

Temporary Masks For Aqueous Paper Treatments

MASK 1

While treating a collection of Jasper Johns prints I was confronted with disfiguring stains and water soluble colored pencil signatures. Six lithographic prints from the *Fragment According to What* series had been stored in wooden drawers and the dark discoloration formed patches of brown that were striking through to the front of the image.

The *Fragment* prints were "Bent Blue", "Leg and Chair", "Hinged Canvas", "Bent U", "Coathanger and Spoon", and "Bent Stencil". These had been printed at Gemini in 1971. The series was printed on Arche paper which is very absorbent. Along with the crisp, complex inking with up to nine colors, there were inks that had a metallic sheen that tested stable to water but that could alter their appearance if wet.

Two of the prints, "Bent U" and "Bent Stencil" had pencil signatures that tested as stable to water. The green colored pencil signature on "Coathanger and Spoon" also tested as stable. These prints were treated in the same fashion as those discussed below, except that the temporary mask was omitted from the process. The other prints were signed in a purple or blue colored pencil that was readily soluble to water.

It was determined that the prints could only be treated if a suitable, temporary mask could be found. Several mock-ups were tested using Arche papers and also blotters because of their absorbency, prior to actual treatment. The following temporary mask was used in these treatments. The verso of the print, behind the soluble signature, was coated three times with methyl cellulose, allowing each layer to dry before applying the following layer. The methyl cellulose coating served two functions. The Arche paper is soft-sized and required an isolating surface to protect the paper from the masking material and secondly, to allow the masks' safe removal without skinning the Arche paper.

After the methyl cellulose had dried, a coating of Winsor Newton "Liquid Mask" was applied to the area. Due to the isolation layer of methyl cellulose, the friskit did not come into contact with either the signature or the paper. The material contains ammonia and natural rubber. Although these are not typical conservation rated materials, they were applied over an isolating layer and only briefly during treatment and then removed. It could also be argued that ammonia is often used to adjust the pH of water baths and that rubbers are present in many dry-cleaning erasers used in paper conservation. The "Liquid Mask" friskit is a material used by watercolorists to coat paper intended to remain untinted. The traditional application is to coat areas of watercolor paper with the friskit, execute the watercolor painting, and at the desired time remove the friskit to expose the white paper. In this case, it was used to prevent water from reaching the soluble signature on the recto of the print.

A general description of the overall treatment steps follows although each print was individually treated and there were variations according to the requirements of each print. The print was dry cleaned as possible in non-image areas. The methyl cellulose isolating layers and the mask were applied on the verso of the print. The print was humidified in a cool chamber overnight to saturate the inks and paper so an accurate test of solubilities that would be more reliable could be performed. The print was float washed in a series of baths with the pH adjusted with filtered calcium hydroxide to a neutral pH. The print was bathed to reduce acidic and discoloration products and then allowed to air dry. The verso only was sprayed with 3% stabilized hydrogen peroxide, concentrating most of the application on the discolored areas. The print was float washed as above, and allowed to air dry for evaluation. Some of the staining remained so another application of the 3% hydrogen peroxide was applied and rinsed. After complete rinsing and drying the verso was sprayed with a 1/2% solution of sodium borohydride to reduce any effects of the peroxide and to stabilize to paper. Whenever possi-

ble, sodium borohydride is the preferable bleaching technique, however, it was not effective on these particular stains. Whenever possible, sodium borohydride is applied after using hydrogen peroxide as a bleach.

The mask material and methyl cellulose sizing was removed easily from the verso. The mask material rolls off with a little pressure or a crepe eraser can be used. The methyl cellulose was removed with a series of damp swabs. The print was again rinsed and dried. During the entire treatment, the recto was never wet.

Due to the masking material the verso that was covered was slightly darker than the surrounding paper, but this was considered an acceptable compromise. There are many instances when this technique should not be used. Obviously if the paper is very discolored in the area to be masked, especially on the recto, the resulting change in paper tone around the mask would be disfiguring. It is also important to carefully consider the potential for distortions due to one area not being wet and surrounding areas of the mask being wet. However these two cautions are standard considerations for many local treatments on paper artifacts.

MASK 2

Another very simple mask is the use of propyl or butyl alcohol to coat an area during aqueous treatment. These alcohols temporarily bond with the cellulose and repel water for a limited time. The [-OH] group attaches to the cellulose and the aliphatic end temporarily repels water. Propyl alcohol is soluble in water but it takes awhile for the water to equilibrate with the propyl alcohol and is an effective resist during that period. Butyl alcohol is not soluble in water unless mixed in 8% or less concentrations. Various concentrations can be manipulated for a given situation to achieve optimum timing and results. By varying the number of applications of the alcohol resist between baths or varying the duration of immersion, the alcohols can provide an effective temporary resist that is eventually replaced with atmospheric moisture. Obviously, the area to be masked should be tested and can not be soluble in alcohol.

Tests are also recommended prior to, and alongside the treatment. I coat a similar paper with a soluble red watercolor. The alcohol resist is applied and put in a separate bath and timed. When the water begins to replace the alcohol in the mask, the red will begin to bleed. The timing should be carefully noted, and the actual artifact should be pulled out prior to that time and re-coated with the resist prior to another immersion. This is a mask that is very benign but requires greater vigilance during treatment.

NOTE

1. This treatment was first mentioned during an A.I.C. talk in 1989 and then published as a footnote in *Studies in the History of Art*, 41, Monograph Series II. National Gallery of Art 1993, p.126.

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