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td&t

2017 Summer

theatre design & technology

Flexible Iron: Fabrication of an "Iron" Corset from an Unlikely Source

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Figure 1 – Padded dress form

Background

In professional theatre I would be asked at least two to three times a year to make a piece of armor, helmet, or other large metallic accessory for stage. I found myself always searching for new materials to make a lighter, more comfortable, and stronger piece that would withstand the use and abuse of multiple performances. I tried numerous materials, at every price point, coupled with coatings/treatments that were water-based, low-voc, and as low-toxicity as possible. In my first year in academia, I taught a costume crafts class where we made theatrical armor. In professional theatre, I would have ordered some pricey thermoplastic or industrial felt that ranged in price from $125-150/yard. I quickly realized that my budget in academic theatre was not going to accommodate the use of these materials. This led me to create "metal" samples using a felted sweater in place of the other more costly items.

I love this project because it combines time-tested techniques I learned from designers like Lewis Brown with new-school and much less toxic materials. I used a combination of coatings like NovaColor Tintable Texture Paste, Rosco FlexBond, and FoamCoat. I used untraditional costume materials such as a felted sweater, pop-rivets, and metal cable in the piping to create this corset.

Step-By-Step Process

1. Felting: I chose a lightweight sweater that is 100% wool. After felting, often sweaters shrink in length so, to keep the materials consistent throughout, I cut the arms off and seamed them to the bottom of the sweater. Any other scraps that were trimmed off were saved for other purposes (to follow...). To felt the sweater: wash it on HOT with about a cup of detergent (I use free and clear for actor allergies) in the washer (with a spindle if you can) then dry it on high in a dryer repeatedly until it is felted to desired thickness.
2. I padded out a dress-form to the desired finished shape of my piece. I made a positive mold and added all dimensional elements I wanted to see in my finished piece. I used silk pins so they would be invisible. I layered towels and batting, wrapped it in ace bandages, and then covered the form with 2 layers of old leggings. I defined the waist with elastic to get a "nipped in" look (Figure 1).
3. I wet the felted sweater so it was damp and stretched the sweater over my form and pinned it with long ball headed pins (for easier extraction later) so the sweater stayed in place as it dried.
4. I layered on my first coat using FoamCoat with a chip brush to really push the medium into the felt (I would NOT use this again: see later comments in step 11). When dried I sanded the whole piece with a power sander using 300 grit sandpaper, which was enough grit to knock down any undesired texture but not gritty enough to add texture (Figure 2).

ıre 2 – Felted sweater with FoamCoat

Figure 3 – Piping glued on

lext, I layered on two coats of NovaColor tint-ble texture paste, sanding in between coats, until felt sturdy.

hen I drew my design onto the piece and cut the ront and shoulders open, taking the corset off the rm. I trimmed the edges to clean finished lines sing craft shears.

sing a hand drill, I drilled holes for the front clo-res and riveted these on with pop-rivets because the rivets' combination of low-profile and high rength.

made piping with metal cable in velvet for edges d glued it on with flex glue. (Figure 3)

/ith a fine-tipped squeeze bottle and the leftover xture paste I piped faux rivets onto parts of the esign and over my pop-rivets on the front so ey meshed with the design. I let these dry for a w hours then sanded the rivets flat!

hen I used an Olfa 9mm break away blade and sharp pair of smallish shears to create the cut-uts. I had to be careful about the mold under-neath the piece when cutting.

11. Because I used FoamCoat, which is NOT flexible, I had areas of cracking. I would not use this again on a piece of this nature. I decided to do a final coat with Rosco FlexBond, a thick, clear, sandable flexible medium. This allowed an overall skin to stretch, keeping the FoamCoat from cracking.
12. I began painting with a layer of dark green acrylic paint (by NovaColor) brushing it all over the piece, and using a scrap of the felted sweater I stippled in highlights and lighter colors.
13. For aglets, I cut a triangle out of the felted sweater, glued it wrapping it around petersham, and then coated it with texture paste and faux rivets. Using the cutouts at the shoulders, I fed the petersham through to create an adjustable shoulder point.
14. I covered rivets and closures on the inside of the corset with stretch velvet. (Figures 4-6)

Pros and Cons

Pros: Flexible and comfortable to wear, soft on the

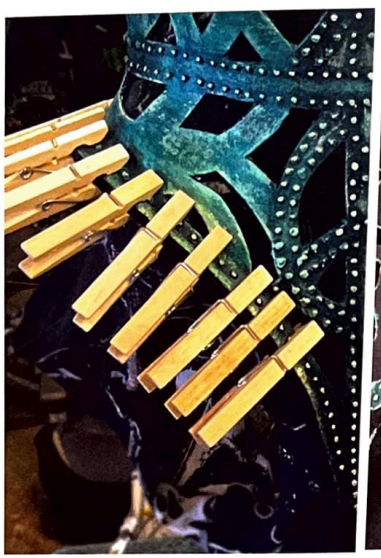

Figure 4 – Front of finished corset

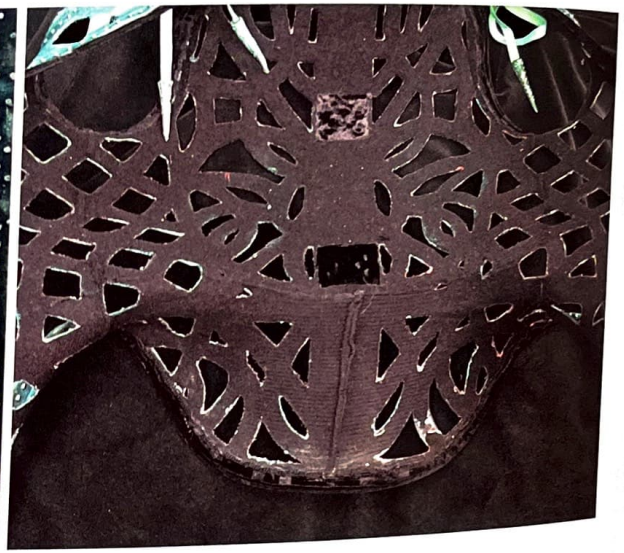

Figure 5 – Back of finished corset

Figure 6 – Finished corset

inside, should have a long life, and resist "denting," will withstand heat (better than thermoplastic in hot warehouse).

The sweater is felted so edges don't ravel. The sweater is already in the shape of the torso even after felting. COST! Industrial felt is 3,000 percent more expensive than sweater ($150/yd vs. $5), thermoplastic is 500 to 1200 percent more. It's much easier to cut out coated sweater than cutting thermoplastic. I used 100 percent water-based coatings and was able to saturate the material (unlike thermoplastic). No need for respirator or advanced protection from materials.

Cons: The drying time required to layer up coats of texture paste and sealant can take many hours. A piece this thin needs extra support, which is why I added a busk and cable around the perimeter. If I had no busk, I would use steel bones. Weights of sweater vary after felting, so you must felt a few sweaters to find ideal weight. I may use a slightly heavier sweater next time.

Darzee the Bird Pupp

By Rachel Buechele
Florida State University

In Florida State University's produc
Garden of Rikki Tikki Tavi, the costu
rendered beautiful and elaborate char
brought life to the animals. The characte
Bird was portrayed as a puppet with blink
was a challenge to create because the pupp
perched on top of the head of the actres
Darzee. The eyes of the puppet were
blink and were operated by the actress.
required a trigger mechanism attached t
wooden control handles (Figure 1).

The bird's body and head were consti
thermoplastic materials including Wo
the body and Veraform for the head. A m
was made over a mock-up puppet to deter
eral shape and to plan layout of seams an
The thermoplastic was then manipulate
and molded over the mock-up, which w
with aluminum foil. The pieces were con
two parts so that the form could be rem
the inside of the body and head. The head
completely sealed, even in the finished
puppet, so that mechanical issues could
and corrected during the run of the show

The puppet's eyes are plastic, hemisphe
heads of nesting sizes: two for the eyeba
the eyelids. The eyelids were cut down sl
a Dremel, leaving flanges on each side o
head where the holes were drilled, and an
flange at the top center of the eyelid for the
spring to connect. The diameters of the h
sides are exactly the diameter of a heavy c
The eyeballs also had holes drilled across t
close to the edge, with a drill bit that w
larger than the coat hangers diameter. Ve
pegs were used to support and level each
eye when installed. The eyeballs and ey
then nested together with a wire-pin ins
the horizontal axis, leaving 3" for the b
tures. The wire was then adhered into the e
ing J-B Weld Epoxy while positioning the
in a horizontal orientation with the eyelids

Creating the eye mechanism was the m
cult aspect of the design. Approximately 3
tubing was inserted into the body at the b