

Friday Morning, June 1, 1990
Special Session on the Cleaning of Paintings

THE MEASUREMENT OF SOLVENT EFFECTS ON OIL PAINT FILMS

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Abstract: The cleaning of paintings, including the removal of dirt, varnish and previous overpainting, is one of the critical processes of painting conservation. The use of solvents is, and most certainly will continue to be, an indispensable tool in the cleaning of paintings. This article documents many of the effects that solvents can have on paint films. We present results of chemical analyses of solvent leachates, and data for changes induced in color, gloss, thickness, and weight by several solvents and methods of exposure for aged oil film samples. Three groups of samples were tested. These include 5, 10, and 50 year of oil paint films containing lead white, raw sienna, vermilion, or a red azo dye as pigment. The films were exposed to hexane, toluene, acetone or ethanol. The solvent extracts were analyzed by gas chromatography and combined gas chromatography/mass spectrometry. Changes in weight, thickness, color and gloss were also measured. The amount of extracted oil components and changes in weight, thickness, color and gloss varied with the solvent, pigment, time of contact, and the age of the sample. In addition, aged natural varnishes on paintings were analyzed for the chemical components of oil. The varnishes were collected wet by swabbing with cotton applicators or dry by scraping in layers with metal scalpels. The results are used to evaluate the effects of solvent based varnishes on the paint films to which they are applied. The results of these and future experiments will be used to generate guidelines for the choice of solvent systems which minimize the effects of the solvent cleaning of paint films.

~~WHEN TREES IN BLOSSOM BECOMES WINTER: PROBLEMS IN CLEANING A REWORKED PAINTING BY ERNEST LAWSON~~

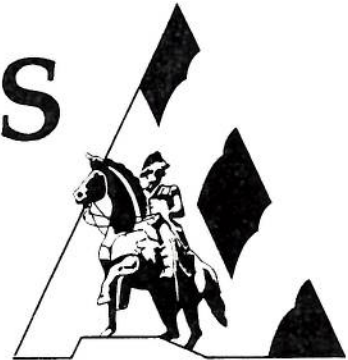
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~~Abstract: An early twentieth-century landscape by Ernest Lawson was brought to the laboratory to prepare for exhibition. Conservation records listed only a surface-cleaning and revarnishing since the painting was purchased from the artist in 1923. After unframing, the edges of the painting revealed that the snow had been laid on the a varnished spring scene. Remains of exhibition labels and the curatorial files suggest the reworking occurred in Lawson's studio, just prior to purchase. The snow was comprised of numerous local applications of white, blue and violet paint. The discolored natural varnish of the spring scene showed through gaps and pits in the reworking. In many cases the reworking was merely on fine brushstroke lying on top of a deep~~

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