

Temperature Sensitivity, Pressure Gradients and Explosions of Sealed Backing Boards for Paintings

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Introduction

Eet eez vell known zat zee paintings zey must breeze, or ze weel suffocate to desse! And more zey eez zee poorer for eet, for zee carnation of zee flesh turns zee most annoying shades of purple and zee cheeks puff out to an astounding degree when deprived of zee air which eez zee painting's most natural vont to suck¹.

This quote from an obscure 17th century Dauphinoise treatise on the restoration of paintings chides those restorers who would seal, stopper, plug, dam, shield or otherwise impede the natural flow of air through their easel paintings. That paintings must breathe, and breathe deeply, is an accepted part of European Cultural Heritage (ECH); however, a worrisome trend has recently been introduced from North America which could end this most natural flow of the dust of the centuries; that is to say, the sealed backing board. High performance temperature-pressure testing which was monitored by an academy of experts so illustrious that we cannot even print their names herein, has proven beyond a doubt the dangers of attaching these plastic contraptions to the backs of our European cultural heritage.

Experimental

In order to go to the source of the problem, several paintings were prepared for testing at the Canadian Conversation Institute in Ottawa. Several were not sealed. To several were attached wooden planks with holes and semi-permeable membranes, and to others were attached those despicable corrugated plastic backings with foam tape around the edges which I do hate so. After ageing in the men's shower room of the local YMCA over a period of 540 hours, scrapings from the backs of the paintings were extracted and subjected to GCMS, HPLC, GCI, FTIR, EDX, XRES, NMR, PDQ, HURL, DOOFUS, DWEEB and WEENY with microprobe.

Another painting, an historical portrait, was hermetically sealed with a steel backing panel welded to the painting using a Popeye 14 Laser Cannon Mega-weld optical welder. The advantage of this device was that it created a permanent seal even on non-conductive surfaces like the wood of a stretcher. The painting was then placed in a meat locker at -140°C for three weeks followed by three days in the smelting bay of a blast furnace of a local steel mill where temperatures reach an average of 1750°C. These conditions closely imitate the temperature fluctuations of the Ottawa climate, an extreme which our European Cultural Heritage (ECH), God forbid, should never have to endure.

In order to test pressure gradients, another painting with a sealed backing board of a bullet-proof material obtained from the Royal Canadian Mounted Police was strapped to the underside of the Concorde, canvas side facing out, for 100 transatlantic flights for a period of approximately 300 hours of accelerated ageing at Mach II. The painting was equipped with a fresh air shunt through a polycarbonate conduit material which pumped air into the space behind the painting at high altitudes in order to approximate air pressures at sea level.

Results

Of the first round of tests in the shower room of the YMCA on Argyle Street, it was found that a high percentage of *Chenopodiaceae*, specifically *Spinacia oleracea* (the common spinach), was propagating behind those paintings with sealed backing boards. This vegetable matter was subjected to GCMS, HPLC, GCI, FTIR, EDX, XRES, NMR, PDQ, HURL, DOOFUS, DWEEB and WEENY with microprobe in order to confirm its identity but without success. However, it was through consultation with the principal chef of the Chateau

Laurier Hotel that a positive identification was made. The growth was difficult to eradicate using anything other than a spray of 10% Kraft Thousand Islands Salad dressing/vinaigrette. This technique has been previously discussed². The un-suffocated paintings did not contain any of this vegetable matter but did have a liberal distribution of athlete's foot fungus (*tinus curea*), particularly in the crevasses between the canvas and the bottom stretcher bar, which was cured with three week regime of Tinactin cream³. The paintings with backings incorporating semi-permeable membranes were discarded since the membranes were found to allow water to pass inside, but not back out. After swelling to alarming proportions they were removed from the showers by the local police. CCI conservators trained in St. John's Ambulance resuscitation techniques were unable to revive them and their paint layers fell off after one week. Their remains were given a decent burial in the YMCA towel bin.

The suffocation phenomenon noted in the treatise of the abbé Gamboge, although not observed to date in any actual painting, has been reproduced in the laboratory which is more important in terms of scientific hysteresis.

We are not certain what happened to the painting strapped to the fuselage of the Concorde. We suspect that the pressure gradients between the space behind the painting (sea level) and the low pressure of high altitude flights may have provoked a rapid diffusion of air in the recto direction, i.e., an explosion. We did receive confusing reports from a weather office in the Azores of a mysterious shower of paint flakes. It just goes to show that if we did not dislike backing boards so much, the painting would not have been there in the first place. Note: pressure does not blow up paintings; people blow up paintings.

Conclusions

The following conclusions are multiple choice. You may choose from the list below:

- a) I don't have any _____
- b) I am sorry but my dog ate them _____
- c) conservation means never having to conclude _____
- d) was that scatology or eschatology? _____

Appendix

Removed when I was 16.

References

1. L'abbé Gamboge, "La patine des âges et la restauration des chefs d'oeuvres des vieux maîtres jusqu'aux crottes de nos jours." 1685. Unpublished treatise in the Bibliothèque national de France.
2. Stronzo, Paolo di, "The Poop on Baking Boards," *Studies in Mobility*, 31 (1994) 241-245.
3. LaCroix, Pierre, "Investigations aux endroits humides à l'aide d'un macrosonde," *Interstices*, 17 (1969) 69-96.