

GRAPHIC PATTERNS AND HAND COLORING FOR MAPS, CHARTS, AND DIAGRAMS

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Most of the methods for placing color or designs on maps, charts, or diagrams are well known and utilized daily, but two of those described here are new or little known. The common materials used for coloring are pencils, ink, water colors, and wax crayons. Colored pencils of all shades may be procured with thick or thin lead from several different manufacturers. *Mogul* colors are washable with a wet brush and give uniform color. The technique of rubbing down pencil colors is not generally used, but the effect is well worth the effort. A smudge stick of tightly rolled paper similar to that used by artists is satisfactory, but *Kleenex* and fingers are found to be more satisfactory. Most pencil colors fade with age, rub off easily, and cannot be considered very permanent.

Colored drawing inks when diluted make excellent colors, but they dry quickly. Brush marks, contact lines between fresh and dried color, and overlaps can rarely be avoided and a blotched or streaked appearance results.

Water colors of the school-room type are the most frequently used. The same difficulty, though to a lesser degree, is found with them as with colored inks.

The best type of water color for map work is that used for coloring photographs. Eastman Kodak Co. makes a book of 12 colors. Each color is on a thin cardboard measuring 3.5 x 7 inches and perforated into strips which may be detached and soaked in water. I use a strip with a certain amount of water and keep a standard color in glass vials for use at any time. Brush marks and blotches are avoided because dried areas may be overlapped without showing. *Peeries* is another brand of color similar to Eastman's. The color of either brand may be removed with *Zonite* or ink eradicator and another color substituted if desired.

The use of ordinary good-grade crayon such as *Crayola* is my first choice for coloring, because of its ease of application and final appearance. Rubbing down the crayon after application is the secret of the good results obtainable with it. After application *Kleenex* on a finger is used to rub down, smudge, or burnish. A pencil, stylus, or small cylindrical object inside *Kleenex*, or an artist's smudge, may be used for corners or small areas. Heat developed by the rubbing tends to spread the wax color evenly. The result is a glossy slick surface which will not smear, rub off, or gather dust, and which is essentially waterproof. Printing shows through the color but ink cannot be added over it. Color may be removed with benzene or carbon tetrachloride.

The second major purpose of this paper is to describe the use of woven wire screens or similar surfaces for stippling in black and white. Dozens of types of woven screens were tested but the most adaptable and easily obtained were window screens of various mesh sizes. Procedure is to place the screen under a heavy carbon paper with the carbon side up, and then place the tracing paper over it with the face side down. A spoon or broad rounded-edge spatula is firmly rubbed over the area to be stippled. The carbon leaves an imprint on the front side of the tracing paper, which can be reproduced photographically or on a blueprinting machine. Different sizes of screens

and different types of weave give different designs. Carbon cannot be used on tracing cloth or on paper which is not transparent.

Rows of periods set up on a linotype and then consolidated into a single plate can be used instead of a screen and are more satisfactory but more expensive. Hyphens may also be used for a plate. By turning the plate or screen diagonal patterns may be obtained. Spacing between periods gives another pattern.

Another method of obtaining stippling, line ruling, and many other effects is the use of designs printed on a transparent sheet backed with a film of paraffin. Preparations of this type are sold under the name of *Zip-O-Tone* and are manufactured by Paratone Co., Chicago. Inking may be done over *Zip-O-Tone* and the legibility of inking underneath is not impaired by its application.