Tear Repair of Cotton Canvas: A Variation of the Heiber Technique

by Linda Waters

At the Tear Repair Workshop at the J. Paul Getty Museum in 2004, Professor Heiber kindly discussed with me in some detail the specific process of thread by thread tear repair for unpainted cotton canvas. There are some distinct differences in the technique compared to that for repairing linen – and the WAAC Editor thought it useful to disseminate them more widely.

The aim of the technique for repairing a tear in unpainted cotton is to create a join that is not, when viewed from the front of the painting, visibly saturated with adhesive. This is definitely easier said than done! Below, in point form, is Professor Heiber's advice.

Use water alone to groom the threads prior to joining, rather than 5% isinglass. Cotton is highly absorbent and thus stains very easily if the glue is used. It quickly absorbs the adhesive, and in doing so can also become quite stiff.

Pull the threads to the reverse of the canvas. One may need to lengthen the threads a little more with moisture and heat in order to be able to join them in the fashion described below.

Using tweezers twist the threads together perpendicular to the canvas, and apply the adhesive (Heiber's starch/isinglass mixture) between the first twist. In this way, the adhesive join is above the plane of the back of the canvas, and is thus undetectable from the front.

Do not release the tweezers as the threads will untwist. Instead, apply the heated spatula to the tweezers; this then transfers the heat to the join whilst the threads are still being held together.

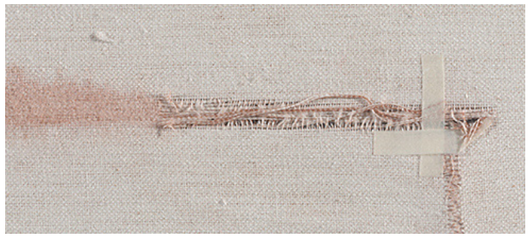
Finally, you may need to loosen the tweezers with a dental probe, as they tend to stick.

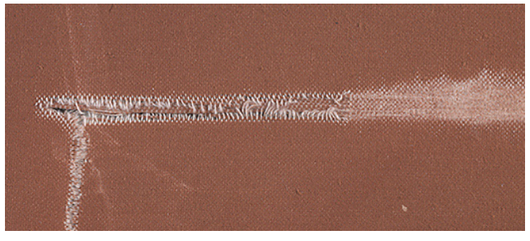
These instructions came at a good time, as I was working on a tear in a 20th-century painting on a medium weight basket-weave cotton duck. The tear was L-shaped, measuring 23 cm. horizontally by 10 cm. vertically.

The paint layer consisted of lightly bound dry pigment, merely rubbed and scrubbed into the support. Thread-by-thread tear repair was the only way one could reinstate the canvas, given that the weave was entirely visible and such an integral part of the painting. I repeatedly practised my technique for both tear mending and inpainting on a number of mock-ups prior to working on the original.

I endeavoured to use the twisting/tweezer technique above, but found that I simply did not have the skill to do it as Professor Heiber had described. (Professor Heiber mentioned that even he found it difficult to obtain an invisible repair.) I did, though, spend much time manipulating and lengthening threads in order to place the joins at the back of the canvas over the opposing thread below.

The tear was held togerther during treatment by masking tape sutures, the center of the adhesive side covered with Japnaese tissue to keep it from sticking to the loose threads.

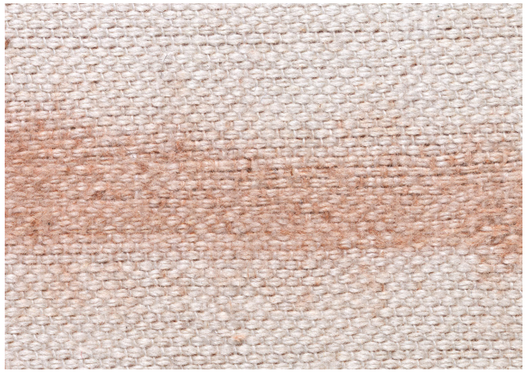




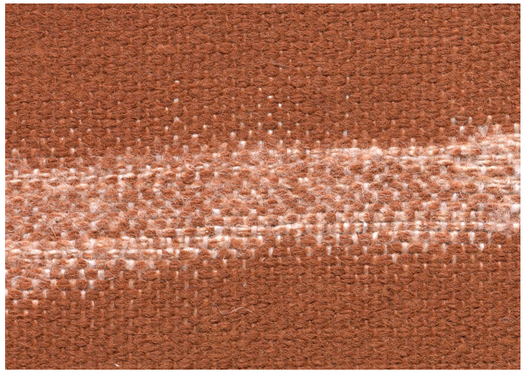
The extra manipulation of the threads inevitably meant the occasional breakage occurred. I dealt with this by the incorporation of another length of thread, the join for which was once again, strategically placed so as to be hidden from the front.

The cotton fibres for canvas are heavily beaten and are therefore quite short - you find yourself pulling out the occasional tuft of short fibres that have not withstood manipulating! The warp and weft threads had quite different characteristics – the weft was a fatter but less dense thread, and the warp, thinner and stronger, and each demanded a slightly different way of handling.

I found that all threads became quite fluffy with prolonged reweaving and manipulation, and that initial grooming with very dilute starch paste instead of water alone worked extremely well. This held the fibres in each thread together beautifully, such that they could then withstand the localised friction from reweaving, and also the later inpainting with dry pigment.



The pigment was mobile in water and travelled along the threads when they were wetted for grooming, staining the back of the repair.



The original pigment was almost imbibed in the fibres. The misalignment of the pigmented portions of the threads is partly due to having stretched them for reweaving,

I constantly used a thread-counter to check my progress as I worked. The tear was L-shaped and quite large, and having started from the end of each side I was able to complete the repair at the corner relatively easily.

As for the inpainting, the dry pigment sat both within and on top of the canvas, making it very hard to emulate the surface. After much trial and error – and discussion with colleagues from other conservation disciplines; always a good thing! – I used a mixture of fine bole and ground pastel applied with a tamping motion using a very fine, broad, stumpy, worn sable brush. The nature of the brush was so critical; this one held enough material, both fine and coarse, to allow me to transfer it easily onto the canvas threads, and then work it in a little to achieve a result similar to the original paint/stain.

My technique developed as I worked, as is the nature of things, even whilst working on the original. It was during inpainting that I discovered the beneficial effects of having started using the starch paste to 'consolidate' the fibres. Those areas coated with starch were less disrupted by the necessary vigour of the action I used. It was disheartening to see one's careful repair work become more visible as inpainting progressed.

However, the end result means the painting is displayable, and with careful lighting, even I have trouble finding the site of the repair. (*I've seen this repair and it is stunningly good. Depressing, actually. Life was easier when you could tell yourself that a repair like this was not humanly possible. Ed.*)

Note: During the treatment a colleague and I developed a variation of Prof. Heiber's trekker that pushes rather than pulls, which allowed me an unobstructed work area. This will be described in a later *Newsletter*.

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