OOorganum

with *OpenOffice.org*

Manual

The rule of windchest.

It is still a very small utility, just provided three sheets of spreadsheet. The calculation is based on two sheets of a spreadsheet, two "macro" and a dedicated dialog. But from what it is projected to draw not only a grid of windchest but especially the pipe sections which are arranged above. The windchest can not, for now, have no more than twenty stops and sixty-one notes what seems already a good foundation. To minimize data entry errors, all sheets of the file is locked. You can unlock each sheet through the menus: "*Tools*" / "*Protect document*" / "*Sheet*" and the password is always "*smcj*".

The sheet nammed "Measures of pipes".

It can take as stops measures to determine the order of the notes of the winchest, therefore it rule. Simply *copy* / *paste* from spreadsheets measures is possible here. We prefer a *special paste* (Menu "*Edit*" / "*special paste...*") to a *normal paste* by unchecking the option to select "*Format*" to comply with those adopted in the entire spreadsheet and not change the colors cells.

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Note that each stop has two columns of measures. The first is devoted to the diameters of metal pipes, leaving the second empty. If this last is true-valued, then we consider that these are the dimensions of a rectangle, then the outer coast of a wooden pipe. The left column represents the outer coast parallel to the facade, that of it being naturally right angles. There are no plans where different orientations too specific to be programmed as much as always manually editable post on a drawing vector, purpose of this seizure.

It is obviously vital for the program, to known the order of pipes on the windchest. In a very large majority of cases, the organ windchests have a diatonic layout but it may very well meet the layout in third, *cutting-back* on the first octave (*Positifs*), or any abnormality of layout. As it is not easy to determine the order and to avoid all *copy / paste* always the source of errors, a dialog box is available to fill the column dedicated to the *Order of the Rule*.

The headings of columns contain the names of stpos and a cell that can activate or not the transfer of stops in the "*Grid of windchest*" we want to establish. The notation of notes can enter in the first octave, the result is consistent.

The dialog box.

It responds to the call button labeled " Rule Order " in the top left of the sheet. Everything depends on the contents of a multiple-selection list which you can sort the items in an spécific order of the pipes, but also move up or down or even eliminate some of its elements. The list also responds to keyboard shortcuts such classics as the key combination Ctrl + A (select all items), Shift⇧ + 🖱 (select of contiguous items) or Ctrl + 🖱 (selection of non-contiguous items) work here are fully functional. All sortings is caused by the left button of mouse and this is only **on selected items** of the list.

The buttons " ⬆ " and " ⬇ " allow everyone two things: first, *group* selection (which can always be broken) in a single block of lines and, secondly, this same block move up or down a line (from the place of the first selected line) to the extent that this movement is not limited by the ends of the list.

The button " ❌ " allows naturally delete selected rows in the list. We can find these lines by clicking on the button labeled "*List of 61 notes*" that restores a list of 61 notes sorted in ascending order. When transferring values of the list, the corresponding cell lines suppressed occurs will be naturally empty.

Sort of the selection.

They are four in number whose last two are each supported by two sub-groups. Besides sorting, and just as moving the selection, they *gather* it in one piece.

1. *Ascending*: the sort is done from left to right (in the list from top to bottom) by increasing order illustrated by the icon "▥" .

2. *Descending*: the sort is done from right to left (in the list from bottom to top) in decreasing order illustrated by the icon "▤".

3. *"A" diatonic*: the sort is done in *A form* order illustrated by the icon "▥". Starting from the lowest note (then located in the middle of sorting), **the next one** is directed "*To left*" (up in the list) or "*To right*" (down in the list). Other notes follow the classic classic alternate design for drawing draw the "*A*".

4. *"V" diatonic*: the sort is done in *V form* order illustrated by the icon "▥". **The lowest note** may be located "*To left*" (up in the list) or "*To right*" (down in the list). Other notes follow the classic alternate design for drawing the draw the "*V*".

It must of course be understood that the sort of selection **is not** doing on *the order of the lines* but on *the number it contains* (separated by a vertical bar "|"). So, to sort (eg in "*V*" form) a series of notes already in order (for example in "*A*" form) will need to analyze the contents of each line for position it in a different order. That is why we should not delete the second column of the spreadsheet (which contains the numbers 1 to 61) because it is refers to the order of the rule.

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Examples of use.

In each display of the dialog box, the list contains the scheduling rule of windchest as reported in the spreadsheet. The examples below are from a complete list obtained by clicking on the button labeled "*List of 61 notes*". The clicks are always made with the left button.

Example 1 : *windchest of twenty-seven notes, just diatonic:*

- Scroll the list down.
- Click on the line " 55 | F♯ ".
- Position the lift of the list at the end and press the [Shift ⇧] key. Then, without releasing, click the last line " 61 | C ".
- Click on the button "❌"; your list is now fifty-four notes.
- Click in the list and type the key combination [Ctrl] + [A] to select all its remaining elements.
- Click on the button "⬛". If you choice "*To left*" in the drop-down list next to this button, the notes on the "*C*" side will meet in the first half of the list. Instead, if you choose "*To right*", you will place the notes on the "♯" side in this first half. Leave the choice to left for this demonstration.
- Position the lift of the list at the middle and click on the line " 54 | F ".
- Position the lift of the list at the end and press the [Shift ⇧] key. Then, without releasing, click the last line " 02 | C♯ ".
- Click on the button "❌"; your list is now twenty-seven notes and contains only notes on the "*C*" side.
- Click on the button nammed "*Sorting!*" to transfer the values of the list in the spreadsheet.

Example 2 : Positif *windchest with forty-five notes, short octave and "cutting back" on an octave and a half:*

- Scroll the list down.
- Click on the line " 50 | C♯ ".
- Position the lift of the list at the end and press the [Shift ⇧] key. Then, without releasing, click the last line " 61 | C ".
- Scroll up the list to see the first octave.
- Press the [Ctrl] key, then, without releasing, click successively on the lines " 02 | C♯ ", " 04 | D♯ ", " 07 | F♯ " and " 09 | G♯ ".
- Click on the button "❌"; your list is now forty-five notes, of course provided with a short octave.
- Click on the line " 01 | C ".

- Press the `Shift ⇧` key, then, without releasing, click the last line " 18 | F ".
- Click on the button "" on taking care of the choice position "*To left*" in the drop-down list next to this button.
- Click again on the the last line " 18 | F ".
- Press the `Shift ⇧` key, then, without releasing, click the last line " 03 | D ".
- Your "cutting back" selected, click as many times as needed (thirty-one times...) on the button " " to set this selection block at the end of the list, after the line " 49 | C ".
- Click on the button nammed "*Sorting!*" to transfer the values of the list in the spreadsheet.

These two examples are chosen to understand the functioning of the dialog. It is programmed to solve a very simple specification of the order of a pipe set so that it can be extremely variable and complex.

The second example is evidently to be viewed as graphical, a much more meaningful following figure. This is made possible, once the values transferred in order from the list of the dialog in the cells of the spreadsheet, by the one named "*Graphical preview*".
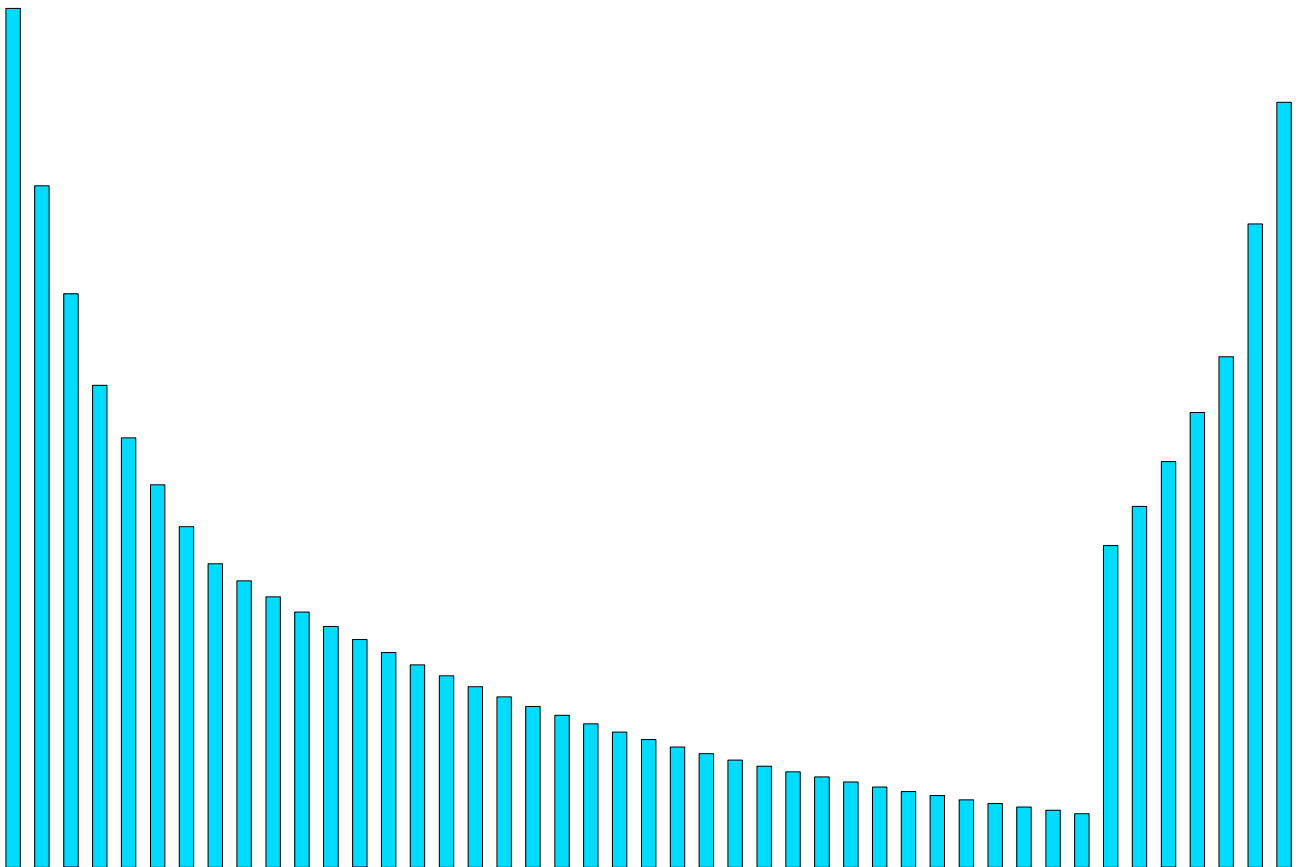
The sheet nammed "Grid of windchest".

It is obviously a bit more complicated in structure, but, if it does not affect the formulas for calculating of borings or grooves width, then just asked to enter the height and thickness of the frame. I still have to clarify here that these two calculations to be very general, will probably be reviewed and refined with the natural evolution of this utility.

By clicking the button " Measures transfer in the order of the windchest ", it transfers all measures of the *enabled* stops of the sheet named "*Measures of pipes*" in the active sheet. The orange cells are automatically filled with the diameter of the sheet that contains them all and in a strictly ascending order. It is like traditional *copy / paste*, except that:

- ✔ The *copy* is not on all notes.
- ✔ The *paste* is not in the same order as the *copy*, refers to the rule of windchest previously established.
- ✔ The *paste* is a second line to compute, among other things, surface borings.

This may take time depending on the power of the machine on which the transfer is executed. During the operation, call button displays "*Transfer in progress*". You earn for doing nothing during the transfer.

The borings are here calculated on the basis of a report to the diameter set arbitrarily to 5. It's a way to make one other that can easily be questioned. Similarly, in the case presented here, the calculation of widths of the bars is set to produce a value slightly higher than the groove they follow, but in steps of multiples of 4, in order to make the flow wood still easier. This "*multiple-step*" is changed into a dedicated cell. The width of the grooves is established by summing the area of all borings divided by the height of the frame to obtain a equivalent sectional area which we add a "W*idths grooves surplus*", sort of *subsistence* for small diameters.

One can well imagine, the functions of cells, add a correction factor for not having grooves too broad or too narrow even to be as close to a practice which we have been able to establish any general, if not specific.

If you chose to change the formulas for calculation of grooves or for calculation of bars, there is no need to copy them as the program takes care of this work on transfer of measures from the sheet named "*Measures of pipes*". By *just* entering the formulas of the first note of the windchest (marked " * "), a simple call to the button " Measures transfer in the order of the windchest " can provide the new formulas to the right places.

In these two areas to determine widths of bars and grooves, there are *many* arbitrary and we must be realized that the formulas of the spreadsheet are there to *help* design; in **no case** for imposing view. So the computer working does not have, here as elsewhere, the intention to replace the one of organbuilder but rather to facilitate the work that is not a free-will which should never be able to discard.

The " Order Rule " button

Is it really necessary to explain the meaning? A simple click is enough to understand the function much appreciate (without much doubt) the fact that *OpenOffice.org* is a suite equipped with a vector drawing module! All that was expressed in millimeters here is a **practical** expression, that is to say at the level 1, and can even change the design to the event, for example, to add a cartridge, then the store, both <u>native ODF format</u> as PDF...

One can imagine that might one day be put automatically circles (or other rectangles...) on these rectangles that would extend a little in another paper size as A4. This is particularly noteworthy that the diameters of said rings are already well established, under windchest order, in the second sheet of the spreadsheet and the algorithm is informed of whether they are pipes are to conveyance or not ... Moreover, without any programming (though obviously with a little software *practice*), we can already get a picture like the one on the next page with a few mouse clicks, which leaves suggests something about a future possible automation...

Once printed, the strips of the current automatic drawing can be cut with a cutter, then pick and glue a few pieces just to train more than one. The report with a pencil on the the denticles's plate is direct, the risk of error is minimal and the rule of windchest still available! The design is furthermore programmed in three different layers named respectively "*Grooves*", "*Bars*" and "*Axes*", which allows intervention over completely independently by the game of caches, zooms, groups or selections.

The rule of windchest.

C - 1
E - 5
G - 8
A♯ - 11
C - 13
D - 15
E - 17
F♯ - 19
G - 20
G♯ - 21
A - 22
A♯ - 23
B - 24
C - 25
C♯ - 26
D - 27
D♯ - 28
E - 29
F - 30
F♯ - 31
G - 32
G♯ - 33
A - 34
A♯ - 35
B - 36
C - 37
C♯ - 38
D - 39
D♯ - 40
E - 41
F - 42
F♯ - 43
G - 44
G♯ - 45
A - 46
A♯ - 47
B - 48
C - 49
F - 18
D♯ - 16
C♯ - 14
B - 12
A - 10
F - 6
D - 3

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Picture of "La Mouette"

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