let\l@table\l@nonfloat`

`\listofcharts` Our list of charts  
913 `\newcommand\listofcharts{\@generic toc{\listofchartsname}{loc}}`

`\l@chart` Entry in the list of charts  
914 `\let\l@chart\l@nonfloat`

### 3.15 Metadata

`\metadatassection` The section for metadata:  
915 `\newcommand\metadatassection[1]{\clearspread\twocolumn\normalcolor`  
916 `\section{#1}}`

`\metadata` This starts the metadata section. The commands inside are local to the metadata.  
917 `\def\metadata#1{\bgroup`  
918 `\def\meta@key{@@@}%`  
Now we define the commands for metadata:

`\key` This sets the key:  
919 `\def\key##1{\NR@getttitle{##1}\phantomsection\label{##1}%`  
920 `\gdef\meta@key{##1}}`

`\source` This typesets the source:  
921 `\def\source##1{\emph{Source: }##1. }%`

`\owner` This typesets the owner:  
922 `\def\owner##1{\emph{Owner: }##1. }%`  
923 `\begin{list}{}{\topsep8\p@\labelwidth\z@`  
924 `\labelsep\z@\itemindent\z@\parsep0.4ex plus 0.5ex minus`  
925 `0.2ex\relax\listparindent\z@\leftmargin\z@\rightmargin\z@`  
926 `\partopsep\z@}%`  
927 `\item{\bfseries\textbullet~#1\par\penalty10000}}`

`\endmetadata` This closes the environment:  
928 `\def\endmetadata{%`  
929 `\expandafter\ifx\csname`  
930 `metaback@\meta@key\endcsname\relax`  
931 `\else`  
932 `\emph{Referenced in: }`

```

933     \csname metaback@\meta@key\endcsname
934 \fi
935 \end{list}\egroup}

\refMetadata The way we actually reference the metadata:
936 \def\refMetadata#1{%
937   \ifx\@capytype\@undefined\def\@capytype{table}\fi
938   \if@filesw
939     \immediate\write\@mainaux{%
940       \string\faometaback{#1}\{\@capytype\}\csname the\@capytype\endcsname\}\thepage\}\@currentpage\}
941   \fi
942 }

\faometaback This reads the backreferences to metadata and prepares the the list. The arguments are: key, float type, number of float, page and hyperref
943 \def\faometaback#1#2#3#4#5{%
944   \expandafter\ifx\csname metaback@#1\endcsname\relax
945     \expandafter\gdef\csname metaback@#1\endcsname{%
946       \hyper@linkstart{link}{#5}#2~#3\hyper@linkend}%
947   \else
948     \expandafter\g@addto@macro\csname metaback@#1\endcsname{,
949     \hyper@linkstart{link}{#5}#2~#3\hyper@linkend}%
950   \fi}

```

### 3.16 Further Reading

```

\fitemize This is the special version of itemize for further reading pages. Basically it is a
patched kernel version.
951 \def\fitemize{%
952   \ifnum \@itemdepth >\thr@@\@toodeep\else
953     \advance\@itemdepth\@ne
954     \edef\@itemitem{labelitem\romannumeral\the\@itemdepth}%
955     \expandafter
956     \list
957       \csname\@itemitem\endcsname
958       {\def\makelabel##1{\color{bgcolor}{##1}\space}%
959       \itemsep\z@\labelwidth\z@
960       \leftmargin\z@\labelsep\z@}%
961   \fi}

\endfitemize This is standard:
962 \let\endfitemize=\endlist

\freading This is the “Further Reading environment”
963 \newenvironment{freading}{%
964   \vfill\section*{Further reading}\par
965   \vspace{-\baselineskip}\color{bgcolor}\rule{\columnwidth}{1.5pt}}\par
966   \vspace{-\baselineskip}\bgroup
967   \let\itemize=\fitemize
968   \let\enditemize=\endfitemize}\egroup}

```

### 3.17 Publications

`\@publicationskip` Skip between the publications. By default `\medskip`:

```

969 \newlength{\@publicationskip}
970 \define@key{fao}{publicationskip}{\setlength{\@publicationskip}{#1}}
971 \faoset{publicationskip=6pt plus 2pt minus 2pt}

```

`\@publicationparskip` Paragraph skip between the publications.

```

972 \newlength{\@publicationparskip}
973 \define@key{fao}{publicationparskip}{\setlength{\@publicationparskip}{#1}}
974 \faoset{publicationparskip=6pt plus 6pt minus 4pt}

```

`\publication` This typesets one publication:

```

975 \newenvironment{publication}[2][]{%
976   \par{\bfseries#2\par}\begin{minipage}[t]{0.49\columnwidth}%
977     \setlength{\parskip}{\@publicationparskip}%
978     \gdef\@pub@cover{#1}%
979     \long\def\pDescription##1{\par##1\par}%
980     \def\pEdition##1##2{\par##1: ##2\par}%
981     \def\pCycle##1{\par Publication cycle: ##1\par}%
982     \def\pWeb##1{\par \raggedright Webpage: \url{##1}\par}}%
983 {\end{minipage}}%
984 \ifx\@pub@cover\@empty\else
985   \hspace{0.1\columnwidth}%
986   \raisebox{\dimexpr\baselineskip-\totalheight}{%
987     \includegraphics[width=0.4\columnwidth]{\@pub@cover}}\fi\par
988 \vspace{\@publicationskip}

```

### 3.18 Subscripts

`\textsubscript` This follows standard L<sup>A</sup>T<sub>E</sub>X:

```

989 \DeclareRobustCommand*\textsubscript[1]{%
990   \@textsubscript{\selectfont#1}}
991 \def\@textsubscript#1{%
992   {\m@th\ensuremath{_{\mbox{\fontsize\sf@size\z@#1}}}}}

```

### 3.19 LyX code

`\lyxlist` It seems Lyx wants this:

```

993 \newenvironment{lyxlist}[1]
994 {\begin{list}}{}
995 {\settowidth{\labelwidth}{#1}
996   \setlength{\leftmargin}{\labelwidth}
997   \addtolength{\leftmargin}{\labelsep}
998   \renewcommand{\makelabel}[1]{##1\hfil}}
999 {\end{list}}

```

### 3.20 The final word

```
1000 \setbgcolor{gray}\selectcolor
1001 \pagestyle{empty}
1002 \normalsize\normalfont
1003 \end{class}
```



## References

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## Change History

2013/12/16		v1.1	
\@currentsymbol: T	31	\colored@icon@fg: Added argument	16
\@spart: U	32	iconfill: Rewrote	30
		\currenticonfill: Added macro	31
v0.2		v1.3	
\@part: Changed formatting	31	\@part: Changed the way the icons are displayed	31
iconfill: Rewrote	30	\@partpagepicture: Rewrote using tikz	17
\EndPartIntro: Deleted \clearspread	30	General: Added Further Reading from the old code	38
\newicon: Added macro	16	Added metadata from the old code	37
\section: Redefined	32	Added Pubs from the old code	39
v0.3		partpagestyle: Changed position of footers	17
\@generictoc: Added macro	34	Rewrote using tikz	17
\@toc@ext@list: ll	18	\EndPartIntro: Added \normalcolor	30
\EndPartIntro: Restored		\evenfootmark: Introduced macro	16
\clearspread	30	\footskip: Increased	14
\l@chart: Added macro	37	\frontmatter: Deleted change in the pagenumbers	29
\l@map: Added macro	37	\LettrineFontHook: Redefined	12
\l@nonfloat: Added macro	36	\mainmatter: Deleted change in the pagenumbers	30
\l@table: Added macro	37	\metadata: Rewrote	37
\listofcharts: Added macro	37	\metadatassection: Added macro	37
\listofchartsname: Added macro	22	\nf@opcol: Typo corrected	27
\listofmaps: Added macro	36	\oddfootmark: Introduced macro	16
\listofmapsname: Added macro	22	\subsection: Redefined	32
\listoftables: Added macro	37	\tableofcontents: Rewrote	34
\newnon@float: Added writing extensions to the list of extensions	19	standardpagestyle: Changed position of footers	16
\numberline: Added macro	36		
\tableofcontents: Added macro	34		
v1.0		v1.4	
\colored@icon: Added macro	16	\@part: Text is now black	31
\colored@icon@fg: Added macro	16		
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