

TYRO TOOL OF THE MONTH - THE ERASER

Erasers are important to woodcarvers. Woodcarvers and pyrographers use graphite from pencil leads or tracings to mark wood surfaces with reference lines, outlines, designs, and the like. Many of these pencil or graphite markings are carved out or burned away, but remaining stray marks need to be removed. In addition, the process of preparing to carve or burn may require corrections or changes in the pencil markings. These adjustments and removal necessitates erasure without damaging the wood surface. Pencil marks may spoil the appearance in the finished work. Such marks may become more apparent and permanent after finishing with stains, sealants, paints, or other finishes.

In this article we follow an historical trail of breadcrumbs to this month's tyro tool - the eraser. More specifically, that trail leads to lead marks erased by breadcrumbs. This tyro was befuddled, but the Master Carver explained that in the 18th century crustless breadcrumb was the chief material used for rubbing out pencil marks. Then in 1770 there was a happy mistake. Edward Nairne (a man from Sandwich, England no less) mistook a bit of caoutchouc (gum elastic) for his breadcrumb eraser and discovered it worked better. Since caoutchouc (pronounced "cow chuck" - who would know this?) is a mouthful, this *gum elastic* material used for rubbing out pencil marks was soon renamed - **rubber**. The man from Sandwich knew which side his bread was buttered on; he sold half-inch cubes of "rubber" erasers for the then-astonishing price of 3 shillings (~US\$24 today). *Say... isn't Nairne a Scottish name?*

In 1839 Charles Goodyear stabilized rubber by vulcanization (heat plus sulfur). This produced a durable material that quickly became indispensable, with rubber displacing breadcrumb as the eraser of choice. More modifications and formulation improvements were made, leading in the early 20th century to the modern erasers that are still with us today.

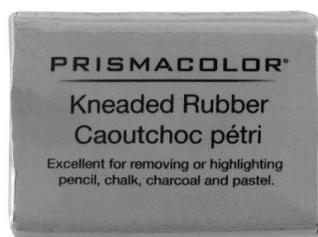
Let's look at four common erasers for dry removal of pencil markings from wood or paper. The Art Gum, Pink Pearl, Kneaded Rubber, and Magic Rub erasers are all made by the writing behemoth Newell. If you own an eraser, chances are it was made by Newell.



The ARTGUM® eraser has been around since 1903 and was historically part of the Eberhard Faber Pencil Company, then of Brooklyn, New York. This artist's gum eraser is made from *factice*, which is a vulcanized vegetable oil. This eraser is soft and crumbles as it is used, carrying graphite away in the crumbles, but requiring careful brushing to avoid making extraneous marks from those crumbles. The softness makes its use imprecise.



Also created by the Eberhard Faber Pencil Company, the ubiquitous Pink Pearl® eraser was used as a trademark as early as 1910. Like most erasers, the Pink Pearl has factice as a major ingredient, but has also been described as containing rubber, antioxidants, softeners, pumice and colorants. It is labeled "Latex-free," suggesting that a synthetic rubber is used. Pumice is an abrasive mineral.



The Kneaded Rubber eraser, like the Pink Pearl, has factice as a major ingredient along with rubber, antioxidants, and pumice. However, it differs by using calcium carbonate as a filler, mineral oil as a softener, and also by using a different colorant. Unlike the other three erasers, which have their names printed directly thereon, the printing in the above photograph is on a plastic wrapper which is removed for use. Kneaded erasers are easily molded and shaped for tight detail erasing and become infused with the graphite being removed.



The Magic Rub® eraser was created by Faber in 1954. Unlike the other three erasers, Magic Rub does not contain factice. Instead, its composition by weight is reportedly 30% poly(vinyl chloride), 35% CaCO₃ filler, and 35% dioctyl phthalate plasticizer.

So what's the rub? The pumice contained in the Pink Pearl and Kneaded Rubber erasers has been shown to cause the surface of paper to abrade and likely has the same effect upon wood. An increased resistance to wetting of paper is also affected by contact with the three factice containing erasers, but not so for the Magic Rub vinyl eraser. This may translate to uneven application of water based paints and finishes in areas where Pink Pearl, Artgum or Kneaded Rubber erasers have been applied. Also, subtle color changes may occur whether by abrasion from pumice or by transfer of colorant to produce a grayer, dirtier appearance in areas treated by the factice erasers.

In a study of the effects of erasers upon paper surfaces those treated with the Magic Rub eraser suffered negligible abrasion and color change, and had no change in either surface pH or wetting ability. The Pink Pearl eraser had the worst effects due to abrasion, surface color alteration, texture changes and decreased wettability. See E. J. Pearlstein, "Effects of Eraser Treatment on Paper," Journal of the American Institute for Conservation, 1982, Volume 22, Number 1, Article 1 (pp. 1 to 12).

This tyro has a Magic Rub and a Kneaded Rubber eraser in his kit. Pinky is reserved for erasing writing where I don't care about residue or abrasion. The Artgum just feels too mushy for precise use and does not have the virtue of being moldable to fit tight areas.

Officemax sells all four erasers:

Artgum - \$0.99, Pink Pearl - \$5.49 for 3, Kneaded Rubber - \$3.09, Magic Rub \$1.49

Fun fact - in 1932 Albert Dremel of Racine, Wisconsin, invented an electric eraser. By using an eraser on a rotating chuck his device was less likely to damage paper because speed replaced the pressure needed for mark removal. Dremel later developed the line of small rotary power tools that bear his name and which are used by woodcarvers for wood removal, texturing and a plethora of other uses.