

# Documentation Style Guide

Open Source Hardware by  
*CircuitousRoot*

# General Introduction

This document describes the stylistic conventions of the documentation for CircuitousRoot Open Source Hardware projects.

See the CircuitousRoot Notebook “Open Source Hardware on CircuitousRoot” for more information and a list of CR OSHW projects:

<http://www.CircuitousRoot.com/oshw/index.html>

See the Notebook of CR OSHW “General Documetation” for information on the document numbering system (which is a subset of the CR part symboling system). See this same Notebook for this present document and its source:

<http://www.CircuitousRoot.com/oshw/documentation/index.html>

These documents are intended to be maintained in Apache OpenOffice<sup>1</sup> and reflect the structure of that program.

With a few exceptions (such as the decision to set the margins so as to make the documentation printable on both US Letter and A4), most of the stylistic decisions here fall into the category of “it doesn’t really matter so long as it’s consistent.”

This present document also covers stylistic matters for CR OSHW Operations Schedules (maintained using Inkscape) and Onshape CAD drawings.

## Digital Lettering Faces

For the documentation, I’ve settled on the “Linux Libertine” faces, as they work consistently well and are freely available for multiple computing environments.

- Linux Libertine itself for general use
- Linux Biolinum (a sans serif face) for titles, headings, and the like
- Linux Libertine Mono for part symbols and URLs

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<sup>1</sup> LibreOffice won't work through the entire series of documents for reasons discussed later (it fails on large image content and on multiple CJK fonts).

# Page Formatting

The intended page size is 8 1/2 x 11 inches (US Letter) in “portrait” orientation, but the margins are sufficient to allow printing on A4 size paper (210 x 297 mm).

The left margin is 1 inch. This allows enough room for both standard US 3-hole punching and either 2-hole ISO 838 hole punching or its informal “888” extension to 4-hole punching (both for A4).

The right margin is also 1 inch. Many (most?) users will not have access to two-sided printing. A horizontally symmetrical page layout looks equally good (or bad) when printed single-sided or double-sided.

The top margin is 0.75 inches. The bottom is 1 inch (to allow a little more room for thumbs).

The page layout is set to “Right and Left”. As the layout is horizontally symmetrical, mirroring pages is a needless complication.

In terms of page layout, the first (title) page is not treated any differently from other pages. (It has a footer, too.) Basic design errors in Libre/Open Office and its predecessors make the handling of different-looking first pages nightmarish.<sup>2</sup>

Footers should be set on, and set to be the same on right and left pages. The left side of the footer should have a revision number and date. The right side of the footer should have the document part symbol and a page number. See the bottom of this page for an example.

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<sup>2</sup> Yes, I know how to do it. No, it is not worth it. Yes, it is due to design bugs, not to good features.

# Paragraph Styles

Most of the formatting is done through paragraph styles.

## Default Style

The Libre/OpenOffice “Default Style” should be modified to set:

- The default digital lettering font to “Linux Libertine”
- Paragraph first-line indentation to 0.332 inches (two picas)
- Space above and below paragraphs to 0

It should already be 12 point and justified.

All styles other than the Default Style should have names beginning with “CR”.

All subsequent new styles should be based on this modified Default Style (except for styles after the first in obvious chains, such as CR Heading, CR Subheading, CR SubSubheading, etc.)

CR Default but No Indentation

Just as it says. Useful especially for continuing a paragraph after a list (which is to say, in overcoming Libre/OpenOffice bugs).

## CR Heading 1

The level 1 heading within the document (but not the title).

24 point bold Linux Biolinum, no indentation.

The headings and subheadings are integrated into any numbering or outline scheme. I hope that the individual documents will be short enough not to need this.

## CR Heading 2

The level 2 heading within the document.

16 point bold Linux Biolinum, no indentation. Inherit the rest from CR SubSubheading.

CR Heading 3

The level 3 heading within the document.

12 point bold Linux Biolinum, no indentation. Inherit the rest from CR Subheading.

## CR Blockquote

Default, no indentation, but with left and right margins 0.5 inches in.

## CR Note Entry

A “Note” in this context is an item within the main flow of the text (not a footnote or endnote) which has a first line flush left (no first-line indent) but subsequent lines indented by two picas (0.332 inches). Everything else is inherited from Default Style.

## CR Note Continuation

This is a continuation of a “Note” (see above) with all lines indented two picas (0.322 inches).

## CR Note URL

This is the same as a “CR Note Continuation” but done in 10 point Linux Libertine Mono, regular.

You should also set up linking to the external location identified in the URL.

This Paragraph Style is intended for URLs which stand alone on a line. For URLs which are embedded within other text, use the Character Style "CR Embedded URL".

## CR Parts List Entry

Right now, this is the same as “CR Default but No Indentation”.

The line identifying a logical grouping of parts (that is, the line with the part symbol without a numeric suffix, such as 7TF) should be highlighted in **bold**.

Part symbols (in Parts List Entry lines and elsewhere) should be tagged with the CR Part Symbol character style.

## CR Bibliographic Entry

In conventional form: Flush left first line (no first-line indentation); subsequent lines indented by two picas (0.322 inches). Everything else inherited from Default Style.

## CR Bibliographic Annotation

Indent two picas (0.322 inches). Everything else inherited from CR Bibliographic Entry.

## CR Bibliographic Annotation URL

The same as CR Bibliographic Annotation, but in 10 point Linux Libertine Mono.

This Paragraph Style is intended for URLs which stand alone on a line. For URLs which are embedded within other text, use the Character Style "CR Embedded URL".

## CR TitlePage Title

Give each of the textual elements on the title page its own style (except within the footer).

“CR TitlePage Title” is of course the main title.

36 point Linux Biolinum, regular. Centered. No space above or below. No first-line indentation.

## CR TitlePage Subtitle

Inherit everything from “CR TitlePage Title”, but change the body size to 30 point.

## **CR TitlePage Series Line**

This is used at the top left of the title page to identify the CR OSHW “series” for this document (e.g., Series TF for Type Founders’ Tools).

14 point Linux Biolinum, bold. No space above or below. Flush left, no first-line indentation.

## **CR TitlePage Device Line**

This is used just under the “CR TitlePage Series Heading” to identify the device or devices within the series which are the subject of the manual (e.g., 15TM for the Type Makers’ Signature Jig).

## **CR TitlePage Maker Line**

Used for the line which says “Open Source Hardware By”.

16 point Linux Libertine, regular. Centered. No first-line indentation. No space above or below.

## **CR TitlePage CR Line**

Used only for the line which says “CircuitousRoot”.

28 point Linux Libertine, italic. Centered. No first-line indentation. No space above or below.

## **CR TitlePage Manufacturer Line**

Used only for the line which says “Manufactured by”.

18 point Linux Libertine, regular. Centered. No first-line indentation. No space above or below.

Note: When you add the line below this identifying yourself as the manufacturer, you can define whatever style you wish.

# Character Styles

The Default character style cannot be changed. Curious.

## CR Part Symbol

12 point Linux Libertine Mono.

## CR Filename

12 point Linux Libertine Mono.

## CR Embedded URL

12 point Linux Libertine Mono.

This is intended for URLs embedded in other text. URLs in "notes" (CR Note Entry, CR Note Continuation) and bibliographic annotations (CR Bibliographic Annotation) stand in their own lines and should use the Styles "CR Note URL" and "CR Bibliographic Annotation URL", respectively.

For URLs in footnotes, right now I'm cheating and just modifying them on the fly to be Linux Libertine Mono.

# Word Processor Issues

The situation at the time of writing (2017) for free and open source word processing software is a generally unacknowledged disaster at the heart of the FOSS movement. The problem is compound. It isn't just that the one major player (OpenOffice) split into two competing factions (the more belligerent of which, LibreOffice, is consistently producing poorer results faster than the other). It is that this software has at its core some of the same very bad design bugs<sup>3</sup> seen in its commercial competitors. On top of this, since the developers of these programs seem to use them only in toy situations, they break down almost immediately when confronted with large or complex documents.

At the present time (2017), Apache OpenOffice is the only one of these two programs which is useful for this documentation. LibreOffice becomes painfully slow when attempting to deal with either any significant image content or multiple CJK fonts.

Unfortunately, Apache OpenOffice4 crashes instantly when attempting to print or export-as-PDF documents using certain common CJK fonts. LibreOffice must be used to print these (this can be done from the command line, fortunately). Naturally, the pagination turns out differently.

These are all known bugs which have remained unfixed for years.

It is also unfortunate that LibreOffice and Apache OpenOffice now store their templates in different locations and cannot find each others' templates. So if you use templates (and these style guidelines are distributed as templates) then you must commit to one or the other. It is also presently possible to copy the template to both locations, as while the templates generated differ, at the moment both programs can read each others' templates. This situation may change for the worse, of course.

As of 2017, LibreOffice stores its templates in  
~/.config/libreoffice/4/user/template  
and Apache Openoffice 4 stores its templates in  
~/.openoffice/4/user/template

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<sup>3</sup> Example: Page style is not linked to pages, but to the invisible page breaks between them. You cannot program around a design flaw of this magnitude.

# Templates

These settings and styles have been implemented in an Apache OpenOffice4 generated ".ott" format template. As a CR OSHW document, this template is:

<http://www.CircuitousRoot.com/oshw/documentation/2ZZ10-documentation-style-template-00.ott>

To use this template, you must first let OpenOffice know about it.<sup>4</sup> Either put the `cr-2ZZ10-documentation-template-00.ott` file somewhere logical (to you) and edit the template path setting to point there<sup>5</sup> or put the file in the place where the program already expects to find templates<sup>6</sup>.

When you create a template from a document, OpenOffice and LibreOffice store both the style and format information (which is what you want) and the content of the document. This is baffling, logically, because it conflates two distinct kinds of things. It does allow the automatic inclusion of example sections (such as title pages) and boilerplate text. Because of this, it may not at first be clear why using a template has any advantage over simply copying an example document.

There is precisely one advantage: If you use a template, changes made in that template may be reflected in your document the next time you open it. This is useful, but less useful than you might think (to propagate the change over many documents, you must manually open, accept the template update, and save each of them individually by hand).

The following notes are mostly just for my own reference; all of this can be found online.

To create a new document using this template, first put it in a location where OpenOffice can find it. Then File -> New -> "Templates and Documents". Then click on the template's name. This opens a new document which is a copy of the document the template was generated from. Edit it as you wish and save it (it should save as a .odt document, not as another template).

To associate this template with an existing document there seem to be two methods.

1. Create a new document using the template, erase everything from the document, open the existing document simultaneously, use Ctrl-A to select all of it, then paste it into the new document. Close the existing document. Then Save-As the new document over the existing one. This is pretty awful.
2. Install André Schnabel's Template Changer extension. This is much to be preferred (why it hasn't been incorporated into the standard product is puzzling).

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4 All directions here will no doubt become invalid as these programs change in annoying and incompatible ways in the future.

5 In Apache OpenOffice in 2017: Tools -> Options -> OpenOffice -> Paths. Then select and edit the Templates path.

6 `~/openoffice/4/user/template`

But be aware that there is a bug in the Template Changer (as of 2017, at least): It overwrites the content of the existing document's footers with the content in the template (even if that content is empty). You have to fix this by hand in every document based on a template each time it changes.<sup>7</sup>

To modify the template:<sup>8</sup>

1. File -> Templates -> Organize
2. Doubleclick on folder containing the template (probably MyTemplates)
3. Singleclick on the template
4. Drop-down a menu from the Commands button; choose Edit.
5. Edit the template
6. File -> Save

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<sup>7</sup> Mixing style and content in "templates" is a basic design bug.

<sup>8</sup> [https://wiki.openoffice.org/wiki/Editing\\_a\\_template](https://wiki.openoffice.org/wiki/Editing_a_template)

# Operations Schedules

These are done in Inkscape (a free and open source SVG editor). Inkscape is actually pretty annoying (it moves things without telling you), but trying to do a form such as this in OpenOffice or LibreOffice is essentially impossible. You may use the SVG editor of your choice.

When filling out an Operations Schedule, you can either use pencil or pen on a printed version or an SVG editor of your choice on the .svg source file.<sup>9</sup>

Generally, the layout and style for the CircuitousRoot Operations Schedule is based loosely on the Star Parts, Inc. (formerly Linotype Parts Company) “Operation Sheet” for part F-517, with some influence by later Star Parts sheets such as the one for part A3-1. See the CR OSHW document *2ZZ0 About Operations Schedules* for facsimiles of these sources.

## Sheet Layout

Because Operations Schedules may be bound either at the top or the left, the top and left borders are both set to 1 inch so as to allow both 3-hole US standard punching and either 2-hole ISO 838 or 4-hole “888” punching.

The bottom and right margins are set to 1/2 inch. This gives us as much room as possible on the sheet while still being safely greater than the approximately 1/4 inch or 6 mm nonprinting border areas of most office printers.

## Units and Grids

Units are inches (set both units and display units).

Create a new 1/10 inch grid, with highlighted lines every 10<sup>th</sup> line.

Note that in Inkscape you may have to turn on text-snapping (the ‘A’ icon) manually even if regular snapping is enabled.

## Line Widths

The line width for the outer border of the form is 0.02 inches.

All other lines within the border are 0.015 inches wide.

The small tick marks outside of the border (which may assist in drawing horizontal lines across the form by hand) are 0.005 inches wide.

## Lettering

The digital lettering face for pre-printed text on the form is Liberation Sans by Steve Matteson (a replacement for Microsoft Ariel). I picked this over some other likely candidates such as DejaVu Sans because it does not have descenders in the capital ‘J’ and ‘Q’ - but then this form does not have these characters, so this argument doesn’t really hold up. Actually, the newer Droid Sans Mono (also by Matteson) might work better.

I decided against using Linux Biolinum, since its “humanist” sans serif style wasn’t really a good match for the gothic hand lettering traditional in drafting.

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<sup>9</sup> Or you could use a typewriter on a printed form. That would make a statement worthy of admiration.

The Star Parts Operation Sheet for F-517 uses small caps very nicely. I'm avoiding this refinement here as it is just asking for trouble.

Note that the space around pre-printed text should be at least 1/10" on the grid on all sides for snapping to work cleanly without running the text into surrounding lines.

## **Embedded License**

I have set the license field for the SVG document to Creative Commons Attribution-ShareAlike. In Schedules that I fill in and distribute, this is the license for both the form itself and the content. If you choose to use this form, and choose to distribute your work, and choose the CC-BY-SA license for your distribution, then all is well.

If you choose some other license, then you will have to change this license field but also find some way to convey the information that the blank Schedule itself is licensed CC-BY-SA and your content is licensed in some other way. This will necessarily be awkward.

# Onshape Drawings

For the present, use the Onshape-supplied standard ANSI drawing templates.

## **CircuitousRoot Logo**

In DejaVu Serif, italic. Size: 0.200 inches. Center in space.

## **All Other Lettering**

In Noto Sans, ALL CAPITALS. Size as appropriate from available selections (drawing titles are 0.1152, drawing numbers are 0.1440).

# Licensing

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For a discussion of the issues of Open-Source Hardware and the use of Creative Commons licenses to ensure its freedom via documentation licensing, see the Notebook “Open-Source Hardware on CircuitousRoot” at:

<http://www.CircuitousRoot.com/oshw/index.html>

See also the printed/printable CircuitousRoot document 1ZZ0, *Licensing Terms*, which is available with the distribution of these hardware designs.

The original distribution of this present document is at:

<http://www.CircuitousRoot.com/oshw/documenation/index.html>

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I prefer not to receive telephone calls. Thank you.

# Revision

1 2017-12-30. Initial version.