“Dwarsligger”

Willi Egger

The Dwarsligger is a handy book format which flips open over the spine. The text is typeset parallel to the spine. This book fits into almost any pocket. The design is patent protected although it is a nice showcase for what you can achieve with ConTEXt. This article discusses the basic layout and arrangement of pages for preparing sections and shows a method of placing collating marks on the page edges.

Introduction

Dwarsligger is Dutch and means crossbeam or sleeper. However it is also a handsome book format, where the text is printed parallel to the spine. Flipped open it has almost the dimensions of a paper-back. Due to the fact that it is printed on very thin paper, normally used for the production of bibles, even big volumes of more than 1000 pages have still a small thickness. The binding allows, that the book lays open perfectly and can be handled by one hand easily. – The Dwarsligger is an initiative of Jongbloed BV printers and publishers and Veen Bosch & Keuning (VBK). The Dwarsligger is a registered trademark (2006) and protected by a worldwide patent.

The first Dwarsligger was published back in 2009. In the meantime there are several hundred titles available. In 2010 it entered the Spanish market and one year later it entered the English market under the Flipback brand name.

After this book form entered the market several other companies tried to come up with similar concepts. However since then there is only the original Dwarsligger on the market with all the others having withdrawn.

The Project

I know that I am entering into a somewhat slippery field here by writing about making a book where the concept is patent protected. However, what I present here is a project for my personal purposes and a showcase of the strength of the ConTEXt typesetting tool.

Back in 2010 I participated in a workshop ‘French binding’ at the atelier of Geert van Daal, a well known bookbinder now living in Amsterdam. The notes and drawings made during this workshop were put obviously into ConTEXt. At that time I also came across the Dwarsligger concept so I got the idea to establish an imposition scheme and develop a suitable style for its typesetting. This was fairly successful, although using 80 gr. paper for printing never gives the special touch of a print made on bible-printing paper.

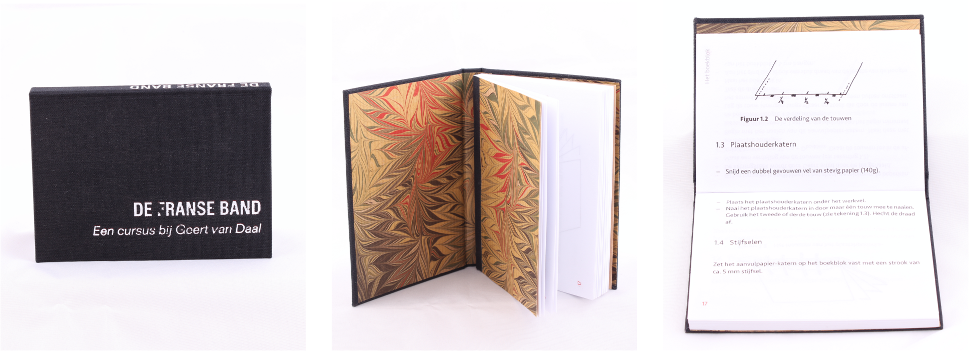

DE FRANSE BAND
Een cursus bij Goert van Daal
Figuur 1.2 De verdeling van de touwen
1.3 Plaatshouderkatern
1.4 Stijfselen

Figure 1. Flip-back from workshop “French Binding”

Afterwards, I forgot about it for a while until my brother came up with the idea of putting his diary, written during his trip to Israel, into the form of a Dwarsligger.

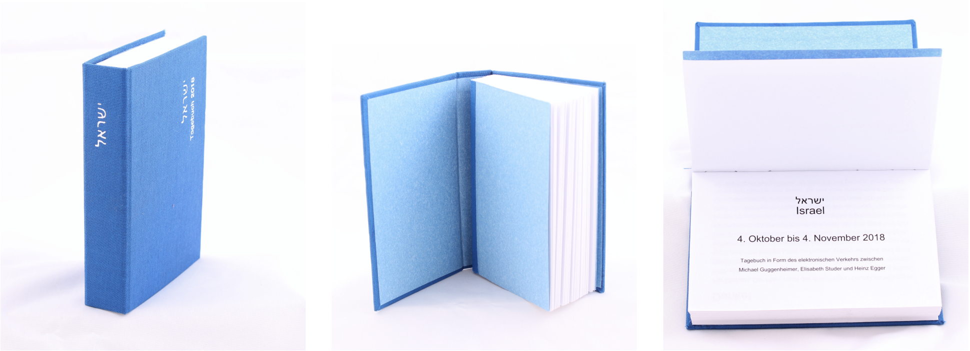

ישראל
Israel
4. Oktober bis 4. November 2018
Tagebuch in Form des elektronischen Verkehrs zwischen
Michael Guggenheimer, Elisabeth Studer und Heinz Egger

Figure 2. Flip-back of my brother’s day journal

There is one issue of the Dwarsligger I do not like however. The original has only odd page numbers, placed on the bottom page. With the help of Wolfgang Schuster we were able to tweak ConTEXt into producing odd and even page numbers printed in the margin of the lower right corner.

Once this all was successfully solved, I considered raising this in the forthcoming ConTEXt meeting but in the end I did not make it to the meeting. In preparation for the meeting, I tried to put together the ‘ConTEXt an excursion’ beginners manual into a Dwarsligger format.

The original manual is laid out on A4 paper, so reducing it to the Dwarsligger format required some tweaking : -)

Layout

General Setup

The format for the book-block of a Dwarsligger is 118 × 80 mm.

We need to define this paper format:

```
\definepapersize
  [Dwarsligger]
  [width=118mm,
   height=80mm]
```

Then we can impose Dwarsligger pages onto standard A4 sheets:

```
\setuppapersize[Dwarsligger][A4,portrait]
```

The layout is somewhat special. We need to setup an even and odd page layout. On the odd/bottom pages, which will be the lower pages in the book we want a footer but no header. Conversely on the even/top pages we want a header but no footer lines.

```
\setuplayout % defines allways the right (odd) page!
  [topspace=7mm,
   backspace=12mm,
   margin=7mm,
   margindistance=2mm,
   header=0pt,
   headerdistance=0pt,
   footer=1ex,
   footerdistance=1pt,
   height=middle,
   width=middle,
   location=middle,
   marking=on]

\definelayout[even]
  [topspace=7mm,
   backspace=12mm,
   margin=7mm,
   margindistance=2mm,
   header=1.5\bodyfontsize,
   headerdistance=4pt,
   footer=0pt,
   footerdistance=0pt,
   height=middle,
   width=middle,
   location=middle]
```

The page numbering is special too. First we switch off the page number placement:

```
\setuppagenumbering
  [location=none,alternative=doublesided]
```

Now we define the alternative page numbering:

```
\define[1]\Dwarsliggernumber%
  {\number\numexpr(#1)/2\relax}

\defineconversion [Dwarsligger][\Dwarsliggernumber]

\setupuserpagenumber[numberconversion=Dwarsligger]
```

The new page numbers will be inserted on the odd (down) page in the outer margin space. Because there is not much space, we put them into a layer so that we can adjust the placement at will.

```
\definelayer
  [Pagenumberlayer]
  [state=start,
   width=\makeupwidth,
   height=\makeupheight]

\startsetups[Pagenumbering]
  \setlayerframed
    [Pagenumberlayer]
    [preset=rightbottom,
     hoffset=-20mm,
     voffset=-9mm]
     [frame=off,
     width=2em,
     height=\strutheight]
     {\prefixedpagenumber}
\stopsetups

\setupuserpagenumber[number=5]
\setupbackgrounds
  [rightpage]
  [setups=Pagenumbering,background=Pagenumberlayer]
```

Imposition

Dwarsligger Impositioning Scheme

The size of the Dwarsligger page is such that we can place four pages on each side of an A4. The grain direction of standard A4 paper will be fine, because it should run parallel to the spine. In order to get sections of 16 pages we will use two A4 sheets.

ConTeXt comes with a large series of common imposition schemes. However, the Dwarsligger needs an additional one. This scheme will not make it into the distribution because of the patenting rights. A personal file for such an impositioning scheme could be 't-folding.mkiv' and reside in the ConTeXt-project tree.

For creating a new impositioning scheme we need to add two definitions in a file for the imposition.

```
\installpagearrangement 2*4*2-D
  {\dosetuparrangement{2}{2}{4}{3}{2}
    % X,Y,Total,hcutmarks,vcutmarks
    \pusharrangedpageSIXTEENTWOD\poparrangedpagesAtoD\relax}

\def\pusharrangedpageSIXTEENTWOD#1%
  {\advancearrangedpageN
    \reportarrangedpage\arrangedpageN
    \ifcase\arrangedpageN
    \or \handlearrangedpageXandY{#1}011\arrangedpageA %  1
    \or \handlearrangedpageXandY{#1}101\arrangedpageB %  2
    \or \handlearrangedpageXandY{#1}011\arrangedpageC %  3
    \or \handlearrangedpageXandY{#1}101\arrangedpageD %  4
    \or \handlearrangedpageXandY{#1}011\arrangedpageD %  5
    \or \handlearrangedpageXandY{#1}101\arrangedpageC %  6
    \or \handlearrangedpageXandY{#1}011\arrangedpageB %  7
    \or \handlearrangedpageXandY{#1}101\arrangedpageA %  8
    \or \handlearrangedpageXandY{#1}100\arrangedpageA %  9
    \or \handlearrangedpageXandY{#1}010\arrangedpageB % 10
    \or \handlearrangedpageXandY{#1}100\arrangedpageC % 11
    \or \handlearrangedpageXandY{#1}010\arrangedpageD % 12
    \or \handlearrangedpageXandY{#1}100\arrangedpageD % 13
    \or \handlearrangedpageXandY{#1}010\arrangedpageC % 14
    \or \handlearrangedpageXandY{#1}100\arrangedpageB % 15
    \or \handlearrangedpageXandY{#1}010\arrangedpageA % 16
        \poparrangedpages
    \fi}
```

The first definition installs a handler with the given name "2*4*2-D". I used a system for indicating what the scheme is doing within its name. The given name reads as follows: doublesided four pages per side and using two sheets of paper to form the section (2×4×2=16), with the D added to indicate Dwarsligger. For the setup of the handler we need to tell ConTEXt the grid of pages in the X and Y directions and the total number of pages. The last two arguments tell ConTEXt about the placement of the cutting/folding marks. This handler then calls the second definition, which tells ConTEXt the way the pages should be placed on the paper. In establishing a section of 16 pages, we define four sets of four pages using the rotation, the horizontal grid position and vertical grid position arguments.

Setting up Arranging

Now that the new impositioning scheme is in place, we call it:

```
\usemodule[folding]

\setuparranging[2*4*2-D]

\definepageshift
  [hor]
  [horizontal]
  [5mm,5mm,5mm,5mm,5mm,5mm,5mm,5mm]

\setuppageshift[paper][hor]
```

As visible above, we are not quite ready. In order to have the space to cut the book-block, we need to use a horizontal page shift. This time the page shifting list is simple, because we want all pages to be moved the same amount. The shift instruction has to be given for each page on the sheet (i.e. eight times, in this case).

Collating Marks

The Module

When printing a book with many sections, it can be a nightmare to keep the sections in the right sequence. For this purpose, printers use a mark on the spine for each section. It is arranged in such a way that when looking at the spine, these marks will appear as a stair on the folds. This way you can easily see whether the sequence of the sections is ok.

I made such a tool many years ago and it works with adaptations to my satisfaction. Perhaps this module could be added to the distribution. The code is based on a module for adding printer’s positioning marks by Thomas Schmitz.

```
\startmodule[collatingmarks]

\writestatus{loading}{ConTeXt Module for collating marks}

\unprotect

\setupmodule[Collatingmarks=yes]
```

```
\setupMPvariables
  [Collatingmarks]
  [pages=8, %pages per sheet doublesided
   sheets=2,% number of sheets forming one section
   horpageshift=0,
   frenchdoors=false,
   wickel=false]
```

We prepare collating marks:

```
\processaction[\currentmoduleparameter{Collatingmarks}]
  [yes=>\def\Collatingmarks{Collatingmarks},
   no=>\def\Collatingmarks{},
   \v!unknown=>\def\Collatingmarks{},
   \v!default=>\def\Collatingmarks{}]
```

The newly prepared macros go into the page background:

```
\setupbackgrounds
  [page]
  [state=repeat,background={\Collatingmarks}]
```

We define an overlay for the collating marks.

```
\defineoverlay[Collatingmarks][\useMPgraphic{Collatingmarks}]
```

Now we are going to use MetaPost to do the calculations and draw the collating marks.

```
\startusableMPgraphic{Collatingmarks}
  StartPage;

  numeric offset,sectionno,pages,sheets;
  numeric factor,correction,offset,pageshift;
  path p,q;
  boolean frenchdoors,wickel;

  pages       := \MPvar{pages};
  sheets      := \MPvar{sheets};
  pageshift   := \MPvar{horpageshift};
  frenchdoors := \MPvar{frenchdoors};
  wickel      := \MPvar{wickel};

  z5colm = ulcorner Page;
  z6colm = (x5colm, y5colm-10mm);

  p := unitsquare xscaled 1mm yscaled 7mm;

  if \realpagenumber mod 2 = 1 :
```

```
  % on uneven pages only
  sectionno := \realpagenumber div (sheets*pages)+1;
  label.lrt(textext("\switchtobodyfont[5pt]"
   & decimal sectionno &""),
   llcorner Page shifted (1mm,-2mm));
  if \realpagenumber mod (sheets*pages) = 1 :
   % on the first page of a section only
   nofmarkings := (y6colm-7mm) div 7mm;
   offset := y6colm-sectionno*7mm;
   if sectionno > nofmarkings :
    correction := sectionno div nofmarkings;
    offset := y6colm-(sectionno-correction*nofmarkings)*7mm;
   fi;
   if frenchdoors or wickel :
    p := p shifted ((PaperWidth),offset);
   else :
    p := p shifted (-1mm-2pageshift,offset);
   fi;
   fill p withcolor black;
   if sectionno < 9 :
    label.rt(textext("\switchtobodyfont[3pt] \white "
     & decimal sectionno &""),
     center p shifted (-1.3mm,0));
   else :
    label.rt(textext("\switchtobodyfont[3pt] \white "
     & decimal sectionno &""),
     center p shifted (-1.5mm,0));
   fi;
  fi;
 fi;
\stopusableMPgraphic

\protect
\stopmodule
```

Setting up the Collating Marks for the Dwarsligger

```
\usemodule[Collatingmarks]

\setupMPvariables
 [Collatingmarks]
 [pages=8,  % pages per sheet of paper doublesided
  sheets=2, % sheets of paper used per section
  horpageshift=5mm]
```

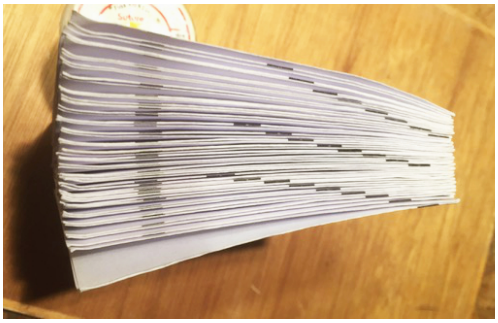


Figure 3. View on the collating marks

Results: Double Pages

The ‘ConTEXt an excursion’ beginners manual is included in the distribution. Details about the layout on A4 paper including the added style elements can be looked up in the doc folder of the ConTEXt-tree.

See fig. 4 for an impression of two sample pages.

The Book

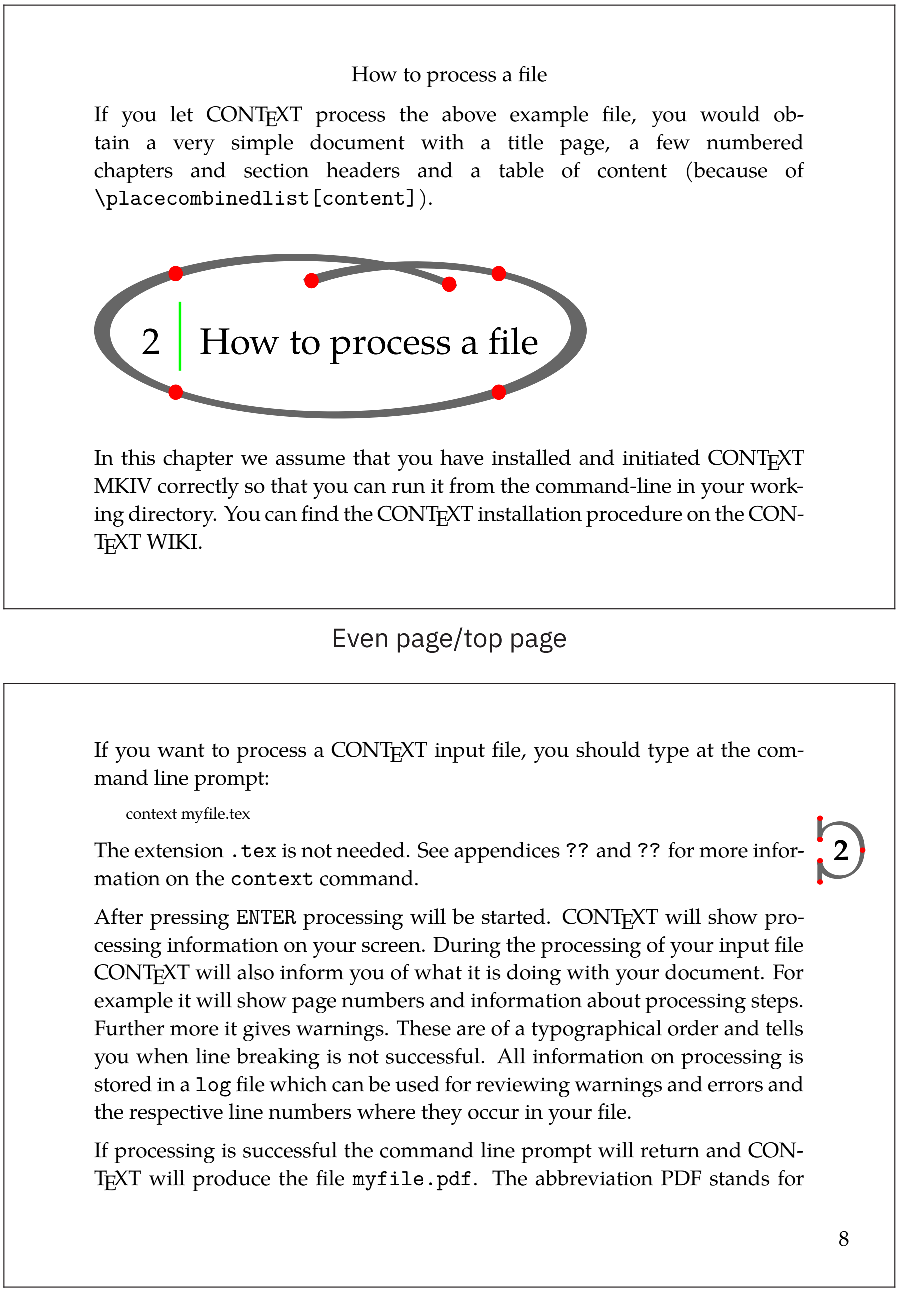
The book is printed on 60 gr. copier paper. The cover is printed on 120 gr. Conqueror paper. End papers are made from 120 gr. colored paper from Winter & Company. The book cover spine is covered with book binders cloth as is the spine of the book block itself.

Summary

The making of a Dwarsligger for your own purpose is an intriguing issue. Thanks to the versatility of ConTEXt this is possible. Using different page-layout for odd and even pages or creating a custom made page numbering, ConTEXt allows it. With a little bit of studying of the imposition source code, it is fairly easy to make an imposition scheme that fits the needs of the project. As in professional book printing, collating marks with the help of MetaPost can be added for the assembly of the section-sequence.

Acknowledgement

I would like to thank Wolfgang Schuster for helping me get the page numbering working properly. Many thanks to Hans Hagen for all the trickery available in ConTEXt to manipulate pages.



How to process a file

If you let CONTEXT process the above example file, you would obtain a very simple document with a title page, a few numbered chapters and section headers and a table of content (because of `\placecombinedlist[content]`).

2 How to process a file

In this chapter we assume that you have installed and initiated CONTEXT MKIV correctly so that you can run it from the command-line in your working directory. You can find the CONTEXT installation procedure on the CONTEXT WIKI.

Even page/top page

If you want to process a CONTEXT input file, you should type at the command line prompt:

```
context myfile.tex
```

The extension `.tex` is not needed. See appendices ?? and ?? for more information on the `context` command.

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After pressing `ENTER` processing will be started. CONTEXT will show processing information on your screen. During the processing of your input file CONTEXT will also inform you of what it is doing with your document. For example it will show page numbers and information about processing steps. Further more it gives warnings. These are of a typographical order and tells you when line breaking is not successful. All information on processing is stored in a `log` file which can be used for reviewing warnings and errors and the respective line numbers where they occur in your file.

If processing is successful the command line prompt will return and CONTEXT will produce the file `myfile.pdf`. The abbreviation PDF stands for

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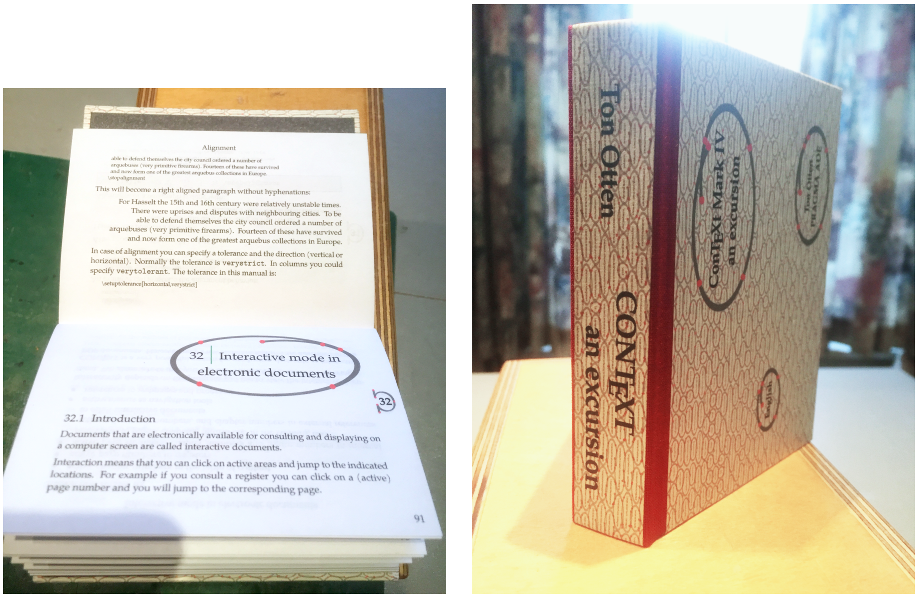
Odd page/bottom page

Figure 4. An odd and even page



Alignment

able to defend themselves the city council ordered a number of arquebuses (very primitive firearms). Fourteen of these have survived and now form one of the greatest arquebus collections in Europe.
\stopalignment

This will become a right aligned paragraph without hyphenations:

For Hasselt the 15th and 16th century were relatively unstable times. There were uprises and disputes with neighbouring cities. To be able to defend themselves the city council ordered a number of arquebuses (very primitive firearms). Fourteen of these have survived and now form one of the greatest arquebus collections in Europe.

In case of alignment you can specify a tolerance and the direction (vertical or horizontal). Normally the tolerance is `verystrict`. In columns you could specify `verytolerant`. The tolerance in this manual is:

```
\setuptolerance[horizontal,verystrict]
```

32 Interactive mode in electronic documents

32

32.1 Introduction

Documents that are electronically available for consulting and displaying on a computer screen are called interactive documents.

Interaction means that you can click on active areas and jump to the indicated locations. For example if you consult a register you can click on a (active) page number and you will jump to the corresponding page.

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Figure 5. The finished manual