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## Reupholstery: A Guide for Prop Masters

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# REUPHOLSTERY: A GUIDE FOR PROP MASTERS

A Thesis

Submitted to the Graduate Faculty of the  
Louisiana State University and  
Agricultural and Mechanical College  
in partial fulfillment of the  
requirements for the degree of  
Master of Fine Arts

in

The Department of Theatre

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B.A., California University of Pennsylvania, 2009  
May 2015

To Malcolm Callery, my mentor on my very first upholstery project. Thank you for inspiring me to build bookshelves those actors can climb.

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## **ABSTRACT**

Upholstery is something that is often looked upon as a daunting task. With a full guide to reinforcement for stage use, options in foundations, and charts to compute fabric yardages, this thesis will provide professional prop masters with a guide to heighten their standards of upholstery onstage. Featuring options and ideals for varying skill sets; it will assist prop masters with more information regarding the topic with options particular to the theatrical profession. In lieu of an expansive library of upholstery books that feature a variety of techniques, the information included in this document will serve as a supplemental guide of the best practices for theatrical use.

## 1 INTRODUCTION

As a prop master on a multitude of productions, I have come across many upholstery projects. The art of recovering an antique or vintage chair has become second nature to me: I now have gained the appropriate skills that allow me to apply specific choices available to a particular furniture piece. However, my skills were not always at this level. Despite academic courses taken at the undergraduate level and actual productions realized, I shied away from the act of upholstery. I believed that since I lacked the skills, it was an endeavor that should not be attempted. The realization that I needed guidance in this area came in 2010, when I approached my previous advisor in my undergraduate studies about a crash course in upholstery. Malcolm Callery at California University of Pennsylvania agreed to a two-day workshop on the university's campus, and thus began a beautiful relationship between the upholstered stage furniture and myself. However, after accomplishing several upholstery projects, I realized that there was not a publication for prop masters to follow. This is true of several subjects for the prop master creating objects for stage use: while there are great guides on how to make fake food, there are not guides for the common task of creating upholstered stage furniture.

There are numerous books on upholstery available to learn the art of upholstering. Texts such as *New Essentials of Upholstery*, *Essentials of Modern Upholstery*, and *Easy-to-Make Slipcovers*—all by Herbert Bast are all examples. Other publications available by different authors are Carole Thomerson's *The Complete Upholsterer*, which provides an intriguing guide on how to calculate fabric yardages. While these emphasize techniques for traditional upholstery methods, they are not suited to meet the needs of a theatrical production. In everyday use, furniture is not typically subjected to jumping, standing, or being knocked over. I will refer to these acts as “stage acrobatics.” These stage acrobatics are often necessary for the particular

scene as indicated by the director. They create levels, which allow a character to have focus or other necessary means of adapting the stage action. Furniture adapted for use onstage has typically undergone reinforcement to ensure its continued abuse from stage acrobatics and would not be seen in the traditional home or office. These reinforcement methods are not always necessary, as they depend on the needs of the production. Nevertheless, they are essential skills for the prop master to have at their disposal since the life of the furniture piece depends on it. While the audience may not realize the couch they have seen onstage has been reinforced to support these methods, it is in an ideal situation that the prop department will be able to use the reinforced piece for multiple productions.

Common titles for the prop master include Thurston James's series of books: *The Prop Master's Mask-Making Guidebook*, *The Prop Builder's Mold Making and Casting*, and *The Theater Props Handbook*. While all of these volumes are invaluable to the prop master, they are not geared towards the topics of furniture or upholstery. Moreover, the latter book *The Theatre Props Handbook* focuses mainly on hand props. The mere mention of furniture is indicated by rehearsal furniture, where James recommends building rehearsal blocks that they can manipulate however the production deems necessary. Eric Hart released a book in 2013 entitled *The Prop Builder's Guidebook*. While Hart does mention upholstery, patterning, and furniture construction, it is an initial guide for beginners. That is not to say the seasoned prop master cannot learn something new from his writing, but it does not focus on upholstery nor furniture reinforcement. The intricacies involved in upholstery require a more detailed volume that allows the prop master to truly grasp the essential skills required to undertake an upholstery project.

The works previously mentioned are certainly invaluable to the prop master, but are solely indicated for everyday use or are not fully encapsulating the needs for stage use. My



research into the topic of upholstery for the stage revealed that there is no guide available to professionals and students of theatrical props. Thus, the following chapters will serve as a guide for prop masters in live theatre or film to supplement their previous knowledge of upholstery. I begin with a brief outline of the history of the upholstery trade, methods, and materials. This information is essential to the prop master to understand the background of upholstery's foundations and how they were initially introduced to consumers. Moreover, it is essential to understand that not much is known about the history of upholstery since little was documented. I then proceed to a chapter on the reinforcement and repair of set props. This chapter will not be limited to those furnishings which are covered in fabrics and padding but will extend its worth to prop masters at large in the proper reinforcement of furniture for stage use. These choices are crucial to the proper function of set props. Next, a description of tools, materials, and locations for upholstery in the prop shop will be identified. This chapter also encompasses the appropriate methods for creating foundations and fabric application. The final chapter will cover practical methods for the stage, proper selection of textiles, and fabric yardage standards. The practices outlined in this chapter are indispensable for creating work that is safe, functional, and consonant with the production's aesthetic.

The preliminary research of this manuscript found that most upholstery books were written in the 1960s or prior. With very few texts available to the trade of upholstery in the last twenty years, the endeavor of this guide became paramount. Without a fully encompassing guide to theatrical upholstery, prop masters find themselves referencing multiple documents to accomplish their enterprises. These documents include published texts, blogs, forums, and excerpts from theatrical prop books written over the last century that touch vaguely on the use of upholstered set props. One particularly fascinating outdated book written in 1934 suggests that

“metal working is not so useful, though of course jobs do turn up now and again...it would take up too much space to deal with soldering, tapping screws, raising, and other branches of metal work” (Cookson 12). Certainly the profession of a prop master has expanded since the thirties but indeed require these circumstantial skills. Can a prop master circumvent the need to metal work? Unquestionably. Does it restrict them from creating the best possible prop? Absolutely.

Most of the examples in the following chapters are a reflection of the work that I have done in upholstery. After several years in the props profession, I have gained sufficient skills as an upholsterer to warrant being hired by family members, friends, and referral customers who reached out to me in search of reupholstery solutions. As such, I have upholstered a multitude of projects, including but not limited to sofas, loveseats, wingback chairs, and ottomans. The methods I used in those pieces are outlined in my thesis. Theatrical upholstery does not vary greatly from traditional upholstery methods, nonetheless, it is essential in theatre to have a few concise methods that will ensure the furniture piece will stand up to stage use and be a valuable resource for the props department in future productions. These methods are essential to the fabrication and preparation of furniture for the stage.

Several mentors in technical theatre and professors of the same trade have told me that such a guide is entirely necessary, that this will be a useful document not only for my personal records but also to prop masters in the profession. Some prop masters often overlook upholstery, never to recover a piece in their lives. Others simply spray-paint the fabric multiple times over, never truly uncovering what lies beneath to the originally laid foundations. Others are truly awe-inspiring at the upholstery work that the artisans are able to accomplish, such as recreating Victorian settees with steel reinforced legs so that actors may jump on it (not very lady like if you ask me, but the stage is a place for the surprising).

Reupholstery is a task that is often approached with difficulty in mind. With a full guide to reinforcement for stage use, options in foundations, and a guide to compute fabric yardages, this thesis will provide professional prop masters with a manual to heighten their standards of upholstery onstage. Perfect for any skill sets, it will assist prop masters with more information regarding the topic with options very particular to our industry. In lieu of an expansive library of upholstery books that feature multiple upholstery techniques, this thesis will be a supplemental guide of the best practices for theatrical use. The next chapter will detail the history of upholstery from its infancy to the traditional upholstery style.

## 2 HISTORY OF UPHOLSTERY

Prop masters and their artisans undertake upholstery projects in an assortment of their theatrical productions. Depending upon the production style or concept, particular upholstery techniques are required for the prop artisan's skill set. The historical methods of upholstered furniture are unfortunately not well documented. This is a result of oral techniques being passed from master upholsterer to apprentice. Moreover, museums typically did not pay close attention to the restoration of a furniture piece. In the introduction of *Upholstery in America and Europe from the Seventeenth Century to World War I*, Jonathan L. Fairbanks explains the problem:

“It was standard museum practice to send out historic furniture in need of reupholstery to commercial shops. At that time, neither upholsterers nor curators paid much attention to the process. Rarely did they take care to remove the existing materials so as to discover anything remained of the original covering fabric, foundation materials, or nailing” (Fairbanks 11).

This book was a collaborative act created by a group of textile artists, the Decorative Arts Society, who gathered in 1979 to discuss information and chart future directions. “Over two hundred museum curators, upholsters, conservators, interior designers, collectors and historians” joined this group to discuss upholstery over a four-day period (Fairbanks12). The result of this gathering would not be garnered until 1987 with the release of *Upholstery in America and Europe from the Seventeen Century to World War I*. Throughout my endeavors to research the beginnings of upholstery; no document was as thorough as this one.

Upholstery is—and to an extent still remains—a truly idiosyncratic art form that is left to the upholsterer's standards, technique, and personal practices. This is not to say, however, that historical types of upholstery cannot be executed in modern day or that attempting to upholster a historical piece should be abandoned. Documentation of historical upholstered furniture must be executed by museums to ensure this craft does not disappear and simply not become just that—

history, and an unknown one at that. For the prop master, particular attention must be paid to the research documents to ensure a cohesive execution of the historic task at hand.

What exactly is upholstery? *The Encyclopedia of Furniture* by Joseph Aronson defines upholstered furniture as “consists of stretching of textiles across a wooden framework” (Aronson 189). He cites an example from the early Egyptians: simple leather hides were stretched over a frame to create a seat. Further explanation by Aronson concludes that in time, cushions or pillows were added for comfort. Around the sixteenth century, the depiction of upholstery attaches the padding to a structure, filling cushions with down, horsehair, feathers, or wool. In the eighteenth century the final iteration of modern upholstery premieres with the introduction spring furniture. Classifications of this style of upholstery include “simple padding” or “overstuffed upholstering over springs” (Aronson 189).

Upholstery foundations—the padding that supports the infrastructure underneath the fabric—developed gradually and varied from region to region. As the furniture and craftsmanship style developed, so did the upholstery. Since these textiles are made of organic materials not much is left of the surviving pieces. Furthermore, the destruction of such examples with reupholstery, fire, and degradation by time leads to a lack of information regarding these pieces. Research by Peter Thornton in the aforementioned collaborative book revealed that upholstery, as it is currently known, did not appear until after 1600 (Thornton 29). Until then, cushions or pillows were utilized to give comfort in a seat (Aronson 190). Thornton goes on to explain that fixed padding was available to “especially grand chairs” and craftsman of the time simply piled padding on a seat and covered it over with an expensive textile. Apparently, more attention was paid to the amount of decoration and trim work required on an upholstered piece than the actual foundations of the structure (Thornton 29). Most of the work carried out was done

in England, with these craftsmen occasionally being French women who “appreciated the sense of well-being that comfortable surroundings could evoke” (Thornton 29). As time progressed through and these paddings underneath shifted and did not hold shape, the craftsman working on such projects—not yet upholsterers—sought out saddle makers to ease their struggle. This resulted in the stitching of the foundations in order to hold the padding in a seat in place (Thornton 29). Meanwhile, webbing is documented to a chair dated to circa 1675. This leather-covered chair is in ownership at the Andover Historical Society in Massachusetts. The webbing is stretched from the front of the seat to its back, with one strip of webbing from side to side. It is not woven in interlocking threads, as is seen in later pieces (Trent 44). It appears this style of center seat upholstery had been used commonly, although no firm examples appear to exist. The filling for this chair was marsh grasses. Meanwhile, in the southern part of the United States, upholsterers were likely to use Spanish moss as filler for padding a chair seat when horsehair was unavailable (Trent 45). Examples of this type of furniture foundations can be seen at



museums and plantations homes—specifically, on a guided mansion tour at the Nottoway Plantation Home in southeastern Louisiana. To the left is a photograph of a settee on the second floor that I was able to photograph when I toured the plantation.

Figure 1.1: Settee featured in the Nottoway Plantation.

This settee has its original upholstery, dating to when the plantation was built. The rear of the sofa (not pictured) is deteriorated, revealing its Spanish moss foundations. Moreover, it features a plaque explaining that the chair was under the original ownership of the plantation. It made its way back to the plantation after the attempted reupholstery by an owner in Ohio.

By the 1700s, horsehair became the most common resource for padding a seat or chair. Originally introduced in 1670 for King Charles II of England, curled horsehair was sought out for the best results (Thornton 33). To prepare for its use, horsehair was steamed, which sanitized and set the curl. The curl of each individual hair interlocked, making it best for mattresses and chair seats (Congram 14). The development of style in this time was slow as there was not a way to keep hard square edges. To keep a covered seat looking well ordered, the final cover had to be securely fastened. Often, slipcovers were made for these pieces (two—one for the seat and one for the back) so that the padding underneath could be adjusted. Squared edges became popular in England before they did in France. Around the 1750s, upholsterers used canvas to keep the stuffing from falling over the edges. It was stretched tightly across the frame of the chair: left back to left front, front left to front right, and onward until the seat was completely enclosed. Unfortunately these measures were taken in vain, as the seat still drooped after a considerable amount of use. One particularly useful method of upholstery still in use today was introduced in the 1700s: tufting. It was first used for mattresses when quilting was not deemed appropriate. Much like quilting, layers of the padding underneath of the fabric are sewn together at artful locations to secure it in place. These artful locations include strategically placed circles that create a diamond shapes or lines sewn horizontally throughout the fabric to create a pattern. In addition, these tufts became grander as time wore on. This undoubtedly was another French introduction to upholstery, since it is only documented in reference to English chairs that are

signified as *French Chairs* (Thornton 33-37). This assumption may be a reflection of the style or could again be an assumed consequence from the French craftsman who worked on the piece of King Charles II. Unfortunately, it cannot be truly known since again, little certification exists from this era.

The dawn of the Industrial Revolution brought the availability of upholstered furniture to the working class market. Rejuvenation in the use of mosses, grasses, and even wood shavings became the norm in the early part of the eighteenth century. Alas, the use of springs was still unknown, and the seats were uncomfortable and quite unyielding. Styles of period now dictated as the regency, empire, and federal design styles perpetuated this use of hard seats that did not give in any sort of fashion. Hard angular lines and even square bolsters were utilized, but often did not yield the comfort one might expect in today's societies. Sprung seats were finally introduced into the market during the middle of nineteenth century. However, the use of these devices varied; fine upholsterers of upper class families were placing springs in their best pieces while the other end of the spectrum had springs whose twine would snap. That did not sway people from demanding this style of upholstered foundations. Moreover, by the late half of the nineteenth century the availability and quality of steel increased, resultant in a better formed sprung seat. Factories were creating spring units that defined seat shapes. Finally, the most iconic upholstery version from this era is the deep button tufting created by securing buttons as a decorative entity through the thicker stuffing. This practice kept the buttons in place and yielded a chair style definitive of the Victorian era (Thomerson 32-37).

By the 1880s, deep button tufting went by the wayside and smoother looks were sought. However, "upholstery forms had swept up a crescendo of stuffing and springing, enveloped in a profusion of buttons, corded rolls, scrolls, fringes, tassels, and valances" (Thomerson 41). These



highly decorated pieces were placed throughout homes like bric-a-brac. By the turn of the century, a new sort of style, not yet defined, was required. Cleaner lines and simpler styles eventually led to the English Arts and Crafts movement. The 1920s featured furniture brimming with stuff, using coiled springs, wired edges, and were stitched in the “traditional” style—upholstery techniques that are still in use today (Thomerson 41-44). Foams gradually became the norm, but with the realization of toxic fumes and gases, “a demand for traditional fillings has re-emerged” (Thomerson 44). However, this is not in the sense that one might estimate: the consumer does not want a padded or hand stitched piece, but rather a comfortable piece that features feather stuffing.

It will indeed be interesting to see the progression of upholstery as we move forward with technology. A comfortable sofa, chair, or bed is something that most people in modern U.S. society are accustomed to. With greater innovations and creation, perhaps the next upholstered seat will be in space? It is comforting to know, however, that the act of upholstery has not been replaced with robots. There are elements that are created in this manner, but upholstered furniture will always require the ingenuity of human handiwork. I find it particularly fascinating that I get to be a recycler of sorts: with each piece I recover and stuff, I get the opportunity to peer into the past. A particular favorite of mine was a chaise lounge at Louisiana State University in the spring of 2013. As the most recent upholstery was removed, a message on the wooden frame written in pencil from the upholsterer said, “man on the moon!” and the date: July 20, 1969. It was the neatest time capsule that I have found yet. The next chapter will help the prop master and their artisans reinforce furniture pieces for use onstage.

### 3 REINFORCEMENT AND REPAIR OF SET PROPS

Often onstage, prop masters are tasked with the knowledge that actors must sit, stand, lean, climb, or jump on furniture pieces. This is not limited to upholstered pieces but extends to tables, bookshelves, or simple wooden chairs. An advisor of mine from my undergraduate days, Malcolm Callery, once said, “Give an actor a bookshelf and they’ll want to climb it.” Thus, the prop artisan must give not only rehearsal pieces to work with that will accommodate this sort of abuse but also ensure the production piece is inherently sound to prevent injury to the actors, crew, or the property person’s valued piece of furniture stock. Reinforcement methods include intricate joinery, metal reinforcement, or non-typical upholstery methods. The choices that a prop master makes in designing their furniture are inherent to the success of its performance.

To undertake the reinforcement or repair of wood furniture, a prop artisan’s carpentry skills will be utilized. A basic knowledge of wood joinery is imperative to completing furniture reinforcement duties. There are multiple solutions to choosing the appropriate joint. “To sort through the possibilities, you must apply what you know about the special nature of your building material—the wood grain, how it moves across the grain, and its strength along the grain” (Engler 10). In *Woodworking Wisdom*, Nick Engler goes on to describe three rules to follow when selecting joints. Each wooden joint must “support the load, let the wood move, [and] provide a good gluing surface or a suitable anchor for a fastener” (Engler 10). By following these three easy ideas the prop person can easily select the joints most appropriate for their project.

When building a piece of furniture from scratch for the stage, one must consider its continued abuse in its life in the theatre. Careful consideration of where the piece will be weak is of the utmost importance. For example, if an individual is building a wooden rung ladder, but it

is just carried onstage, then it probably does not need reinforcement any more than simply building it from less sturdy materials: pine studs with lots of knots will suffice. Choosing a material with knots in the grain violate the consideration of the strength of the wood grain. This is acceptable since the unit is non-load bearing. When placing the ladder into the theatre's prop stock, it must be labeled accordingly: "Do not climb!" Consequently, if the ladder is indeed meant to bear mass, the actor's weight should be calculated so that the ladder in question may perform just as well as the actor. This information can often be obtained from the costume shop's notes, however, it can be neglected to be collected, and thus stage management can provide an inquiry. Proper communication here is imperative.

Consider a production where a new piece of furniture would need to be created. After discussing options with the set designer and speaking with the director about the plans for the piece of furniture's exploitation onstage, it is discovered no piece in stock or in the purchasing world is available. As a result, the prop master dictates that it will be built. Designs are often submitted to them in a rough and not-to-scale sketch, so it is choices here that are determined based on needs for the production. For the production of *The Drowsy Chaperone* at LOOK Musical Theatre (2013), I received such plans. The sketch by scenic designer Seamus M. Bourne is seen at right.

This pouffe was to be climbed on, stood on, and rolled on and offstage. Immediately, I decided that this must be built of two-by-four

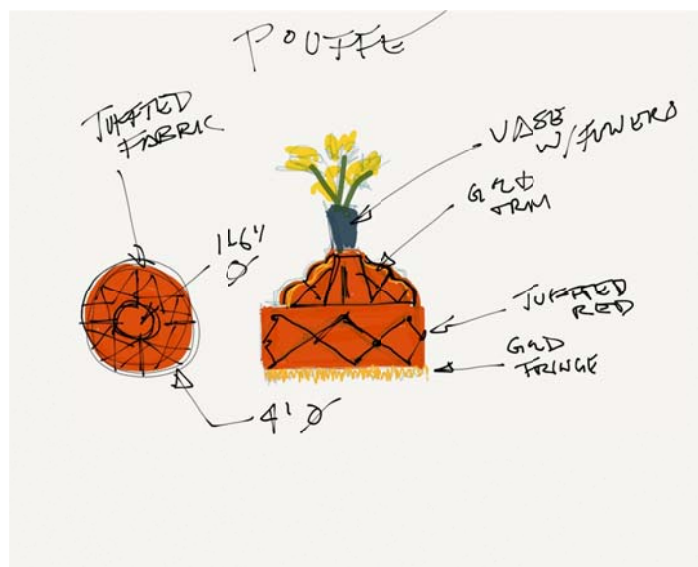


Figure 1.2: Pouffe Sketch by Seamus M. Bourne

pine supports with plywood tops and bottoms. They were connected with butt joints, wood glue, and pneumatic narrow crown staples. I distributed the pine supports evenly throughout the piece to appropriately distribute the weight of the actor being carried. I also used casters that were meant to stand up to the weight of the pouffe but also took into consideration the added weight of an actor or two on top of it as well. Two traditional stage brakes from Rosco were used on the upstage side to ensure the unit would not move when actors climbed on and off of the pouffe. Although relatively simple in its reinforcement, this project served the needs of the production and how it would be used onstage. Below is the final photo of the completed pouffe.



Figure 1.3: Completed pouffe designed by Seamus M. Bourne, built by author.

The fully realized pouffe contains all of the requested elements. Set Designer Seamus M. Bourne provided all of the dimensions per my request, which enabled me to build it to the appropriate size to the proportions of the rest of the set. Disappointingly, it was only used once

and then whisked away for the remainder of the performance. In such cases it is important to remind oneself that no one notices when a prop is there or how nice it indeed is; they notice when it is missing entirely.

A more complex project in carpentry is this Hepplewhite chair. Built from scratch for a



class project at Louisiana State University, the assignment was to choose the most appropriate joints to complete the armchair's structure. Again, careful consideration was taken for each of its components, since it was likely to be used onstage. It is now in my personal collection, having been used in only one production in its short life. The frame of this chair is seen at left, with a mahogany stain and a high gloss polyurethane finish.

Figure 1.4: Hepplewhite Chair frame built by author.

I chose this chair from the book *Making Antique Reproduction Furniture: Instructions and Drawings for 40 Classic Projects* by Franklin Gottshall. Although its joints were laid out for me in a drawing, I referenced several materials to determine the most appropriate joints. Engler's guide includes a chart that outlines the strongest types of joints and what types of wood that

would best accommodate their needs. For this project, I used pine two-by-fours, one-by-six, and two-by-six to create the frame, back, and arms. The seat of the chair took special consideration in choosing the joints. This ensures that if an actor were to stand on it, it would be the most effective in its support of the almighty actor's weight. The joints I chose were a set of through-mortises and tenons. The strongest of joints, they hold up to shifting and wear from leaning, rocking, and tilting. The back legs and back of the seat are one continuous piece of wood so that there would not be a break in the line of the back of the chair. This is how most chairs are constructed. Since often prop folk are faced with a sudden addition of a prop it is imperative in the construction of a chair that this feature remain intact. If the chair is not used in any manner but to sit on, one could get away with using multiple pieces to fabricate the back legs and seat back, but as a valid piece of stock, it would not be the best choice, since the stage acrobatics designated onto a chair vary from production to production.

This particular chair could not have an actor of significant weight sit on its arms. The delicate nature of the chair and the type of joints that I used to fabricate the connections to the arms simply are not meant for that sort of use. Although the joints are blind mortise and tenon, they would not be well sustained by the arm support's curved nature. Moreover, the connection from the back of the chair to the arm itself is not substantial enough to support an actor's full weight. If it is insisted that these arms be sat upon, more careful construction techniques should be used. If this was a note from the chair's beginning, perhaps a new style of chair should be chosen so that it would hold up to the weight over time. If a wholly new style is not a choice, however, complete through mortise-and-tenon should be used, as well as the option to create an arm support of a different curvature. A larger, more substantial arm support would dictate more weight distribution. In addition, an arm that is thicker would similarly boast a better



construction of the chair in question. Additional support bracing to the center of the seat could instigate stiffness to the chair's substantiality. For tables that are sat upon, similar techniques to the formerly mentioned chair should be followed.

Making a piece of furniture that was not shop built (i.e., purchased by the prop shop for use onstage) sturdy for the art of stage climbing is another prospect to consider. Options here include inserting a new frame within the existing frame to give added support. A new, heftier frame can bulk up a dainty Victorian settee, while a couch or sofa can be made to sustain standing with further reinforcements. The utilization of a piece of plywood is a viable option to create a sturdy surface capable of taking the full weight of an actor standing on the piece. This option can be chosen to attach directly to a frame. I reupholstered the settee seen below for *Cabaret* at Greenbrier Valley Theatre (2012), and actually removed this construction to make the

seating lighter for carrying on and offstage. This settee that has a matching set of chairs lives in the prop storage room at Greenbrier Valley Theatre, where I worked before returning to graduate school. The settee has been utilized in multiple productions since.



Figure 1.5: *Cabaret* settee with plywood sheet cover removed.

Another instance of employing plywood for reinforcement is producing a platform within the frame. I was Prop Master for the production of *Stick Fly* at Louisiana State University (2014). In this production, an old sofa that had certainly seen better days was chosen for stage use. However, this sofa was from the 1930s: it had its original tied box spring construction in its seat and tied springs in its back. Since it was a larger piece of stock that would be invaluable to the prop department in the future, I chose to reinforce it for being stood or jumped upon. I directed my Props Carpenter, Matthew Duvall, to build a box platform that would be inset and attached to the existing frame as a provision these conclusions. This particular inserted platform can be seen below.



Figure 1.6: Couch frame with inserted plywood platform.



As you can see, this platform created a sturdy surface to upholster directly onto. The original frame of the sofa had no center support leg, so one was placed into the backside of the sofa in order to generate weight distribution. It is important to use discretion here. We did not want to change the sleek line of the front of the sofa, so it was imperative to place the leg in this fashion. However, if a heftier actor needs to stand on the sofa, a center leg may be installed to prevent the front edge from cracking. This auxiliary leg should match the style of the rest of the sofa. It does not have to be the same wood species of the existing frame, but it should be painted accordingly so as not to draw the eye to its existence.

This reinforcement technique will give a safe, sturdy surface that will support the actor's weight when all influences are systematically thought through. However, the look of the sofa will certainly change. Although laypeople may miss such details, the trained eye will observe how the foundations of the upholstered furniture do not move as they would in real life, i.e., without a plywood frame inside its interior. To minimize this effect, one must choose foundations materials wisely. This topic will be discussed in greater detail in chapter four. Another obstacle to overcome is the weight of the plywood frame for the couch. Solutions to assist the properties run crew from a strained back would be to make the couch lighter for this instance as I did with the previously mentioned settee in *Cabaret*. The piece no longer required an actor to stand on it so it was certainly applicable. If it still must be stood upon, lighter weight materials can be chosen to assist in its weight. However, do *not* by any means sacrifice non-load bearing materials for the sake of the weight of the furniture piece. Instead, place the unit on wheels and apply Rosco stage brakes to the upstage side of the unit so that it may lock in place for the oncoming stage acrobatics.

Another type of reinforcement to furniture pieces is metal reinforcement. A wide variety of solutions are offered by implementing this material. Not as common as the aforementioned technique of building a wooden frame within a frame, steel can replace the wooden frame inside the structure with a steel frame. Again, the steel frame can be topped with a piece of plywood to make it sustainable for standing. Conversely, metal sheeting could also be used to top the metal frame. However, upholstery padding can slide, move, or be difficult to attach to this sort of construction. It is my recommendation to use a plywood topper when using a metal frame for the ease of upholstery attachment. Benefits to this style of frame are a lighter unit and the support of steel construction. The material cost involved with building a steel frame versus a wooden one may outweigh the benefits of creating a traditional wooden structure.

An additional mode of using steel for strengthening is building the steel into the design of the chair to create a desired effect. Eric Hart, a New York-based prop master, featured a prop furniture constituent of steel reinforcement on his blog *The Prop Agenda*. In this fine example of prop construction, he utilized pencil rod to have the look of a “floating” interior frame on the back of the seat. He welded the steel together, painted it black, and inserted them into the framing of the chair’s back. This resulted in a useful solution to a designer’s request (Hart, “Chairs for Tea”).

An example of aluminum reinforcement of a furniture piece can be seen below. Riveting aluminum sheeting to the joining members of the seat and back repaired this glider, used in the production of *The Fifth of July* at Louisiana State University (2014). It had been damaged from years of outdoor use with rust creeping into the places where it was originally bolted together. By removing the rust and cleaning it of debris, I was able to reinforce the seat for this borrowed piece of furniture. For borrowed pieces, it is pertinent to ask permission of the owner to modify

their property; otherwise you may find yourself the owner of a new glider. In this particular case, the owner was happy to have it reinforced in this manner and gratefully accepted it back in better condition than it was received.



Figure 1.7: The author reinforces a glider using shaped aluminum pieces, vice grips, and steel rivets. She is seen here predrilling holes for the rivets. Photo by Chris Pyfrom.

Restrictions of resources for the prop shop are a consideration. Prop shops may not have the skill set available to them to make these techniques possible. In addition, the facilities required for metalworking are often a shared space. Sandra J. Strawn, however, notes a shift in standard practices in *The Prop Director's Handbook*:

“Increasingly, prop shops are investing in designated equipment to meet more specialized metal construction requirements. Stock materials in a prop metal working area are again

typically smaller in scale and more delicate than the corresponding structural components in the scenic department, although it is common for some furniture pieces used vigorously to require steel structural reinforcement from the prop department on par with scenic construction techniques in steel” (Strawn 134).

Devoting resources to fulfill these types of prop necessities is becoming imperative to the prop master and his or her department. With considerable amounts of abuse placed onto set props in productions, fortification with steel is progressively becoming a more popular choice.

The repair of an existing furniture piece for use onstage is a very common task to the prop master. A wobbly chair, for example, may simple be worn from years of normal usage or stressed from more unusual applications in performance. In the event of a rickety chair that needs stabilizing, simply disassembling the chair and regluing the joints is the most effective. To ensure the best results, *carefully* disassemble the wooden components using a soft face rubber mallet. Then, remove any visible dried glue by lightly sanding. Should any parts need further repair or replacement, make these changes and fabrications immediately. Finally, reassemble the chair with wood glue. If necessary, insert fasteners to assist in maintaining the chair’s operational proficiencies. I often replace outdated fasteners, such as flat head screws, with new screws to ensure the ease of removal if the chair needs further repair later. Clamp the chair together and leave the glue to set and dry fully. If the chair is to be refinished or painted, remove any excess glue with a wet cloth, then sand the areas once the glue is fully cured. If the stain is to remain intact, ensure that all glue is wiped away to guarantee a rewarding finished appearance.

Damage to furniture during a production is a common cause of quick repairs. Using hardware pieces such as flat irons, angle irons, and fasteners can give a quick reinforcement to pieces requiring only moderate stage acrobatics. Placement of these hardware pieces should be placed on the joint that is seen to be most troublesome. In chairs, this often is where the side seat-framing members attach to the legs. Corner bracing that is cut at mitered angles at both ends

and sized to the corners of the chair is also an option. It is often a better solution than angle irons but require more time for the piece to return to the production at hand. Moreover, these corner-bracing pieces are often already installed into a chair and may simply requiring regluing. This serves as reminder that these possibilities are not often permanent, and the life of the stock piece may often be shortened. This shortening occurs as a result of the wood weakening from screws being driven in and removed multiple times.

With antique furniture pieces, there can be existing holes from upholstery tacks that have caused the wood weakening. I have previously filled a prop furniture piece with auto body putty to fill in a multitude of upholstery tack holes. This suited the repair in question since the holes were on the underside of the chair frame. As a result, the frame would not take any additional fasteners to hold the fabric in place. Other types of putty that suit this repair technique are JB Weld's wood putty. It comes in a variety of colours to match your existing stain, sands well, and imitates the finish of your stock piece. Most importantly, it strengthens the grain of the wood by filling in the voids, much like the auto body putty.

When purchasing a new piece of furniture for stock, it should be thoroughly examined. Wood-destroying insects could have affected the object, so extra care should be taken when examining it in the store. This may not be entirely possible should the damage from these insects be hidden under existing upholstery. If it is discovered that the furniture piece in question is the best option for the production, it must be repaired before its use in rehearsal or in a production. This type of structural damage to the furniture piece should be replacement of those sections. By paying particular attention to existing joints and the size of the damaged wood member, a replacement part can easily be fabricated. It is important to note that it is not entirely necessary to

use the same species of wood. Nevertheless, if it is an exposed portion of wood, it should be painted or stained to match the rest of the existing unit.

The reinforcement and repair of set props can be a timely endeavor. It is important for the prop master to appropriately schedule time for unseen repairs, unwarranted treatment to furniture pieces that are placed into rehearsal, and to fully investigate a furniture piece before its purchase to include in a theatre's property stock. Each of these proposed methods of furniture reinforcement require careful attention to be paid by the artisan accomplishing the task. Furthermore, the prop master must ensure that proper safety precautions are followed in undertaking these projects. This includes proper ventilation in a work area, safety glasses and/or goggles, face shields, and respirators that are properly fitted. By employing these indispensable work habits, work will ensue with appropriate precaution. After all, these repairs and reinforcements must be instituted so that the show may go on as the production team plans. The next chapter will focus on the tools, materials, locations and techniques for the prop master's upholstery endeavors.

## 4 THEATRICAL UPHOLSTERY TOOLS AND MATERIALS

Before we look at specific projects, let us consider the tools, location types, and materials to have on hand. Tools for upholstering in a theatrical prop workshop need not be all of those that you may find in an upholstery workshop. Nonetheless, there is something to be said about having the appropriate tool for the job. Otherwise you may find yourself pulling staples with a dull screwdriver. And this is never a pleasant experience. A suggested list is seen below.

<b>Tool</b>	<b>Purpose</b>
<b>Tack puller</b>	For removal of tacks or staples. Upholsterer's best friend.
<b>Staple puller</b>	For removal of staples
<b>Tack Hammer</b>	With magnetic end to drive in replacement tacks
<b>Tack Hammer with Silicone Tip</b>	For driving in decorative tacks
<b>Electric Bread Knife</b>	For forming large pieces of foam
<b>Diagonal cutters</b>	For removing difficult staples in tricky locations
<b>End nips</b>	For removing difficult staples
<b>Curved needles</b>	For stitching springs, button tucking, and finishing corners
<b>Sewing Hand Needles</b>	A variety of gauges, for hand stitching onto upholstered piece
<b>Sewing Machine</b>	One that is able to sew through thick fabrics: can be a sturdy home machine or industrial machine
<b>Pneumatic Staplers</b>	Duo fast or One that accepts T-50s
<b>Pneumatic hose</b>	To utilize the pneumatic stapler
<b>Air compressor</b>	To utilize the pneumatic stapler and air hose
<b>Fabric Scissors</b>	To cut fabric
<b>Craft Scissors</b>	To cut webbing, string, and trimming foam
<b>Webbing Stretcher</b>	For stretching webbing
<b>Measuring Tapes</b>	One flexible and one retractable steel
<b>Double-ended Needles</b>	To ease the process of button tufting
<b>Straight Long Needles</b>	Variety of lengths for deep button tufting or sewing springs down
<b>Hot Glue Gun</b>	For quick application of trim

Figure 1.8: Upholstery Tools for the Prop Shop

This list serves a beginning point and does not include specialty items or tools necessary for a singular reupholstery project. Rather, it is a guide to the minimal tools that should be available to the soft goods prop artisan. Most of the tools are very straightforward and can vary person to person depending on their preferences. I recommend that the pneumatic stapler that is purchased

and utilized for upholstery in the prop shop is one that accepts T-50 sized staples in lieu of the Duo Fast stapler. The gauge of staples is larger, thus, when reupholstering the piece for a second time, you will have an easier time removing the upholstery that existed. Ensure that the stapler is set to around eighty-five to ninety PSI so that the staples do not dig into the frame too much. Do not set it lower than this, as it will result in the staples being too loose or bending as they go into the wood. Please remember here that this is a variable setting and that the PSI can vary depending on the materials you are stapling to, the brand of the stapler, and any kinks or leaks in the pneumatic hose.

The tack or staple puller is the ultimate reupholstery tool. It will aid in removing tacks, staples, and difficult nails driven into the previous upholstery. Pullers are available with magnetic or non-magnetic prongs. My preference is non-magnetic prongs since the staples will stick to it and removal of them disrupts work progress. Tacks, however, are not as magnetic and simply fall to the floor. A final word about approaching the work with these particular tools: always sweep after you are finished for the day or leave the area for a prolonged period—lunch, shopping trip, etcetera. Nothing hurts more than a tack through a visiting person's shoes. This is more important in an educational setting, when those coming through the shops are not always wearing the appropriate footwear. Moreover, a tack can quickly attack the shop's hand truck, disabling it from use if it has inflatable tires.

The facilities where you upholster should be relatively clean. While this is not always an option as shops use shared space, make the best attempt at obtaining such a space. A few locations are key: an unmarred, clean table for laying out patterns and fabric, a sewing station with a set-up sewing machine and notions, and trestles (horses or ponies) for supporting the work at a height that is comfortable to the artisan. These trestles should be padded at the top edges and



relatively wider than those found in the scene shop or home carpenters garage so that furniture may rest easily on them. The padding at the top ensures that the exposed finish of the upholstered frame is not blemished by wood-to-wood contact. Often, a clean table and sewing station can be borrowed from the costume shop for a time. Just ensure that their space is left better than it was found, and that the shop manager is amenable to an artisan's presence in their shop. Be wary of setting up your trestles near the paint shop, as splattering and spattering can ruin a new finish and upholstered cover. If this sort of set-up is unavoidable, cover your work with a non-penetrating drop cloth (a tarp will do nicely) in order to prevent this splattering becoming a new part of your finished work. Nothing is more frustrating than recovering a settee, leaving for lunch, and returning to a newly theatrical "aged" sofa. If you do make this mistake, no worries: I only made it once, and so will you.

Now that the furniture has been reinforced, protected, and ensured to perform for the production's desires, the piece is ready to become what defines upholstery: the padding and filler materials I will refer to as foundations. The foundations of an upholstered piece of furniture are the most effective way of manipulating the furniture's final look. While the frame of the assembly emulates the style, the foundations can communicate a wide range of information to audiences. Foundations can signal age or wear of the piece or the class of its owners by its grandiosity or dilapidation. Foundations can also comment on character by the furniture placement, actor blocking, or overall use onstage. Soft or hard lines created by the underlying padding when the upholstery is in use should manipulate the eye. Moreover, these maneuverings allow modern foundation innovations to indicate period appropriate style solutions. For example, an elaborately carved frame of a settee with deep button tufting produces a much richer look than a settee with no tufting at all. Additionally, these tufts should coincide with the creation of those

hard of soft lines to further compound the designer's vision of environment: is it a pleasant place or a sterile, unwelcoming environment? The choice of the final fashion fabric, the cover, enables the audience to straightforwardly make enables the audience to correctly draw conclusions about the world of the play. Without the appropriate foundations atop the wooden or metal frame, these style selections are not as easily noticeable. Yes, a piece of furniture can be upholstered for the stage without consideration to these effects. Certainly a piece can not adhere to these considerations, but taking these ideas into effect before beginning the work will ultimately yield better results of the final upholstered piece. It will take your upholstering abilities to new heights.

Materials for upholstery can vary to suit the needs of the piece. As previously discussed, the process for choosing these materials and their performances should be carefully considered. Always ensure that the materials you have chosen are readily available in your region. If they are not, guarantee access to them by preordering them in a timely fashion. Ordering extras of these materials can be beneficial to the prop shop, as quick upholstery projects like slip seats can be quickly done when the appropriate materials are at hand. A brief list of these materials follows in figure 1.9.

<b>Material</b>	<b>Purpose</b>
<b>Webbing</b>	Nylon or Jute, for stretching the base of seat.
<b>Burlap</b>	For covering springs and edge rolls.
<b>Spring Twine</b>	For tying springs down. 100% linen is best.
<b>Upholstery Springs</b>	Coiled available in several gauges.
<b>Cut Tacks</b>	For tacking in places you cannot staple
<b>Pneumatic staples</b>	Duo fast or T-50 to suit the stapler, varying leg sizes.
<b>Decorative Tacks</b>	For trimming out upholstery edges
<b>Gimp Tacks</b>	For traditional applying of gimp
<b>Button Thread</b>	For securing springs to webbing, button tufting. Multiple colours should be available.
<b>Spray Paint</b>	Matches the colour of the fashion fabric (final cover)
<b>Hot Glue Sticks</b>	For quick attaching of trim
<b>Back stacking strip</b>	For a well concealed back edge, not utilizing trim or decorative tacks
<b>Curved back tacking strip</b>	For wingback curves and other curvatures requiring no trim or decorative tacks
<b>Dust catcher/Bottom lining</b>	For the undercover, often cambric or other material.
<b>Buckram</b>	To stiffen corners of loose weave fashion fabric
<b>Loose Cotton fill</b>	To cover over springs
<b>Cotton Batting</b>	To soften and seal in cotton fillings
<b>Thin foam</b>	To seal in cotton fillings, cover slip seat, or use on chair arms, 1 to 2 inches thick.
<b>Thick Foam</b>	Multiple densities available. Choose the one most applicable. Available beginning at three inches or thicker as well as multiple widths.
<b>Synthetic Horsehair</b>	For use on chair backs, seat cushions, and arms for a traditional upholstery look.
<b>Muslin</b>	To complete the first covering
<b>Fashion Fabric</b>	To utilize as a final cover
<b>Trim</b>	Coordinating the fashion fabric
<b>Piping Cord</b>	Available in a variety of circumferences. Choose the most appropriate.
<b>Cardboard Roll</b>	For creating edge rolls

Figure 1.9: Prop Shop Upholstery Materials

This is a list of the most essential materials for undertaking an upholstery project. The entire list is not required, nor will they be used on every project. They are useful options to have on hand in the event of spontaneous reupholstering endeavors. Before moving on to the fundamentals of reupholstering, let me highlight a few notes on choosing these resources.

To spring or not to spring: that is the question. Again, careful consideration of the sofa's tasks in a production comes to mind. If the couch in question has received an interior platform treatment for reinforcement, it would be best to not utilize springs. However, if the springs can be fastened to the plywood so that when actors jump on it will create a comedic effect, then by all means spring away. Side or wing-backed chairs can certainly retain their spring ancestry, as they are more able to stand up to abuse. This is a result of a small surface area and smaller number of springs. A word of caution: if the underlying webbing or metal spring structure is damaged in any way, these *must* be replaced before continuing its use. If you properly allotted time for this project, then it should not be a question of "should I" but "how will I?" This ensures the safety and substantiality of the object. New spring construction is very resilient to stage acrobatics. What's more, it allows the foundations to be stood upon and give the actual look that it exists in a more realistic world.

Coiled springs are available in various gauges and heights. A wide centered spring is a soft spring for seat backs and arms, while a narrow centered spring is a stiff spring. The thinner gauge of wire that is chosen will reflect a softer seat. For theatrical use, I recommend using a thicker gauge. It will stand up better to stage acrobatics, and result in a longer lasting theatrical piece. Remember, too, that the amount of stiffness or softness that is obtained from a spring seat is a reflection of how tight the springs are tied down. Other types of springs available are serpentine springs or zigzag springs, but these often require special equipment for applying. In seeking to repair this type of spring, secure with nails or screws to the frame of the unit. If this style of spring is distorted or damaged, it is best to replace it.

The type of fastener you choose depends on the amount of time and tools you have at your disposal. Early in my upholstery career, I opted to use traditional cut upholstery tacks for every

project I encountered. I found them easier to remove in the event of reupholstery and was a staunch traditionalist. I also found that the gauge of traditional upholstery staplers too thin to remove when one made a mistake in placement or when reupholstering. After the discovery of a pneumatic stapler that took T-50 staples, I have never looked back. Occasionally, however, I still use these cut tacks to secure fabric into difficult corners and locations on the entity being reupholstered.

When choosing appropriate filling materials, I advocate for the use of one hundred percent cotton filling for your foundations. Polyester fiberfill and batting often shift and clump in undesirable ways after a couple of months of use. For a better example, consider the pillow at company housing that gave you a crick in your neck every morning of your summer stock experience. This pillow may have been purchased new last season; fluffing or punching will never help it recover its initial comfort level. This is the same for upholstery. Once it has decided to shift in whatever unnatural way, it will never return to its former glory. This is not to say that a combination of polyester and cotton filling cannot be used. I have found that using a combination of three products (cotton filling, polyester fiberfill, and a thin foam) has yielded a superior result: firm, comfortable, and able to withstand use onstage.

Recall the Hepplewhite chair from the previous chapter whose frame was built with only the sturdiest joints in mind, I chose to upholster this project using traditional upholstery methods to enhance my skill set in that particular area. I stretched and wove jute webbing within the seat frame and stapled the ends down firmly. After application, the webbing should sound like a drum when tapped on. This being the case, I moved on to stitching on the springs with button thread and five inch curved needle. The curved needle allowed me to maneuver around the coiled nature of the springs. I arranged the nine springs that I found in the prop shop's stock to full the area of

the seat. Then, I tied the springs down using linen string. Furthering my staunch traditionalism, I tacked the ends of the linen string as I read in *New Essentials of Upholstery* by Herbert Bast. Tacking the springs instead of stapling them ensures that the string will not be cut by the strap edge of the staples. By fastening the tack halfway into to the wood, tying a knot around the tack, and driving the tack fully in, this method is the crucial way to ensure that springs will not pop or tear during stage acrobatics. It is a method that has lasted a century, and barring age of the string, should not fail. It is best to not use just string or other type of string, as it will snap. Linen is the best choice for this installment. The first step in its foundational progression is seen below.

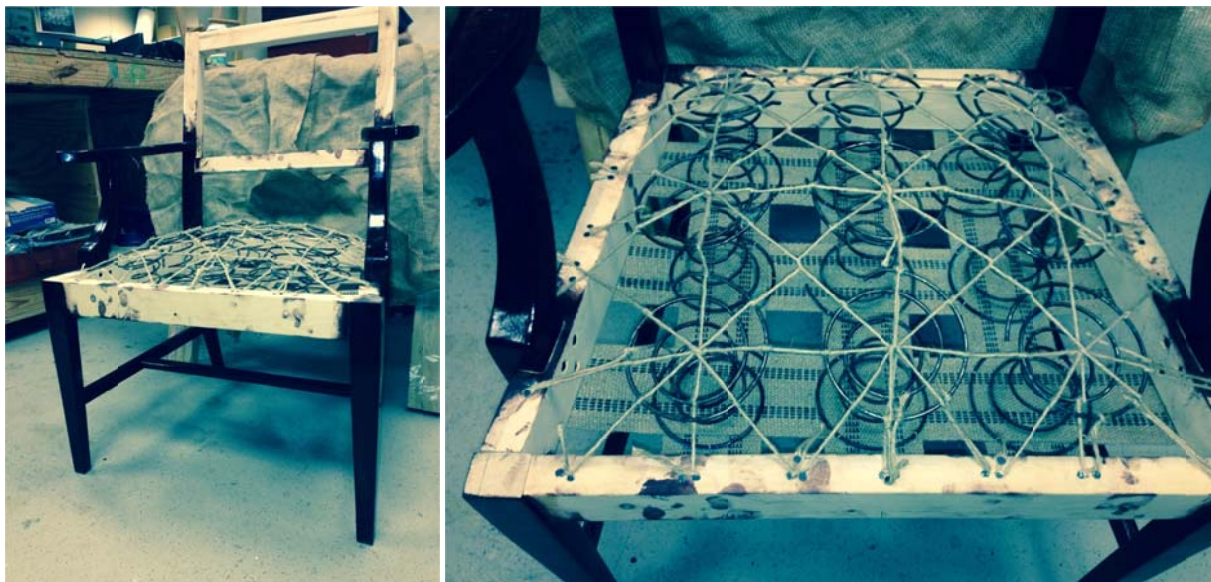


Figure 1.10: Left: Tied down springs. Right: Bird's eye view of springs tied traditionally.

Undoubtedly tying down the strings of coiled springs is the most difficult of the steps in upholstery; if your hands do not hurt when this step is complete then it has not been done properly. The key to spring tying is ensuring that the springs are adjusted and tied to the appropriate height. Failure to do so will result in a poorly situated chair, and the strings will certainly pop once in use. To tie springs effectively, start with the center front to back string. I tied each cluster of springs from center front to back, then left front to back and finally right

front to back. It is imperative to tie a knot to the spring that will keep it from slipping or sliding on the desired location. Failure to tie a knot onto the coiled spring and simply looping the string around it will result in it not being tied to height. Ensure that each individual knot does not slip from side to side for the best results. Then, tie the springs horizontally, incorporating the initially placed spring. Again, do this center left side to right side, front left to front right, and back left to back right. Upon completion of this step, it is time to check for tautness. Sit on the seat and bounce. If it is loose in any manner, the string will pop, break or tear, and the entire process must be redone. Moreover, this step also checks that the springs of the seat are at the appropriate height. It will be highly noticeable if any spring is out of height when it is sat upon in this manner. The diagonal springs should be approached in a similar manner, start with the center and work outwardly. Finally, the spring's section is complete. Do a final check by bouncing on the seat to ensure all strings are properly tied and fashioned with the appropriate knots. If you notice any particular string slipping, then that section must be recreated.

Continuing with traditional methods, I covered the seat in burlap. Burlap allows regulator needs to be inserted through the bottom to move foundation materials in the event of lumps and bumps. Then, to create a solid edge on the chair, I created an edge roll on the front and both sides. The edge roll prevents foundations from spilling out over the edges, and softens the hard edge of the wood for sitting purposes. I used pneumatic staples to accomplish the fastening of the burlap. For the seat back, I again stretched webbing in three strips from top to bottom taking care that it was tight and sounded like a drum.

The chair then began its journey into comfort. I first placed a layer of loose cotton fiberfill in the chair seat. Then, I cut thin egg crate foam to size for both the back and seat, covering over the fiberfill, burlap, and springs. I chose to use foam since it emulated horsehair while giving the

chair a firmness that would be essential in its stage use. I obtained the twin size egg crate foam piece from the bedding section of the local Wal-Mart. This was the cheapest way to procure the thickness of foam I required for this project. It is easily cut with scissors and shapes to a chair with ease. Additionally, it does not require carving to ensure the best look. I stapled the foam pieces into place, and to soften the foam's firm look, added a layer of polyester quilter's batting over all of the components of the chair. Finally, I created a pattern for the fabric of the chair and covered it using muslin. Covering in muslin is essential for the theatrical chair: since it is in my personal collection, I will be able to reupholster the piece with a different fashion fabric with incredible ease. Below is the chair from the front and back, featuring its muslin cover and newly formed comfortable foundations. Note that I did not include a muslin cover on the rear of the seat to ensure ease of attachment of the hand-stitched fashion fabric back.



Figure 1.11: Left: Hepplewhite chair with muslin cover applied. Right: Rear view of the chair in the same stage.



Other options for a piece of furniture's foundations are the traditional horsehair. It can be difficult to work with because of the inherent nature of being loosely tangled together. Horsehair foundations also can attract unwanted or concerned guests: bugs or other nefarious vermin, the Fire Marshall, or the theatre's Production Manager. It also raises questions about whether or not actors might have allergies; Whether or not the piece may have been in the home of a cat lover, for instance, can be quickly ascertained by the smell of the piece. To appropriately incorporate furniture foundations that exhibit environmental damages into prop stock, I encourage the removal of this style of structure entirely. While this is not always a possibility, there are modern solutions to overcoming it. The aforementioned cotton batting combination is forthright but one could seek to use synthetic rubberized horsehair instead. Sporting a green hue, it mimics the creation of a horsehair foundation, is easier to work with since it is manufactured in sheets, and can be obtained inherently flame retardant. Therefore, this solution satisfies all unwanted—or concerned guests. Locating this type of material can be difficult, but it can be secured at an upholstery supplier. A simple phone call before visiting the store can ensure that this item is in stock. At left is my first



Figure 1.12: Armchair foundations with synthetic horsehair.

armchair reupholstery project utilizing rubberized horsehair as the foundations for the seat back. The seat foundations are traditional tied springs, burlap, edge rolls, a layer of this synthetic horsehair, and loose cotton fiberfill.

The last contender in upholstery foundation materials is upholstery foam. This material can be obtained inherently flame retardant or not and is available in a wide variety of densities. It also is available in a variety of thickness and widths. The density of the foam indicates how much give it will have when sat upon. Typically, I purchase my upholstery foams from an upholster retailer in lieu of the craft store chains like JoAnn Fabrics or Hancock Fabrics. These craft stores also sell foam that is more typically suited for a dining room chair, also known as a slip seat. Although a perfectly suitable material, the cost effectiveness of purchasing better density foam will guarantee a greater return in the project when upholstering for the stage. Employing the use of foam with a greater compression factor when fabricated will display better results for standing and sitting. If there are no springs in the upholstery and the foam is a thickness of at least 4 inches, denser foam is entirely appropriate.

This was the case for the couch mentioned in chapter three regarding reinforcements. Because of the use of the built in platform, the cushions needed to be only foam. The height of the platform was taken into consideration when choosing this method, since adding springs would add more height to the finished look. The platform took over the use of springs, and foam was utilized to create the cushions. In an effort to save time and materials, the cushions were directly applied to the plywood frame using spray adhesive. This guaranteed that the cushions would not slip or move during the sofa's use onstage. The timesaving effort became evident when the cushions were simply wrapped, tucked, and stapled into place to form the cushions' shape. Typically, cushions on this type of sofa are boxed, meaning that they are an individual

unit that creates a cube by encapsulating it on all sides. It is a venture that does indeed create a pleasing look but is also very time consuming and requires a great deal of time at a sewing machine. As an added feature, the cushions were shaped using an electric bread knife to remove the hard edges of the cut foam. This gave a final look that the cushions were uniformly placed: the shaping only occurred on the interior edges where cushions were touching an adjoining cushion. The exterior edges of the seat cushions were left as a hard edge to continue the hard line into the sofa's arm. A photograph of the sofa can be seen at below, with its center cushion still needing installment.



Figure 1.13: Sofa with carved foam for the seat cushions.

Once the foundations have been placed, it is time to seal them in. The best option for this enclosure is a finer upholstery tradition that has gone by the wayside: the muslin cover. A relatively inexpensive fabric, unsized muslin is made of loosely woven cotton fibers. It is sold bleached, unbleached, or dyed. In the Broadway golden age, it was the choice for soft cover flats. Today, a muslin mock-up is made for a fitting in the costume shop. To recycle, one can often obtain these leftover cuttings from the costume shop to ease cost. However, if the scene shop still uses soft cover flats, it is best *not* to utilize their scrap muslin as it has often been sized to a frame with glue and therefore makes it unsuitable for reupholstery uses. It is best not to use material known as duck—a heavyweight cousin of muslin—as it is too thick and will give an unpleasing, bulky look to final fashion fabric. I use a muslin cover on every piece I upholster, when possible. This ensures that the piece's foundations are secured when the piece is recovered in the future. Moreover, it is a timesaving remedy that is indispensable in our fast-paced industry. With the implementation of a muslin cover, the fashion fabric can be removed with ease and the foundations of the upholstered furniture need not be changed. The piece can easily be recovered as its shape has already been defined.

Finally, it is time to apply the fashion fabric, the final cover, to the endeavor. Much anticipated, it will give the piece the stylized look you are hoping for. It can also be supplemented to with the addition of trim. Trim specifications will be discussed more in chapter six. The fashion fabric's template can be created with the use of the original covering of the reupholstery project, so it is important not to throw it away. By carefully removing the original layer, as it is best served in good condition. Do not worry if it does rip, however, since this can be pieced back together when you cut your pattern. Lay out the new, uncut fabric on a clean table with the proper side up and spread out the cover on top of it. Then, pin or weight the initial piece.

Pins are especially appropriate when centering a pattern. I like to use a clear acrylic ruler drawn from the center out during this step, as it removes any wrinkles or folds in the fabric that I cannot see. Then mark the surrounding edges with chalk. Cut your piece, paying close attention to how the original was cut. I leave a margin of a quarter inch to a half inch on my new fabric as it ensures that it will be the appropriate size: best to cut too large than too small, as you can always trim away the excess. The photo on the next page indicates how to place the original fabric over the new fabric.



Figure 1.14: Original fabric seat cover lies out on new fabric.

This step is imperative in the reupholstering process, as it ensures the new fabric will be the appropriate size. Note the rip in the above photo; it required a bit of manipulation since the fabric

was threadbare on the edge of the chair seat. This is a typical way to find a chair, and the reupholstery task at hand should not suffer from it. A careful eye in placing the pieces will ensure its viability. For this piece, I pinned the tear together before I made my final cuts to ensure the best-made replica. In addition, the deep “c” shape seen in the photo indicates where the arms are placed on the seat. A trick that I learned in a tailoring course has greatly aided in my ability to ease the fabric around this tricky corner. By trimming the fabric back to the size it is necessary, leaving an extra quarter inch, and cutting a small “v” into the fabric, these angles can be quickly overcome by the inexperienced upholsterer. They should be cut using snip scissors, as the cuts themselves are quite small. But these cuts relate to big results and less complications during application of the final fabric. These angles are cut at the corners of where the fabric must turn under to ensure the edges do not unravel, and the bottom of the v should be on the exterior edge of the fabric. This method is utilized in tailoring for the double piping pocket and the bound buttonhole. For more information on how to attempt this technique, a great practice for the beginner upholsterer is to create a few double welt pockets and bound buttonholes. It takes a little amount of fabric and will be a great asset to the props artisan and master alike.

The dustcover is the final piece placed. Often, it is overlooked in theatrical upholstery and is missing entirely. I believe this to be a grave mistake, as the chair can look unfinished in a black box setting or yield hanging threads. If you have appropriately secured your foundations, they should not slip out and that should not be a concern. The main concern of a dustcover is its sleek uniformity. Its presence makes it difficult for nefarious vermin or bugs to make its home in your newly upholstered piece. For a quick solution not requiring a pattern, I typically use grey or black knit fabric. This utilization of this specific type of material produces a sleek look. The knit does not require interlocking, does not unravel, and saves time in worrying over tucked edges on



the final dustcover. See the picture below for further information regarding this technique. A closer look at the photo reveals that the dustcover is not fully attached by the back right leg of the chair. However, a few quickly applied pneumatic staples easily affix the dustcover. The nature of the knit fabric allows it to be stretched into place with ease around the back legs.



Figure 1.15: The knit dustcover of this chair appropriately finishes the unit.

The color chosen for the dustcover is entirely up to the upholsterer; I typically choose black or grey to make it disappear. For a more fun comedy of musical, one might choose a coordinating knit to add to the chair's whimsical design. Whenever a colour is finally chosen, just ensure that the dustcover does indeed get applied: it will be a saving grace in the event of cats who move into the upholstery's storage location.

Preparing appropriately for a reupholstery project is imperative to the success of the project. Having the appropriate tools on hand, the correct amount of materials needed for the venture, and a space that will protect the project will ultimately yield the best results. By taking these simple steps you will ensure that the scope of the project has been fully addressed and there is adequate time to complete the stage piece. Choosing the most relevant materials for its use onstage will also ensure that it will perform properly within the world of the play.



## 5 SELECTING TEXTILES: TYPE AND STYLE

Paying particular attention to the style and type of fabrics chosen for upholstery projects is of the utmost importance. It guarantees the overall look of the final endeavor by dictating its style. Further exploration of theatrical circumstances present in a production reveals flammability and stain protection requirements.

The textile chosen for your final fashion fabric should be carefully considered. Before selecting a colour palette, consider the design team's concept: the set designer's paint elevations, costume designer's renderings, and lighting designer's gel colour choices. Taking proper precautions in selecting colour ensure a cohesive materialization of the world of the play. Discuss with the set designer needs of the fabric: sustainability, type of texture, and amount of visible reflectivity. Each of these should topics should be included in initial conversations before shopping commences. Shopping for fabrics should be a relatively easy task. For metropolitan areas, this can be a quick stop to you local interior design stores. However, for more rural areas, this can be a difficult undertaking. Typically retailers will mail fabric swatches at little or no cost to the consumer. These swatches vary in size and typically should include all colors resonating throughout the fabric. With swatches in hand, more deliberation should occur; otherwise the fabric may produce a set of undertones that are undesirable. It is most practical to check with the lighting designer or investigate one self to see what happens to the fabric under stage light, as this can be the most detrimental to an upholstered project. Below, you will find a photograph of what appears to be a white tablecloth. This tablecloth served as a trousseau in the production of *Nevermore* at Greenbrier Valley Theatre in 2010. Observe what happens in stage light: the actual lace fabric had been dyed a light grey with neutral undertones. It was completely washed out by

the stage lighting. It is also noted that on the downstage side the tablecloth appears to be green. Again, this is a result of the stage lighting.



Figure 1.16: Production of *Nevermore* at Greenbrier Valley Theatre.

Further examination of a textile's flammability and stain repellent nature should be contemplated before a selection is made. The use of fire onstage has been a subject of debate for some time. Most theatres are no longer able to utilize an open flame for obvious reasons. However, it is still important to note that the upholstery onstage should be scrutinized for flammability requirements as any other element present in the scene. These requirements vary from state to state, and a simple check with the local Fire Marshall will be the most effective to procuring these results. It is advisable to speak with the current Production Manager at the theatre if such requirements have already been mandated. In an attempt to be overly cautious for fear of a lack of fire safety fundamentals, one can look to the state of California, which has the

most restrictive standards of any state. However, they recently repealed the requirement of furniture to be treated with toxic chemicals, ensuring it is flame retardant. A new law, TB 117 – 2013, mandates that the furniture pass a scorch test before it is considered safe for home use (California Bureau). Other suggested solutions include using inherently flame retardant materials. These are available from most retailers; manufacturers often make this information available to consumers. The final option is to add flame retardant. A product called Flamex is available from Rosco for treating fabrics to make it retardant to flame, but remember here that the object is *retardant* not *resistant*. Retardant costumes and upholstery alike will still catch flame under these circumstances, but they will still slow the spread of the fire. Flame applied to a Flamex-treated fabric will catch, but when the flame is removed the treated fabric will extinguish (“Stagespot.com”). As always, proper precautions must be taken when applying these products. Toxic gases, fumes, and other potential work zone hazards do exist. For more information on the types, always refer to the Material Data Safety Sheet.

The business that occurs onstage often includes food and beverages—to which we refer to as perishables. These can be any food item that the playwright so thoughtfully decided to include into their script. This ranges from baked goods or sandwiches to alcoholic drinks. Red and white wines seem to be the most common reoccurring beverage. However, these alcoholic beverages are typically not used. Replacements for red wine include cranberry juice, grape juice, and concoctions that boast the use of red and blue food colorings. These present a challenge for the prop master, costume department, and run crew: is the red wine going to spill onstage? How do we clean it from the carpet, costumes, or upholstery? The latter, upholstery, can be treated as in the real world with products such as Scotch Guard, Vectra, or with the use of a pretreated fabric. These products all boast that the fabric in question will, after being treated, not soak up the liquid

but simply bead up, creating a surface barrier between the liquid and the fabric. Luckily, the couch that I treated with Vectra has not been spilled upon in the action of a scene. While you cannot always predict what will occur onstage, it is best to prepare for the worst. In the event of the worst, at least there will be protection offered to the work that has been placed in the production.

The prop master and their team must adequately research the style of furniture requested by the set designer. This examination of the period should occur before rehearsal begins. This enables the prop master to determine the fabric results and what is available in the current market. For example, the fabric popular in the 1950s was a bouclé. This fabric exhibits a loosely looped weave. Also popular for the time was the use of interwoven metallic threads within the bouclé. This fabric can be found on chairs of the time, as well as in modern day used furniture stores. In preparing a piece that had mildewed for storage, I removed a yellow and a mauve layer of bouclé from a clamshell chair. The fabric was irreparably damaged. Unfortunately, the bouclé has faded from the forefront of modern upholstery, and is difficult to acquire. This leaves the prop master with the task of finding a suitable replacement fabric. A strategy for reupholstery must be in place leaving enough time for fabric to be ordered. Often, large amounts of fabrics can be on backorder or a retailer may not have it in their stock. More specifically, P. Tree Textiles in Baton Rouge, Louisiana has a multitude of fabrics in stock. However, there is more variety available in fabric that must be special ordered, since some vendors of P. Tree Textiles specialize in more traditional upholstery options. The vigilant attention of the prop master to research is imperative. The success of recreating a visualization of historic upholstery depends on it.

Beyond the scope of upholstery methods, it is imperative for the prop master to be able to appropriately calculate fabric yardages. As the manager of the prop department—either a one-man band or one full of skilled artisans—procuring the appropriate amount of fashion fabric is an indispensable portion of completing a successful project. Of course simply making do with the yardage at hand, whether it is in stock or the set designer’s most sought after piece on the set, can complete the upholstery undertaking. In fact, clever ways of making four and a half yards of fabric suitable for a wingback chair when really five and a half was needed yields a sort of self-satisfaction one cannot quite comprehend until the task is complete. However, the tables, which can be filled in below, should ensure a productively planned project, which will enable the prop master’s budget to not be burdened. After working an internship at an interior design store featuring textiles for draperies and roman shades, I realized that calculating upholstery fabric yardages were fairly common to those of the drapes. We will focus on the upholstery, however, with more aptitude, you; too, will realize that it is easily changed to suit another textile need. I created the below table to aid the prop master in calculating and budgeting the appropriate yardage for upholstery fabrics.

The standard dining room chair is a slip seat. This refers to the style of chair that features only a small cushioned fabric, usually able to “slip out” with the ease of removing a few simple screws. It is by far the easiest to calculate the yardage for, but care must be taken to ensure the pattern of the fabric has been accounted for. First, an example chart will be filled out filled out to show how to utilize the chart. It is broken down into four steps for ease of function. Then, a blank form will be offered for future use.

Step 1: Measurements	Numeric Calculation
Largest Width of Chair	24"
Width of Fabric	54"
Number of Chairs	6
Depth of Chair	26"
Step 2: Number of Cuts	Numeric Calculation
Width of Fabric	54"
Divided by width of Chair	24"
Divide width of chair by horizontal pattern repeat	N/A – No pattern repeat
Equals number of Cuts from a single width	2.25
Round down to nearest whole number	2
Step 3: Number of Lengths	Numeric Calculation
Number of Chairs	6
Divided by number of cuts per width	2
Equals Number of Lengths Needed	3
Step 4: Yardage Calculation	
Depth of Chair seat	26"
Times the number of lengths needed	3
Equals	78"
Divided by vertical pattern repeat	10"
Equals 7.8	7.8
Round to Nearest whole number	8
Times length of 1 cut	26"
Equals total fabric length needed	208"
Divide by 36" (1 yard)	5.7778
Round to the nearest quarter yard	6.0
Equals Amount of Fabric Needed	6 yards

Figure 1.17: Chart for calculating amount of solid fabric needed for a slip seat.

By simply entering in the appropriate measurement, one can easily discover the necessary amount of fabric for this quick upholstery job. For the most appropriate measurements, add two inches to each side of the total width and depth of the chair. This will ensure you have enough fabric to wrap around the edges of the slip seat's construction. The beauty of this diagram is that it can be utilized for more than just the slip seat. If the chair in question has a back that is also upholstered, use the same chart: just ensure to add your final amounts together for the back and the seat. Moreover, the chart can be used yet a third time, to cover the back of the seat back as

well. If the shape of fabric required is the same on the back of the chair in both the posterior and anterior, then simply multiply this calculation by two; then add the chair seat calculation. This chart simply offers a solution to calculating yardages for all single patterned chairs. Once mastered, it can be manipulated to suit a variety of needs. This example shows a fabric with no vertical pattern repeat. For a chosen textile that is a solid or simply yields a textured look, simply insert *none* to to finish calculating yardage. Let us consider a similar notion to calculating the necessary yardages for a side chair or wing back. The formatting and mathematical calculations of the exercise are very similar. An example of a wing back side chair fabric calculation is seen below. This chart has been left blank for ease of use.

<b>Step 1: Pattern Piece</b>	<b>Measurement</b>
<b>Pattern Piece A: Interior Chair Back</b>	Height:
<b>Pattern Piece B: Posterior Chair Back</b>	Height:
<b>Pattern Piece C: Arms x 2</b>	Height:
<b>Pattern Piece D: Under Arm Sides x 2</b>	Height:
<b>Pattern Piece E: Seat</b>	Largest Width:
<b>Pattern Piece F: Inner Wing</b>	Height:
<b>Pattern Piece G: Outer Wing</b>	Height:
<b>Pattern Pieces F-J: Boxed Seat Cushion</b>	Depth:
<b>Step 2: Number of Cuts for Each Pattern</b>	<b>Calculation</b>
<b>Width of Fabric</b>	
<b>Divided by Largest Height of Chair</b>	
<b>Divide Height of pattern piece by vertical pattern repeat</b>	
<b>Equals number of Cuts from a single width</b>	
<b>Round down to the nearest whole number</b>	
<b>Repeat Step 2 for all Pattern Pieces</b>	N/A
<b>Step 3: Number of Lengths</b>	<b>Numeric Calculation</b>
<b>Number of Pattern Pieces</b>	
<b>Total Amount of Lengths in Inches</b>	
<b>Divided by 36"</b>	
<b>Round to the Nearest Quarter Yard</b>	
<b>Add whole number from each step 2 calculation</b>	
<b>Amount of Fabric Needed</b>	

Figure 1.18: Example of how to calculate for a wingback chair.

The number of required pattern pieces in the project determines how many times the fabric must be calculated: measurements of each piece must be considered. Moreover, step 2 should be repeated multiple times for each pattern piece. This ensures that the width of the fabric is wide enough for the project. Otherwise, the fabric may have to be railroaded. More information on railroading fabric will be discussed when considering the standards for a sofa or loveseat. Side chairs featuring a curved back should use the full measurement of the curve to calculate the appropriate yardages. Measurements can be taken directly from the chair. Always add a few inches to each height measurement to ensure the fabric will wrap around the edges. However, it is also possible to take the exact measurements of the fabric once you have removed the original from the chair. I prefer this method, as it is more exact, but it is not a great way to determine needs in a preliminary budgeting.

The final fabric calculation standard is for the couch, sofa, or loveseat. The most important factor here is selecting a textile that can be railroaded. Railroading a fabric refers to changing the directionality. If slip seats, side chairs, and wingbacks are calculated with the fabric going up the roll, railroading a fabric turns the roll ninety degrees. This changes your largest depth of the seat to the width of the fabric. The width of the fabric needed for the couch (for example, the posterior of the seat back) becomes the length of the bolt. A caution when covering a sofa with a patterned railroaded fabric: ensure that the fabric is not directional solely to its original direction. Specifically, if the fabric contains printed birds, ensure that the birds are scattered in unidirectional ways. Otherwise, railroading a fabric will not be ideal in this situation. It will result in the bird's feet facing the arm of the chair, and from a front view, will look highly odd. Choose a pattern that suits being railroaded or used in the traditional direction, as it will benefit the final result of the upholstered piece. The chart for the wingback is to be used for the



calculation of a sofa yardage. Similar to the wingback or side chair, step two of the chart should be used multiple times to cover all pattern pieces for the sofa, then, added up the final amounts to reveal the number of yards needed to complete the project. A reminder to add a few inches to measurements as certain lengths; the chair seat sides, for examples, are hidden and may require more inches than a flexible tape measure reveals in your initial measurements. To accommodate for this, I typically add one yard to my final calculations.

The last piece of advice regarding calculating fabric yardages is that of trim. When creating piping or welting for an upholstered chair, measure all edges where you would like the piping to be place. Add up the measurements inches and divide by 36, which will give you the number of yards that you require. A good rule of thumb is that 1 yard of fifty-four inch fabric (the standard for fabrics meant for interior use) can create 10 yards of 2-inch bias strips. That is to say, these 10 yards of bias strips will create 10 yards of welting. Just ensure you have the inner cord or rope that will be necessary to insert to create your piping. Tradition cord or rope is approximately one quarter inch or less in diameter. Please note that this is a small measurement, and the amount of welting that is able to be created from 1 yard of fifty-four inch fabric will dwindle if you use a larger size cording. Adjust accordingly if this is the case.

For premade trims and cording, follow the same measuring system: measure all sides of the upholstered furniture that will have trim, add them up, and divide by thirty-six. This will give the amount of yards needed. Then, simply purchase the number of yards you have calculated. As a standard for all of my projects requiring trim and fabric, I always recommended getting at least one half yard or whole yard more than what is calculated. This will accommodate for difficult corners, operator error in calculation, and the discovery of an extra location to place trim.

Calculating fabric yardages and yardages for trim have now become an easy task. By applying these simple mathematical formulas to all of your upholstery projects, you can determine the true amount of fabric needed for the project. The guesswork and uncertainty has been removed once and for all. I have had experience using the charts manufactured by Hancock Fabrics and other upholstery venues, but have never had great results in referring to the bulk measurements recommended. This is because it does not take the true measurements into account. As a result, there are typically up to 3 yards left by the wayside to sit in the prop shop fabric stock awaiting use. While this can be handy, it can also be a detriment to those needing all of the storage space they can muster. In addition, the preciseness of knowing how much fabric is needed for a project greatly aids the prop master in budgeting a production. The next chapter will define the last few suggestions that I have found as I approached upholstery projects, summarize this entire venture, and give a final few tips and tricks to aid in the progress of the prop master's upholstering.

## 6 REUPHOLSTERY CURTAIN CALL

Before fully parting ways, I would like to mention a few final thoughts considering personal library books to keep on hand, a few upholstery tips and tricks, and finally addressing how to keep an upholstered item well-maintained in a stock area. To aid in the prop upholsterer's efforts, I recommend a few books to have on hand in the library. In my personal library, I have obtained approximately twenty books that detail upholstery work. The ones that I suggest here are indispensable and should be obtained in a beginner's library, but nevertheless, every book can offer a new perspective or insight into this diverse field.

The first in the series is *New Essentials of Upholstery* by Herbert Bast. Published in 1946, this dated but excellent volume provides questions at the end of every section to help the student of upholstery learn the techniques of traditional upholstery methods. Moreover, it gives a detailed section on the materials used. Herbert Bast wrote two additional books worthy of the prop master's eyes: *Essentials of Modern Upholstery*, which includes the use of foams and serpentine springs and *Easy-to-Make Slipcovers*—which provides a great guide to making form fitting covers for already full upholstered pieces. A slipcover, however, requires more sewing skills and provides a particular look that may not be desirable in all productions.

The next text is *The Complete Upholsterer* by Carole Thomerson. Another text great for the student and professional alike, it is written with a wonderful tone that is not as dry as some “how-to” books. Academicians will enjoy this book as well since it includes a brief history that I also used in researching this thesis. It, too simply focuses on the original methods of upholstery, featuring information about tufting horsehair and other techniques not terribly useful for the stage. However, this book does offer color photos to enhance the learning experience, while

Bast's volumes echo the time period in which his books were written with black and white photography.

The final edition that I will recommend for the prop master's library is *The Complete Guide to Upholstery* by Cherry Dobson. Published in 2009, this book features color photographs and drawings of step-by-step techniques, which is invaluable to the process of learning to upholster. Moreover, it details how to best place the components of an upholstered piece's into the fashion fabric. This section is what makes this book invaluable. Once this skill is learned, the prop master can make their own conclusions on how to best calculate yardages, as I have done in chapter five. These resources are invaluable to the prop master. They are varied in their content to warrant owning each volume. I can definitely say that they have been a wonderful resource to my projects as I have moved forward in my upholstery studies. I believe such time as I upholster the couch seen in this thesis, that I stopped referencing the books and began manipulating my own methods.

Lastly, I have few conclusive suggestions when approaching an upholstery task. Take note of the list of tools required for the prop master. Please note that it includes spray paint. By spraying a row of staples and letting it dry before insertion into a pneumatic stapler, one can hide the shiny reflective portion of the staple in the upholstery. If necessary, these can be left and no one in the audience would be the wiser. Be cautious not to apply too much paint, as the pneumatic stapler will suffer from the thickness applied to these rows of staples. Another consideration concerns ordering fabric. Remember to plan carefully if you need to order large amounts of fabric from a retailer. Fabric can be on backorder, so be prepared for the possibility with a second fabric selection, a backup for the backordered.

The prop master should always consider their stock and what they have room for within that stock. A meticulous consideration of how an upholstered item is to be stored is essential to keeping a theatre's prop stock exploitable to the needs of the theatre. Awareness of the conditions in the storage location including whether it is dry or damp is essential to determining what and how it is best to place objects there. Be wary of mold and insects, as these can quickly find homes in an upholstered item. Windows should be covered to prevent fabrics from fading. Another option to prevent the discoloration of fabrics is to use a blackout lining to use as a cover over the upholstery pieces in question. Utilizing this type of lining will deter the sun from damaging newly covered pieces as time progresses.

For more information regarding the trade of the prop master, I recommend you seek out these recent publications on prop mastery: *The Prop Director's Handbook* by Sandra Strawn and *The Prop Building Guidebook* by Eric Hart. Both of these books approach prop mastery from different angles: the former being that of the manager and the latter the construction side and fabrication side of props. Both books have been released in the last few years, which indicate a need for documentation among the prop profession. Guides such as this one are finding an increased need across academic and professional worlds. Finally, for direct prop master mentorship, the student or new prop master can seek out S\*P\*A\*M—the Society of Prop Artisan Managers. Founded by a group of prop managers from around the United States, this group specializes in unifying the prop world for the betterment of the occupation. They feature forums, which trade vendors for prop specialties like fireproof greenery and discuss recommended blood recipes. Although its membership is exclusive to current prop managers at professional theatres or academicians with the title of prop master, the group offers a mentorship program for props students and young graduates yearning to delve into props professionally.

Prop masters have the extraordinary task of taking on a diverse to do list. The work fulfilled by prop masters on upholstered furniture is extensive, to say the least. The amount of careful planning and consideration to make a piece of furniture appropriate for stage use requires a watchful eye and vigilant thought process. To make it appear comfortable for the stage is an even greater task. In addition to daily tasks of acquiring hand props, personal props, and paper props the prop master is never at a loss for undertaking significant duties necessary for completing a production. To the prop master reading this: break a leg in your upholstery endeavor and prop on!

## REFERENCES

- Aronson, Joseph. *The Encyclopedia of Furniture*. Second ed. New York: Crown, 1965. Pg. 189-190. Print.
- Bast, Herbert. *Easy-to-Make Slip Covers*. USA: Bruce, 1941. Print.
- Bast, Herbert. *New Essentials of Upholstery*. Milwaukee: Bruce Pub., 1946. Print.
- Bast, Herbert. *Essentials of Modern Upholstery*. Milwaukee: Bruce, 1963. Print.
- California Bureau Of Home Furnishings And Thermal Insulation And Appliance Repair. "Technical Bulletin 117-2013." *Technical Bulletin 117-2013 (Attachment 11)* (n.d.). Department of Consumer Affairs: Bureau of Electronic Appliance Repair, Home Furnishings and Thermal Insulation. State of California, 2015. Web. Feb. 2015. <<http://www.bearhfti.ca.gov>>.
- Congram, Marjorie. "Horsehair in the 18<sup>th</sup> Century." *Horsehair: A Textile Resource*. Martinsville, NJ: Dockwra, 1987. p. 14. Print.
- Cooke, Edward S., Jr., ed. *Upholstery in America & Europe from the Seventeenth Century to World War I*. New York: W. W. Norton, 1987. Print.
- Cookson, Mrs. Nesfield. *Small Stage Properties and Furniture*. First ed. London: George Allen & Unwin Brothers, 1934. Pg. 33. Print.
- Dobson, Cherry. *The Complete Guide to Upholstery: Stuffed with Step-by-Step Techniques for Professional Results*. New York: St. Martins' Griffin, 2009. Print.
- Engler, Nick. *Nick Engler's Woodworking Wisdom*. Emmaus, PA: Rodale, 1997. Print.
- Gottshall, Franklin H., *Making Antique Furniture Reproductions: Instructions and Measured Drawings for 40 Classic Projects*. New York: Dover Publications, 1994. Print.

Hart, Eric. "Chairs for Tea." *Prop Agenda*. WordPress, 16 Feb. 2011. Web. Nov. 2014.  
<http://www.props.eric-hart.com/how-to/chairs-for-tea/>.

"StageSpot.com." *Flamex Retardant*. N.p., n.d. Web. 18 Mar. 2015.  
<<http://www.stagespot.com/flammex.html>>.

Strawn, Sandra J. *The Properties Director's Handbook: Managing a Prop Shop for Theatre*. Burlington, MA: Focal, 2014. Print.

Thomerson, Carole. "The Search for Style." *The Complete Upholsterer: A Practical Guide to Upholstering Traditional Furniture*. New York: NY: Knopf, 1996. 32-37, 44. Print.

Thornton, Peter. "Upholstered Seat Furniture in Europe, 17th and 18th Centuries." *Upholstery in America & Europe from the Seventeenth Century to World War I*. New York: W. W. Norton, 1987. 29, 33-37. Print.

Trent, Robert F. "17th-Century Upholstery in Massachusetts." *Upholstery in America & Europe from the Seventeenth Century to World War I*. New York: W. W. Norton, 1987. 44-45. Print.



## **VITA**

Kathryn Leigh Brittingham grew up in southwestern Pennsylvania. Kate became involved as a performer in theatre at a young age. From this formative age, she frequently attended auctions with her mother and grandfather, where she learned of antiques and their counterparts: antique upholstery. Kate went on to study theatre at California University of Pennsylvania where she received her degree in the Bachelor of Arts in May of 2009. A true arts enthusiast, she minored in musical theatre and music. After graduation, she worked for Greenbrier Valley Theatre in Lewisburg, West Virginia as an intern and eventually full-time staff as the Properties Master and Box Office Manager. Realizing a great interest in stage props, Kate endeavored to attend Louisiana State University's program to further receive further education in technical theatre and stage property construction methods.