

On Water Lines; Hand and Computer Drawn

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The author's goal is to present a computer method for generating water-lines, an arrangement of parallel lines that cartographers and map engravers of old used to embellish oceans and inland water areas. Water-lining, according to an old textbook, is «...a series of fine lines drawn parallel to the shore line, the spaces between the lines being gradually increased as the distance from the shore increases.» This description, along with others located by this author, falls short of addressing the procedure the engraver had to follow when there was no room to keep on extending the lines. In this situation lines collide with others and must associate into new ones or disappear. Dealing with colliding lines was a simple task for the engraver of old, —which perhaps explains why the problem is not mentioned in the old texts—, but is significantly more complex for the computer of today. A historic narrative brings together descriptions such as the transcribed above and the few other references to this very decorative artifice this author could find in the bibliography. The vector-based computer program and the colliding lines solution are outlined, and plots are used to illustrate the various options available for patterning the water areas and for the distribution of lines. Also discussed is an altogether different raster-based approach, as well as the potential applications of the vector-based method in the fields of Automated Cartography, Geographic Analysis, and Pattern Recognition.