Advanced Gridmaker settings

When you first come to the page, you can drag the bottom right corner (or just the right side or just the bottom edge) to adjust the grid size.

Once you have the knot you want, you can click the '<u>Stretch'</u> button at the top of the page, which will change the behavior when you drag the grid. Instead of changing the knot, it will adjust the physical size of the knot.

The instructions will be displayed with approximate strand lengths below in text boxes, so they can be selected and copied somewhere to print.

On knots that take multiple strands to tie, it can be helpful to use the '<u>Colors</u>' function. You can input any colors in the following list with a space in between them and depending on the strands needed to complete a knot GridMaker will use them in the order of which they are entered.

Colors List

http://www.w3schools.com/html/html_colornames.asp

If you're using Chrome, you can't directly save the image of the knot grid to be printed (I think you can in firefox), so you first have to click the <u>'View As Image'</u> button. You'll then be able to right click on the image and save it for printing. If you print the image at the DPI set on the page, it'll match the dimensions listed below the grid.

Interactive Options

The *Interactive Options* section changes the behavior of a click within the knot grid. By default, you can click on a crossing and it toggles the coding at that spot and if you click any other buttons, you can click the <u>'Toggle Coding'</u> button to get back to that behavior.

'Set Over' makes the strand going from upper left to lower right an over. 'Set Under' does the opposite.

The buttons with . $\land v / \land X < > K Y$ allow you to fully customize the knot grid by changing how the strands traverse the grid. Each grid location holds one of those values (if you look down in the Save/Load section you'll see those values). '.' is an empty location, '^' is an upper bight, 'v' is a lower bight, '/' places a strand going from upper right to lower left without anything crossing it, '\' places a strand going from upper right without anything crossing it, 'X' is two crossing strands, '<' is bight on the left side, '>' is a bight on the right side, 'K' and 'Y' are similar to a crossing, but instead of crossing there's horizontal or vertical bights. From a Turk's head stand point, that probably won't make all that much sense.

The brush drop down has some preset configurations that span multiple grid locations. So you could select the carrick bend option from the list and click <u>'Set Brush'</u> and now when you click on a grid location you'll place a carrick bend. This feature is very buggy and not totally thought through on my part, but feel free to give it a go.

Since Turk's heads always return to where they started I added the <u>'Remove Non-Loop Strands'</u> button so when I'm designing a knot and I've left a strand dangling I can easily find it. If you click it and your

whole knot disappears, you know something is wrong and you can click 'Undo' and go find it. So in the case of the bowline, that would happen because its just a single strand with ends that don't meet up.

<u>'Extend strands'</u> is meant to help speed up the process of designing a knot. Instead of placing every single piece of the knot, you can just place bights and if they're in the correct place you can click 'Extend Strands' to fill in the rest of the knot.

'Clear Grid' is the only one that doesn't change the behavior of your click, it just clears the grid.

<u>'Remove Strand'</u> will remove the entire strand that you click on. This could be used for example, after creating a 2 stranded Turk's head you could remove one of them and design a more complicated interweave yourself.

<u>'Copy'</u> and <u>'Paste'</u> I recently added and they can definitely cause your grid to glitch out at the moment, but if you click 'Copy' and then click and drag a section of the knot grid, when you click 'Paste' it will have that section as a brush similar to the 'Set Brush' button so you can copy pieces of your knot around.

In reality, you can tie knots that aren't Turk's heads using those buttons. For example, if you download this file, copy all the text in it and paste it into the Save/Load box at the bottom and click 'Load Knot', you'll have a bowline. I just started with a clear grid and used those buttons to place the strands. A bowline doesn't work all that well on a knot grid, but I just wanted to illustrate the flexibility of the grid maker. I used them extensively, for example, while designing this box: http://freakinsweetapps.com/3d-printed-woven-jewelry-box/

The drop down box that says Celtic, a-z, dog bone....Etc:

Those are patterns that I used for various tests. The letters can be used to weave words into the knot like this. The celtic one is just another pattern. They're all part of the <u>'Set Brush'</u> button. Just select one and click 'Set Brush' and hover over the grid to see what it is.

<u>'Half Cycle Stepping'</u> feature allows you to step through tying the knot half cycle by half cycle. It takes into account the <u>'Do half way'</u> and <u>'Consolidate overs and unders'</u> checkboxes as well as changing the starting location.

As soon as you try to change the knot by clicking in the grid or dragging it out again, the half cycle is reverted to the last step and shows the completed knot.

This feature is especially handy when you have to wrap around the mandrel many times on the first half cycle of a given knot; this will allow you to see how many initial wraps are needed.

I added a <u>'Do half way'</u> checkbox above the strand lengths and instructions text boxes. When checked the instructions will show the half cycles for half the knot, then give instructions for tying the rest of the knot going back the other way from the beginning. This can save a lot of time for large knots. By starting in the middle of the strand you don't have to pull as much cord through each under.

I also added a <u>'Consolidate overs and unders'</u> checkbox, which gives the run list as O2 U2 rather than O. . O...U...U (like the original grid maker). I like having both because the .'s (.....) give an indication of how far you must go before crossing over or under.

When you print from the browser a lot of the buttons and text boxes are hidden. The grid is printed on its own page with info about the knot and the instructions printed on a separate page.

For Gaucho interweaves:

You have to understand that the grid maker works by designing a completed knot from the beginning. It's not the best at giving you instructions for interweaving another knot into one you already have tied. That said, if you know what you're doing it can be done. So, if you have a 4B 25P knot, you can double it to have an 8B 50P Turk's which requires 2 strands to tie (the first you've already tied).

use row coding;

To get a gaucho weave, you'll need to set the coding to OOUU (all caps) near the very top of the page next to the Row Coding and Column Coding buttons. Click the Row Coding button (after inputting OOUU) and your knot should now be gaucho. The instructions for the whole knot will be listed in a text box near the bottom, but since you've already tied the first strand you'll only need the instructions for the second.

For Herringbone weaves:

For herringbone the only difference would be to click the "Column Coding" button instead of "Row Coding".