# Mounting Historic Dress for Display

DATS
Dress and Textile Specialists

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ARTS COUNCIL ENGLAND

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This booklet has been produced to accompany a two-part course of the same name held at The Clothworkers' Centre for the Study and Conservation of Textiles and Fashion, V&A, London, and also at the Fashion Museum, Bath and at the Gallery of Costume, Manchester, in 2014-2015. We hope to repeat the course at other museums. The course is one of a series of training opportunities produced in collaboration between DATS and the V&A, funded by the Arts Council England's Subject Specialists Network fund.

The purpose of the course is designed to teach the fundamentals techniques required to mount historic dress for display and photography, and to put these into practice with the guidance and support of experienced tutors. This booklet will share knowledge communicated in the workshops with colleagues and the wider public.

Other workshops/booklets in the series:

Identifying Handmade and Machine Lace (2007)
Identifying Textile Types and Weaves, 1750 -1950 (2007 & 2012)
Identifying Printed Textiles in Dress 1740 – 1890 (2007 & 2012)
Identifying Fibres and Fabrics (2012)
Identifying Hand-made Lace (2013)

Front cover image: T.27-2006. Block-printed day dress worn by Sarah Maria Wright for her marriage to farm-labourer Daniel Neal, 27th July 1841.

# Mounting Historic Dress for Display

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# Mounting Historic Dress for Display

## Introduction

Mounting historic dress can be challenging even for experienced dress curators and conservators. This booklet and the accompanying course and loans box have been developed to provide a starting point for colleagues to develop their practical skills to enable them to interpret their collections for their audiences.

The course is intended to help participants develop the necessary skills and areas of knowledge:

- Best practice in handling historic dress and textiles.
- How to assess an object for damage and areas of stress, and how to document this.
- How to assess if an object is suitable for display and when remedial conservation may be necessary, and when to bring in a conservator.
- How to accurately measure an object.
- How to choose the style and nature of a support/mount/figure.
- How to make a toile.
- How to start researching the correct silhouette, what underpinnings are required and how to design and make them.
- How to pad a figure and cover with suitable fabric.
- Knowing which stitches to use and how to execute them.
- Which conservation standard materials to use and where to purchase them from.

After completing the course we hope that delegates will be able to approach display of historic dress with greater confidence.

This booklet will be available to download free of charge from the DATS website (www.dressandtextilespecialists.org.uk) from Summer 2015.

A loans box has been developed to work alongside this booklet giving people the chance to examine sample underpinnings and their patterns, swatch samples of conservation-grade materials and a copy of Lara Flecker's book, *A Practical Guide to Costume Mounting*. This can be booked via the DATS' website (www.dressandtextilespecialists.org.uk) from Summer 2015, free of charge, but borrowers are responsible for all postage and insurance costs.

Jenny Lister (ACE liaison officer, DATS and Curator, Textiles and Fashion, V&A)
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# General Guidelines for the Safe Handling of Costume and Textiles

Susana Fajardo

Inappropriate handling is one of the main causes of damage to museum objects. As a rule, handling should be kept to a minimum. No matter how small a distance you are transferring objects over, the risk of any damage occurring can be reduced by good preparation and following the procedures outlined below.

## General Guidelines

### Before you start

*Are you a risk?* Check that personal effects such as loose clothing, long hair or jewellery will not be a hazard. Rings, bracelets, watches, long necklaces, long hair, ties and identity passes should be removed as they may interfere with objects. Wearing flat comfortable shoes with non-slip soles should prevent any risk of slipping or tripping on polished or uneven surfaces.

*Plan the route* The route should be checked to ensure that it is free of obstacles such as furniture, cables or barriers. It is important that doorways are wide enough, steps are easily negotiable, everywhere is well lit and lifts that you are planning to use are operating. If the route includes areas open to the public try to avoid them or use quiet routes. Some objects are better moved when the museum is closed to the public. Never negotiate opening or closing doors while carrying objects, put the object down and wedge the door.

*Access* The end location should also be checked to confirm that it is suitably prepared to receive objects. A set of steps with a platform and support rail should be used for objects on high shelves. In this situation a second person should be available to pass the object to.

*Never alone* Travel in twos or more, one person will have hands free to open doors, position themselves in between the traveling object and the public, and be able to fetch or move anything or anyone that is not where it/they are supposed to be.

*Container/Trolley* If an object is being moved from one room to another, it should be placed in a container. This is much safer and easier than carrying the object in your hands. A padded box will provide good protection. Arrange the appropriate container and trolley for your object. For example, a tray or a basket, a table top trolley, A-frame or U-shaped trolley. No parts of an object should be allowed to overhang the container where they might catch or knock against something. The weight should be spread evenly over the container. It is a good idea to count objects in

and out of the container to ensure small objects or fragments do not get overlooked.

## Check the object

*Condition & structure* Examine the object carefully before handling to determine if it has any structural weaknesses, previous damage or fragile surfaces. If in doubt consult a conservator. An object may consist of multiple parts. If so, consider if it is safer for those parts to travel together or separate. The object should travel in a suitable orientation, e.g. vertical or horizontal.

*Size & weight* The weight and shape of the object will dictate how many people and the type of equipment necessary to lift and move it safely. Some particularly large, heavy or awkward objects may require more than one person to lift them or the help of other members of staff. It is important that the lifting operation is performed in unison – so count it in – e.g. '1, 2, 3 lift'.

## Handling

*Don't touch!* The fundamental rule should always be: **keep handling to a minimum.**

*Gloves* Different materials have different requirements. Some objects will require use of nitrile gloves OR no gloves. Avoid latex gloves for metal objects or objects with metal parts; latex contains sulphur which can cause tarnishing. Avoid cotton/textile gloves as they can be slippery and catch. Non-slip black dots on material gloves can leach plasticisers and leave marks.

*Support* Only one object should be lifted at a time with both hands. The main body should generally be supported with one hand below its centre of gravity, using the other hand to steady it. Support materials should be of conservation grade (meaning they should not chemically interact with the object or leave residues). Acid free tissue paper wads can be used, as can other suitable materials, including Plastazote®, polyethylene foam and Tyvek®. (Bubble wrap, newspaper or pressure sensitive tape should never be used in contact with an object).

*Space* When removing objects from a store or case, the path should be made clear by moving other objects out of the way. Ensure that larger objects do not touch the top or sides of the case/storage space. No object should be lifted over another. Be aware of shelf height and surrounding objects, concentrate when holding an object!

*Tip* It is safer to use pencils around objects rather than pens as ink is much more problematic to remove in case of accidental staining.

# Health and Safety

## Manual handling

Lift wisely with a straight back, lift using your legs keeping the centre of gravity close to you. Do not move anything that you are not confident moving. Heavy /awkward/complex objects might need to be moved by more than one person or by other members of staff (e.g. Front of House) using equipment with trained operators.

## Hazards in objects

Objects in many museum collections can pose health and safety hazards.

**Examples**

Hazards can be physical hazards in the form of sharps (glass, blade weapons, and loaded firearms). Commonly found inherent hazards include heavy metals, such as lead or mercury in pigments. Inadvertent health hazards such as mould spores and rodent excrement may also be present. Acquired hazards vary, e.g. in the past museums applied pest-control materials containing arsenic, mercury, 1,4-dichlorobenzene (para-dichlorobenzene or PDB), and ethylene oxide. Less commonly found hazards include radioactive substances (uranium salts as a glass colourant), organic poisons (poison arrows), and explosive ordnance (incendiary bomb).

**Concerns?**

If in doubt about handling an object with regards to your or anyone else's health and safety, check your institution's *Hazards in Objects Policy* and *Health and Safety Policy*.

# Textile and Dress Guidelines

## Condition & structure

Before handling ascertain overall condition, establish whether areas of concern are local or widespread.

- Textiles cover a wide variety of objects: flat textiles (from tapestries to a piece of lace), 3 dimensional objects (e.g. costumes), composite objects, upholstered furniture, and costume accessories.

- Fragile by nature, their condition, structure and form can be deteriorated by:
    - previous damage (e.g. mechanical: poor handling, poor storage, wear and tear);
    - soiling and stains which are often acidic and can make a textile brittle;
    - biological damage (insects, rodents and micro-organisms);
    - visible and invisible-light UV and infra-RED radiation(loss of colour, weakened fibres, desiccation, and yellowing);
    - fluctuation of Relative Humidity (RH) and Temperature(drying and embrittlement under low RH conditions to corrosion, staining and migration of dyes under high RH conditions);
    - atmospheric pollutants (e.g. dust particulate deposition);
    - structural weakness due to original manufacture and design (e.g. metal salts from textile finishes and after treatments, degradation of decorative printed and painted layers, heavily beaded dresses);
    - old repairs, (e.g. coarse and cobbled);
    - previous conservation treatments (e.g. failing past adhesive treatments, failing conservation materials.

## Gloves - Nitrile or vinyl gloves:

- Although the use of nitrile is generally recommended. In some case such as the dressing and undressing of costumes clean hands which have just been washed is preferred.

- Always use gloves when metal components are present (metal threads, metal decorations, and metal tissue fabric) as fingerprints can damage and etch metallic finishes.

- Nitrile or vinyl gloves are mandatory PPE (personal protective equipment) when handling objects with hazardous substances, e.g. felt hats which may contain mercury, some painted textiles, and feather and fur trims which may contain traces of pesticides).

## Support

- Any textile or costume must always be supported sufficiently to avoid any risk of damage under its own weight. This becomes particularly important when moving them.

- The condition of the object will determine whether the textile or costume is supported vertically or horizontally, preferably is it best to support textiles and costumes as horizontally as it is possible.

- Time span is crucial: the longer the support is required for the greater or more robust the support should be.

- Flat textiles can be supported flat on padded boards, Correx® or acid-free-card boards, or rolled. Large flat textiles can be rolled on sufficiently robust cylindrical tubes to withstand the weight of the object and to avoid the warping of the tube. Use Plastazote® blocks to support the rolled object enough to avoid risk of crushing.

- When rolling is not possible a 'concertina' method is applicable, making sure all folds are padded and all layers interleaved.

- For costumes, support the object in the most fragile areas (large holes, splits, areas of any heavy decoration attached). If the costume is large and heavy one person lifts the costume by placing the hands inside the shoulders and the other supports lower section of the costume.

- If possible, when mounting, place the costume on/ off one shoulder/ arm at a time. When both arms need to be dressed simultaneously, do so with great care and a gentle easing action;

- Conservation made 'bean-bags' (cotton jersey filled with polystyrene beads) are useful when supporting small 3 dimensional objects.

- When moving or lifting a dressed mannequin, hold from the base and the neck. Move slowly and avoid tilting the mannequin.

## Space

Check object size and prepare a large enough space in which to work: ensure surface is clean, lay acid-free tissue or polythene sheeting and a cushioning layer if necessary. Make sure there is adequate light to work.

## Container/Trolley

- Pad hard ridges of metal trolley with Plastazote®.

- Use weights to restrain objects whilst moving.

- Line boxes and trays with acid free tissue, add cushioning if necessary.

- Large flat textiles are best moved rolled.

- Smaller flat textiles can be stacked in a tray or flat container to move.

- Containers for 3 dimensional textile objects should be large enough to avoid stacking. Allow sufficient room for padding and protect the object securely.

- Dressed mannequins can be moved in groups (in a trolley), or individually (in a skate or slide).

- Protect the train in costumes on acid free tissue or a dust sheet on the base of the trolley, or wrap the costume inside a protective custom made Tyvek® bag.

## Health and Safety

**Some potential hazards specific to textiles**

Toxic gasses and vapours from ageing processes (e.g. early plastics), stains and accretions (residues of organic products and or body decomposition products), the weight of particular objects (e.g. large rolled flat textiles), awkwardly shaped objects (e.g. dressed mannequins which must kept upright when lifted), working at height (e.g. installing large flat textiles), the presence of hazardous substances (e.g. lead, arsenic, mercury), fungal growths (mould and mildew).

## Examples of Handling and Packing for Short Distances

Flat textile on a board

Flat textile rolled

Flat textile concertina

Sufficient help at hand

Moving costumes on a rail

Costumes on a padded hanger

Moving a mannequin

Correct labelling when handling object with hazardous substances

## Recognizing Weakness

### Examples of areas of potential vulnerability to be aware of when examining and object before handling

Pull in the weave.

Carpet beetle damage

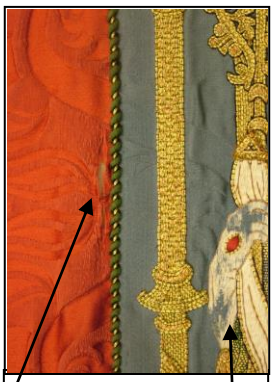
Moth damage and frass

Fungal growth: Mould deposits can be black, blue, green or red

Fungal growth: Mildew are whitish growths

Tapestry weave, stitched and interlocked slits

Tapestry weave, step slits



Splits in red silk due to proximity to a heavy embroidered panel & abrasion of surface, and loss of embroidery.

Corrosion of metal caused by coating on imitation 'pearls'

Damage to gelatine sequins caused by

Silk 'rose' with many splits, the worst are encapsulated but are still vulnerable

Missing diamanté stones from buckle on evening gown

# Measuring Costumes and Selecting Mannequins Lara Flecker

Measuring a costume is not as straightforward as it sounds and it is important to be able to do this accurately when mounting costumes for display. In particular this is crucial when selecting a figure for a costume, whether recycling an old torso or purchasing one new. Size of a mannequin, however, is only one part of its selection criteria and several other factors should be taken into consideration when making decisions about costume mounts.

This section will include the following:

- Mannequin/figure selection;
- Measuring costumes and figures;
- A simple technique for making quick toiles.

## Selecting mannequins

Mannequins and torsos come in many shapes, styles, sizes, finishes, materials and prices.

- When selecting a figure, consideration should be given to the following:
    - the physical state of the costume;
    - the display conditions;
    - the structural stability of the figure;
    - the adaptability of the figure;
    - the aesthetic appeal of the figure;
    - the cost of the figure;
    - the pose of the figure;
    - the fixtures and fittings of the figure;
    - the materials the figure is made from.
- When mounting historic costume, a figure should be chosen that is significantly smaller than the garment.
- Be aware that it can often take a long time for manufacture and delivery of figures.

### Materials

- As a general rule avoid figures made from high-density urethane and polyurethane foams.
- As the substances used in the manufacture of mannequins and paints vary, it is impossible to guarantee the stability of any material without proper testing. However, figures made from

fibreglass, Plastazote®/Ethafoam®, buckram, Perspex®and wax are thought to be comparatively safe, as are water-based emulsions and cellulose paints.

## Customised figures

- Getting a figure custom made can be expensive and time consuming.
- It is usually a collaborative process requiring several fittings.
- Smaller alterations can be made to mannequins that are more affordable such as removing the bust.

## Dress stands

- Dress stands are widely used in many museums and galleries, including the V&A.
- Although the materials they are made from are not perfect, they have many advantages:
    - They are cheap, sturdy and come in wide range of sizes;
    - Arms, heads and even legs can be added if required;
    - The fabric cover provides a ready-made foundation on to which padding can be stitched;
    - They are adaptable, making them easy to recycle for different displays and particularly suitable for use with historical costume.

# Measuring Costumes

## General Notes

- Whenever possible take your own measurements of a costume, don't rely on other people's.
- When selecting modern figures for historic dress, always choose a figure that is considerably smaller than the garment.
- Use the back nape to waist measurement to judge where the waist of a garment will sit when dressed on the figure.

## Practical tips

1. Lay the costume out on a clean surface with access to good light.
2. If possible use a narrow tape measure (approximately 1 cm wide).
3. Take measurements twice to get the most accurate reading.
4. Take vertical measurements from the outside of the costume.
5. If possible, take circumference measurements from the inside of the costume, where the garment is at its smallest.
6. Circumference measurements should be supplemented with a position reference (i.e. where the measurement was taken from in relation to the waist).
7. Ensure that measurements do not include button overlaps or placket openings.
8. Always estimate a back nape to waist measurement even if it is not evident from the costume.

## Where to Take Basic Garment and Figure Measurements

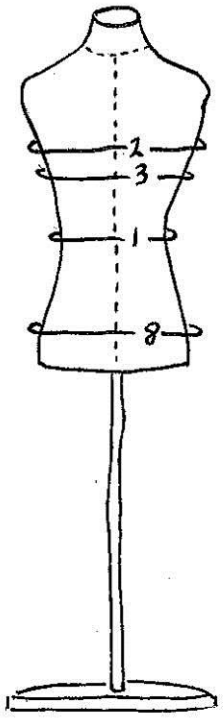
N.B. The numbers in the first column in the tables cross-reference with the numbers on the key of where to take your measurements on page 19. Use the forms on pages 20-21 when taking these measurements.

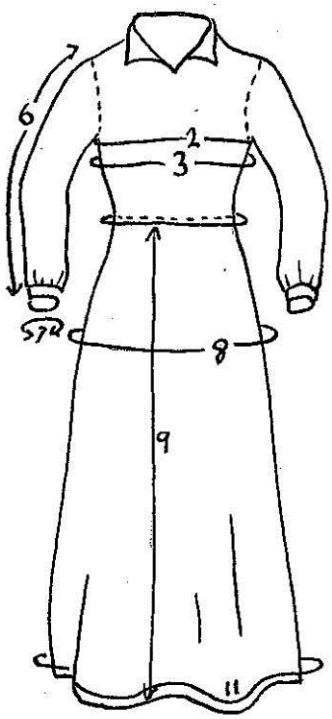
| Upper Torso and Arm Measurements | | | |
|---|---|---|---|
| **Measurements** | **Location on a figure** | **Location on a costume** | **Reference position** |
| **1. Around waist** | The waist is usually the narrowest part of the figure between the hips and bust. The measurement is taken around the entire waist circumference. | Usually easily recognisable by seam and dart shaping or the position of waistbands. | |
| **2. Around bust or chest** | This measurement is taken over the fullest part of the bust or chest, under the arms and across the back, keeping the tape measure as level as possible. | The level of the bust can be located at the farthest tip of the bust darts. If there are no darts the measurement should be taken from just below the armhole. | Measure the reference position from bust line to waistline |
| **3. Around ribcage** | This measurement is taken directly under the bust, around the body and across the back, keeping the tape measure as level as possible. | Locating the level of the ribcage on a costume can be difficult. If it is unclear, the measurement should be taken approximately 7 – 9cm below the bust line. | Measure the reference position from ribcage to waistline. |
| **4. Across back** | This is a flat measurement taken across the back of the figure, from the crease of each arm, approx. 14 – 15cm down from the shoulder point. | This measurement is taken in a straight line across the back of the costume, from armhole seam to armhole seam. The measurement should be taken approx. 14 – 15 cm down from the shoulder point. | |
| **5. Nape to back waist** | This is the distance from the nape of the neck to the CB waist. If uncertain where the nape is, drape a tape measure around the neck of the figure and allow it to fall naturally. The nape can be found where the bottom edge of the tape measure rests on the CB neck. | Unless the costume is cut with a high neckline, this measurement must be estimated. To do this take the shoulder point to side waist measurement and add 4- 5cm, or use a nape to waist estimator. | |
| **6. Length of arm/sleeve** | This measurement is taken with the arm slightly bent. Measure from the shoulder point, around the tip of the elbow to the wrist. | If the sleeve is straight, simulate an elbow by arranging it into a slight bend on the table. The measurement should be taken from the sleeve head/shoulder point, around the tip of the elbow to the cuff. | |
| **7. Around wrist/cuff** | This measurement should be taken around the wrist. | This measurement should be taken around the cuff or hem of the sleeve. | |

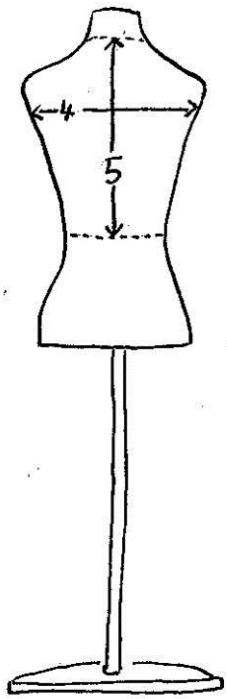
| Lower Torso and Skirt Measurements | | | |
|---|---|---|---|
| **Measurements** | **Location on a figure** | **Location on a costume** | Reference Position |
| **1. Around waist** | As with the upper torso | When dealing with skirts that are separate from the bodice, it is important to take waist measurements for both. Skirts usually have a waistband that makes this measurement easy to take. | |
| **8. Around lower hip or bottom** | This measurement is taken around the figure at the fattest part of the bottom. It can usually be found approximately 20cm below the line of the waist. | Though the bottom is the fattest point of the lower torso it is still sometimes difficult to locate on a costume. If this is the case the measurement should be taken approximately 20cm below the line of the waist. | Measure the reference position from the level of the bottom to the waistline |
| **9. Front length of skirt/leg** | This measurement is taken from the CF waist of the figure to the top of the foot. | This measurement is taken from the CF waist of the costume to the hem. | |
| **10. Back length of skirt/leg** | This measurement is taken from the CB waist to the floor. | This measurement is taken from the CB waist of the costume to the hem and should include any skirt extension or train. | |
| **11. Around hem of skirt/leg** | This comparative measurement can be taken 'around the ankles'. | This measurement is taken around the hem of the skirt. If the costume includes a train, the around hem measurement may be misleading. To gauge it more accurately, lay the tape measure horizontally across the train rather than going around the outside edge. | |

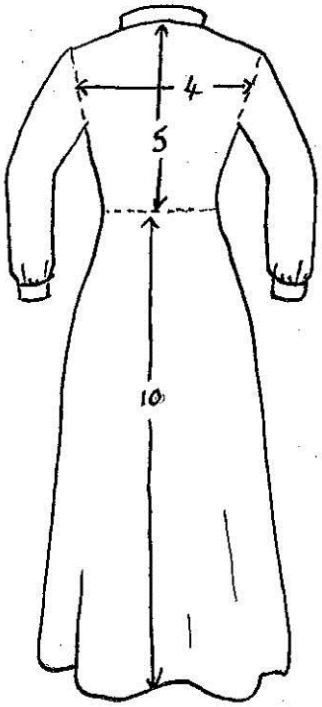
## Key: Where to Take Measurements

N.B. The numbers in the key cross-reference with the numbers in the first column of the previous tables on pp 17-18.



| Costume Measurement Form | | | |
|---|---|---|---|
| | Measurement | Reference Position | Notes |
| 1. Around Waist | | | |
| 2. Around Bust or chest | | | |
| 3. Around Ribcage | | | |
| 8. Around lower hip or bottom | | | |
| 4. Across back | | | |
| 5. Nape to back waist | | | |
| 6. Length of arm/sleeve | | | |
| 7. Around wrist/cuff | | | |
| 9. Front length of skirt | | | |
| 10. Back length of skirt | | | |
| 11. Around hem of skirt | | | |
| | | | |
| | | | |
| | | | |

| Torso Measurement Form | | | |
|---|---|---|---|
| | **Measurement** | **Reference Position** | **Notes** |
| **1. Around Waist** | | | |
| **2. Around Bust or chest** | | | |
| **3. Around Ribcage** | | | |
| **8. Around lower hip or bottom** | | | |
| **4. Across back** | | | |
| **5. Nape to back waist** | | | |
| | | | |
| | | | |
| | | | |
| | | | |

## The Quick Toile Method

### Instructions

1. Before starting consider which parts of the costume you need to copy – generally only the bodice is required.

2. Dress the costume on a figure and when necessary support with temporary padding.

3. Start at the centre front and cut a piece of tissue large enough to overlap the front panel. Using a ruler and pencil, draw a line and mark as the straight of grain.

4. Lay the tissue over the panel matching the pencil line to the straight of grain. Hold the paper in place by pinning to the neck of the figure. (A small piece of low tack masking tape can be substituted when working on a solid figure.)

5. Repeat the same process for the panels at the centre back.

6. Cut tissue for the side panels. Mark on the straight of grain and position each piece over the bodice, matching up the grain lines. To hold them in place, join them to the centre front and centre back panels with pins, following the line of the seams.

7. Join the front and back pattern pieces together along the shoulder with pins.

8. Ease the paper around the neck and arms by tearing the tissue into short tabs.

9. Improve the shape and accuracy of the pattern by working down each seam line, repositioning the pins and tightening up the tissue until it fits closely over the costume.

10. Using a soft pencil, trace the neck opening, armholes, hemline and seams onto the tissue pattern. Remove the pattern from the costume, making sure that each panel is labelled before it is unpinned.

9. Even up the pattern as necessary and add balance marks to the seams.

10. Use the tissue pattern to make up a fabric toile. Alternatively, the pattern pieces can be stitched or pinned together as they are and used as a paper toile.

*Example of a quick toile pattern being taken from a dress*

# Padding and covering a dress stand

Sam Gatley

Good padding of a dress stand is what forms the basis of a successful costume mount. The padding performs two key functions in transforming limp textiles into 3-dimensional objects. The first of these is to offer support to garments. Padding should follow the shape and size of the garment in a way that supports the textile and does not introduce stress and strains into the fabric.

The second function is interpretive as padding is applied to simulate the fashionable body shape of the period showing the garment to its best advantage.

This section will include the following:

- Tips and templates for fitting the costume onto the figure.
- Padding the figure with polyester wadding.
- Covering the figure in stretch cotton jersey.

## Tips and templates for fitting the costume onto the figure

### A Few Fitting Points to Watch Out For

Shoulders too narrow, the unsupported dress drops drastically away at the shoulder.

Mannequin bust the in wrong position.

Dress sitting too low on the waist, particularly at the back, preventing the waistband from sitting straight.

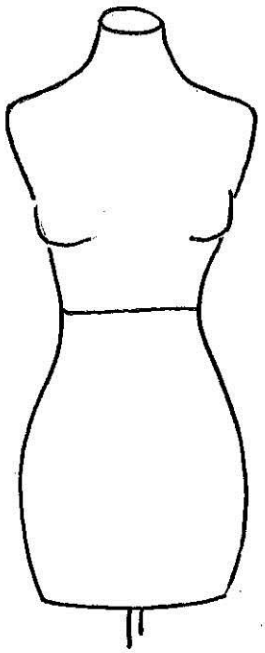
Sleeves unsupported and therefore sitting too low and too far back. The fullness of the sleeve is in an incorrect position.

Skirt unsupported and therefore pulling the waistband out of position. Also, not at the correct fullness, therefore hiding the embroidery which should be a focal point.

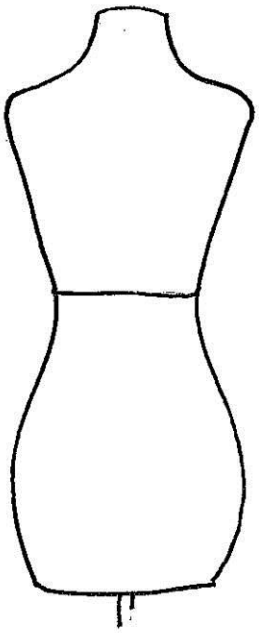
## Torso padding diagram

| | |
|---|---|
| **Costume** | |
| **Project** | |

Front



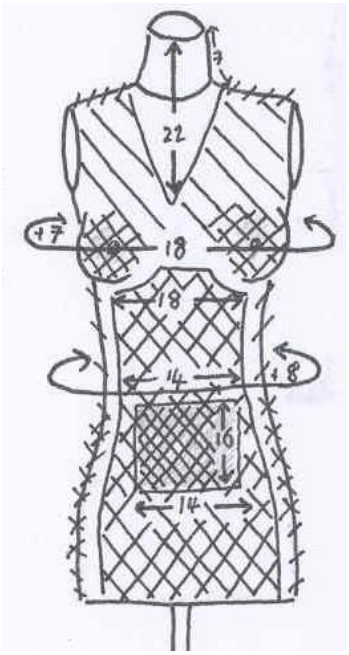
Back



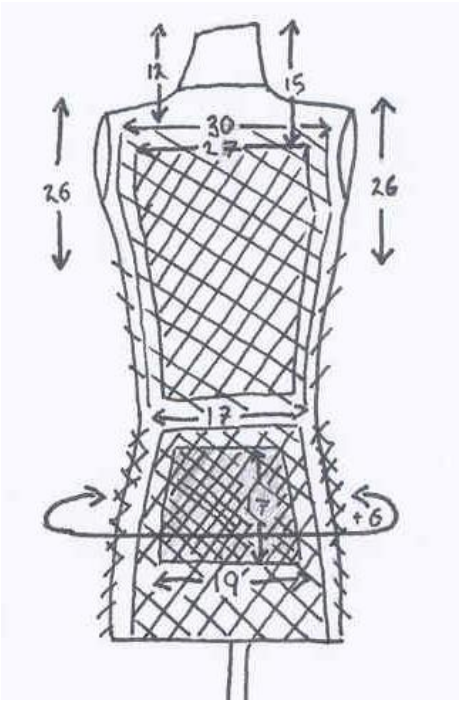
## Example of a torso padding diagram filled in

| | |
|---|---|
| **Costume** | |
| **Project** | |

Front




Back



# Padding a Dress Stand with Polyester Wadding

## Practical Instructions

You will need:

- Polyester wadding
- Dust mask *
- Paper scissors
- Curved needle
- Thread
- Glass headed pins

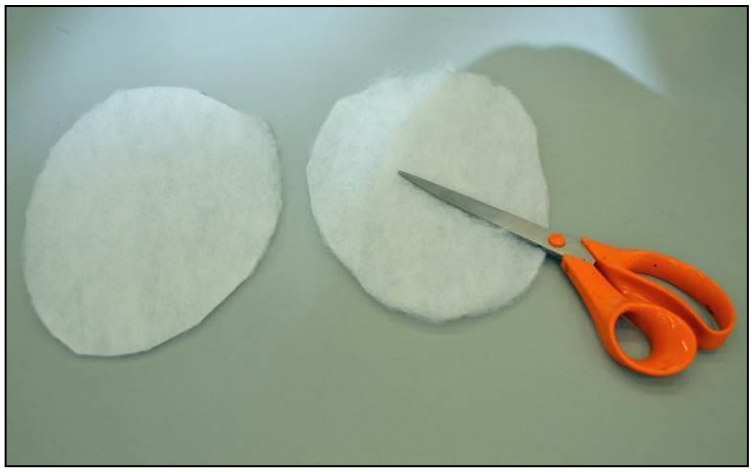
* **Health & Safety warning**: wadding is made from thermally bonded polyester fibres that get everywhere - including your lungs! It is advisable to wear a dust mask when working with polyester wadding and keep objects away from the area you are working in.

1: Begin padding the torso after an initial fitting of the garment/toile on a suitably sized dress stand and detailed measurements of where padding needs to go has been recorded. (See fitting documents on pages 26-27).

2: Have reference material to hand showing the silhouette of the period you are trying to replicate.

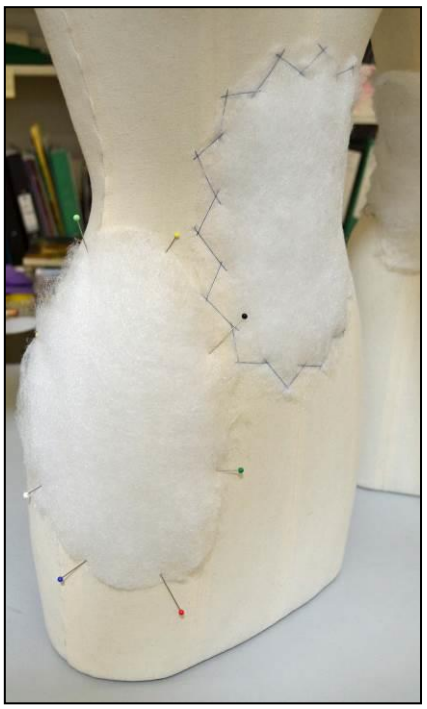
3: Approach the torso as distinct areas of the body. For example think about the stomach as separate to the lower back. This will help to create a more realistic form than wrapping wadding around the torso like a bandage would.

4: After assessing both your garment measurements and the torso shape decide on the area you are working on and cut pieces of polyester wadding to roughly the right shape and size.



5: Soften the outline of your pieces by 'feathering' the edges using your fingertips. (This is more easily achieved when working with the weave direction of the wadding).

6: Lay the feathered piece of wadding onto the torso and pin into position so that it is slightly taut. Use large colourful glass headed pins that won't get lost in the padding.



7: Attach the wadding onto the dress stand using a large herring bone stitch. This is easiest with a large curved needle. Once stitched ensure all pins are removed.

8: To build body contours repeat this process with decreasing sized pieces of wadding until the desired shape and size of each area of the body is formed.

9: Check the progress of the padding by measuring often, particularly at the bust, waist and nape to waist. These dimensions offer a useful reference point for other measurements. If you are using a toile you can have an unlimited number of fittings, but otherwise it is advisable to try the object on the mount as little as possible.

10: Once you feel your padding is built to the desired shape and size you should protect the costume from the wadding fibres with a protective temporary cover before fitting the garment.

## Tips

- Always add padding to specific areas of the body. This will result in a more accurate shape and a smoother finish.
- Use paper scissors when cutting wadding, as it will blunt the blade of good cloth scissors.
- It is also advisable to moisturise hands once you have finished working, as the skin becomes dry when working with wadding (Take care not to touch objects with cream on hands!).
- Use a curved needle to stitch onto the dress stand.
- A pair of tights can be used as an effective temporary cover for fittings.

# Covering a Padded Dress Stand with Stretch Jersey

## Practical Instructions

You will need:

- Cover fabric (one metre should be enough)
- Glass headed pins
- China-graph pencil or chalk
- Fabric scissors
- Tacking thread
- Needle
- Sewing machine

1: Ensure your chosen fabric has been scoured of chemicals. A hot machine wash without detergent should remove most bleaches and treatments in the cloth and exhaust dyes in coloured fabrics.

2: Cut your fabric so there is ample to cover the front of the torso and another separate piece to cover the back. Both pieces should have the warp running from neck to stomach on the mannequin.

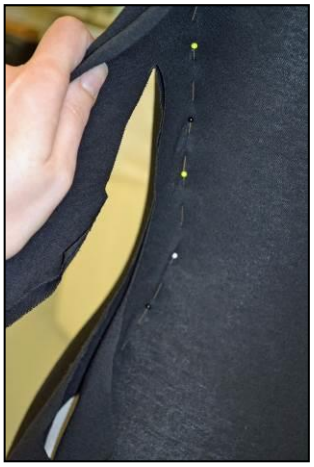
3: Pin each side roughly to the mannequin ensuring the fabric grain runs straight from top to bottom of the dress stand. The fabric should be pinned with the finished fabric side facing out.

4: At the waist of the torso, pinch the front and back pieces of fabric together and pin on both sides of the figure.

5: Repeat pinching the fabric together until it is pinned fully along the lengths of both sides of the torso.

6: To ensure the cover is tight enough pin around the sides again, but **inside** the original pin line.

7: Once you are happy that the cover is tight, evenly stretched, and that your pinned side seams are straight, cut away the excess fabric leaving approximately 2cm seam allowance.



8: Next, open out your cut edges at the torso sides and using a china-graph pencil, or chalk, mark the position of the pins on the inside of the seam allowance. It is also a good idea to add 'balance marks' at key points such as the waist, bust and shoulder.

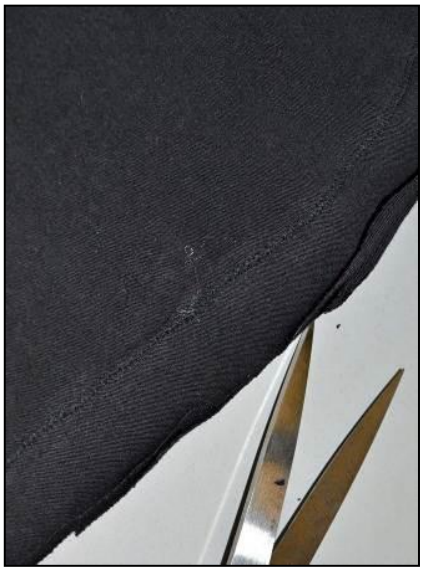
9: Be sure to also mark the front and back pieces.

10: Once both cover edges are marked remove the pins and take the front and back off the dress stand. Once removed place the pieces together with the topside of the fabric facing in.

11: Using your balance marks pin your cover together at these points first. Then line up your other marks and further pin around the edges of the cover.

12: Stitch your cover together using an over-lock stitch or small zig-zag stitch. Follow your pencilled line and ensure the cover is stretched out as you sew in order to avoid puckering etc. Take care not to hit pins as you stitch as this will break the machine needle.

13: Cut the excess seam allowance off the cover as close to your stitch line as possible. Turn the cover so the topside is facing out.



14: Tack your side seams down, this will stop them twisting when you place the cover onto the dress stand and help to create a neat finish.

15: Dress the cover onto the torso ensuring the side seams are straight and the stretch tension of the cover is even across the surface of the torso. It will help to pin the cover at the top and bottom of the dress stand.

16: The bottom edge of the cover should be folded in under the dress stand, pinned and attached to the original cover with large double thread tacking stitches.

# Creating an 18th century body shape

Extract taken from: Lara Flecker's book, *A Practical Guide to Costume Mounting*, (Butterworth-Heinemann, 2007), pp. 80-81

## A brief history of 18th century stays

During the 1700s, corsets were known as 'stays'. Though there were some variations and developments to the shape and style of this undergarment, the stays did not radically change during this period. For the purposes of costume mounting, the basic body silhouette remains fairly constant until the last ten years of the century. Stays were rigid in construction, stiffened with whalebone and made out of fabrics such as cotton and linen. Below the level of the waist, the stays were slit into tabs, liberating the flesh and preventing the stays from digging into the body.

The function of the stays was to mould the figure into the shape of an inverted cone, incorporating a long, straight centre front line that finished in a point well below the level of the waist. The stays effectively elevated the position of the bust, curbing the natural form, by flattening and displacing it upwards. By the 1750s several curved bones had been added at the front of the stays to help control the chest and compress it into a smooth bowed line. The back of the garment was cut high, keeping the figure rigid and straight. This helped to draw the shoulders back, which in turn pushed the bust forward. The waist was pulled in at the sides, reducing the width and making it appear smaller. The neatness of the waist was further emphasised by the wearing of exaggerated panniers, side hoops and hip pads. This basic silhouette and firm structure was maintained for the first two thirds of the century. With the abandonment of the fashionable side hoops in the 1770s, changes to the bodice also began to occur. The stays became less rigid and a slightly more fluid shape developed. During the 1780s the centre front point of the bodice rose back up to the natural level of the waist and greater emphasis was placed on the bust. By the mid 1790s the waistline had risen into the neo-classically inspired Empire line and lighter stays were worn. These were usually less densely boned, with particularly narrow backs and enough structure to lift and control the bust.

## The techniques of applying padding to create an 18$^{th}$ century body shape

Without the use of structured underwear, the natural shape of the female figure is oval. Stays from the 18th century alter the body by pushing the sides of the upper torso inwards. Like a balloon, once the sides

are squeezed closer together, the front and back will begin to expand, changing the body from an oval to a cylindrical shape. To alter a modern figure into this corseted silhouette, padding must be principally applied to the front of the figure, leaving the sides above the waist relatively bare. Some padding should also be added to the back to straighten the vertical line of the figure and to help create the characteristic cylindrical shape. The original location and shape of the bust must be radically altered. The bust points are raised and positioned closer together and the front chest considerably filled out, making the shoulders appear to be pushed back. Padding should also be applied below the level of the waist to bulk out the hips, where the tabs of the stays allowed the surplus flesh to bulge.

**Mounting an 18th century corset**

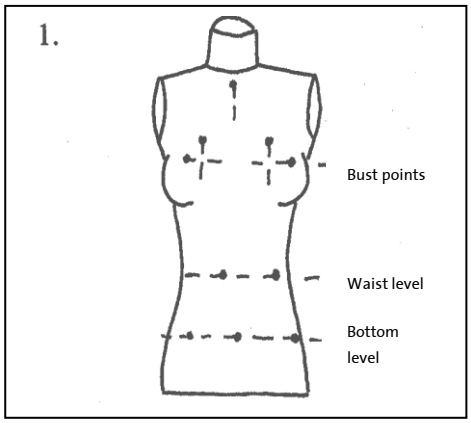
Dress stand before work

Corset on dress stand before padding

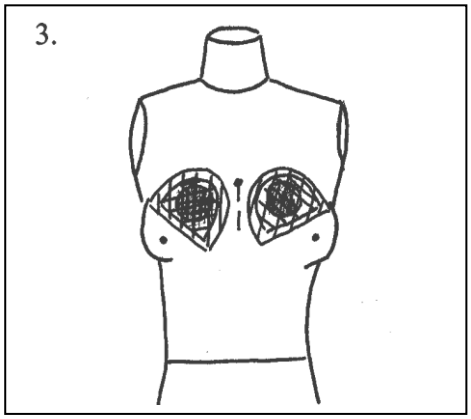
Dress stand padded to fit corset

Corset on completed dress stand

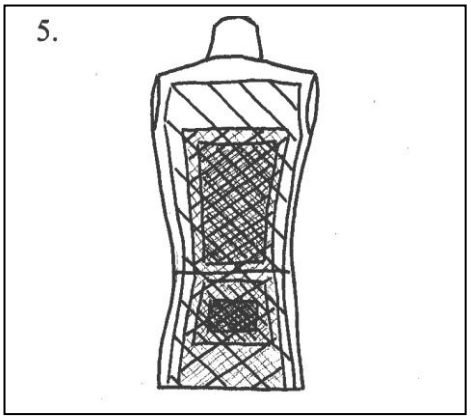
## The techniques of applying padding to make an 18th Century shape



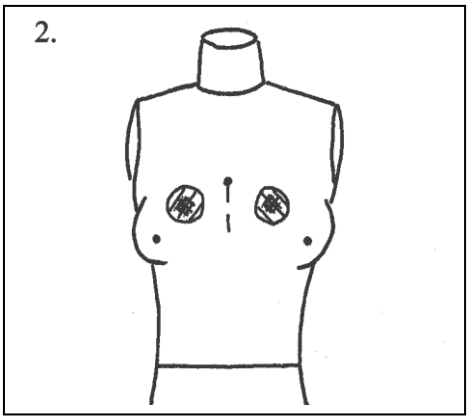

Mark key measurements onto the figure using pins, tacking or tapes.



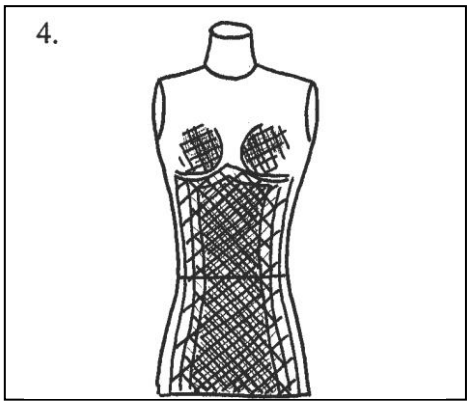

Working with the new points, start to mould and build up the bust with graded circles of wadding. To reduce the prominence of the original bust, do not apply any padding on top of it until it has been levelled off.



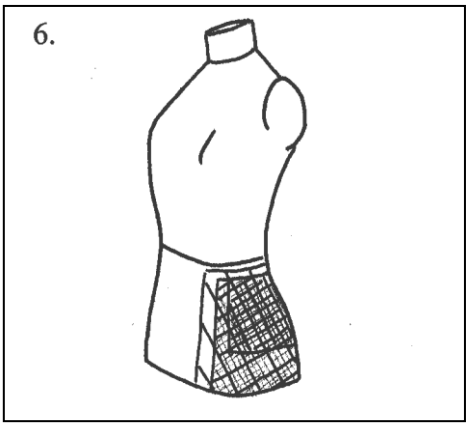

Build out the back of the figure in the same way as the front, keeping the shape as cylindrical as possible. Additional padding will probably be needed to enlarge the bottom.




Following your notes and measurements, start by raising the bust line and closing the bust points together to create a cleavage. Mark the new bust points with two small circles of wadding approx. 6 cm diameter. Feather out the wadding and pin and stitch into place. You can inflate the bust points by stuffing the circles slightly with scraps of




Now build up the front of the figure to match the bust. Start to mould the torso into a cylindrical shape by applying the padding in graded pieces. Remember that the angle of the vertical line from bust to waist is straightened by an C18th corset.




Build up the hips of the figure. You may also need a small amount of padding on the sides of the upper torso, but try and keep this to a minimum, particularly in the waist.

# Creating 19th century body shapes

Extract taken from: Lara Flecker's book, *A Practical Guide to Costume Mounting*, )Butterworth-Heinemann, 2007), pp. 85-86 & p. 90

## A brief history of 19th century corsets

The evolution of corsetry during the 1800s was far more diverse than the previous century and consequently changes to the female silhouette occur more frequently. The early years were marked by the distinctive high-waisted dresses that had come into fashion at the end of the 18th century and during this time lightweight stays were commonly worn to control the figure. The waistline continued to rise, reaching its peak in 1815, gradually descending after this date. By the 1820s, additional triangular gussets were inserted into the top of corsets, either side of the central busk, allowing a rounder more separated bust shape to develop. To accommodate the fullness of the hips, gussets were also added to the bottom of the corset, replacing the 18th century tabs. During the second half of the 1820s, the waistline sank back to its natural level and corsets became more structured, with emphasis on a small waist and a more curvaceous silhouette. This body shape, so typical of the 19th century, was assisted by the hip and bust gussets, which allowed the figure to swell out above and below the increasingly cinched-in waist.

This fashionable profile continued to develop throughout the 30s and 40s. Corsetry was improved by the invention of metal eyelet holes in 1823, which enabled garments to be laced more tightly and efficiently, forcing women's figures into more exaggerated shapes. A slight drop in the level of the waistline during the 1840s lent some variety to this period. By the 1850s skirt dimensions had become so enormous that the waist of the figure could not fail to look small by comparison. As a result shorter and less substantial corsets were adopted and tight lacing was allowed to relax to some extent. The waistline, which had returned to its natural level during the 1850s, shifted once again early in the next decade, rising slightly above the waist. During the 1870s this dropped back once more, to accommodate the longer close-fitting bodices that were coming into fashion at this time.

By 1875 the cuirasse bodice had become fashionable and dresses were cut to fit tightly over the figure as far down as the hips. To create an appropriate foundation for these garments, corsets were elaborately cut and once again became longer and heavier. In about 1873 the spoon busk was introduced, curving

into the waist and out over the lower abdomen, forming a rounded plumpness at the front of the torso. This body shape continued throughout most of the 1880s. With the bustle discarded, the final decade of the century was marked by an alteration in the general silhouette. The female torso now lost some of its curvaceousness and corsets were cut with a straight front. Particular emphasis was placed on a small waist and to achieve this affect, underwear was more tightly laced than ever.

## The techniques of applying padding to create 19th century body shapes

The general construction of corsets from the 19th century tends to focus on reducing the size of the waist. This in turn increases the swell of the hips and bust, creating a far more voluptuous silhouette compared to that of the previous century. In order to keep the waist looking as narrow as possible, when adapting a figure, padding should be principally applied to the front and back of the torso, leaving the side waist relatively free. As with the previous century the level of the bust is raised, but its shape is very different. Rather than confining it with heavy bones, the introduction of gussets or shaping either side of the central busk, gives the chest room for expansion. The bust points are therefore positioned further apart and padding used to create a more independently defined shape. The construction of corsets over the hips acts in a similar way and padding should be used in this area to build a smooth, rounded shape. With the introduction of strapless corsets early in the century, the fashionable line of the shoulders became more sloping. When necessary, padding can be used to adapt this part of the figure.

**1800s-1820s:** The high waists of the empire line tend to add confusion to this transition period. Borrowing from the previous century, costumes are often cut astonishingly narrow across the back, with a full and rounded bust. The circumference of the diaphragm can also be tiny, making it difficult to find modern figures small enough for use with these costumes. Using a child's torso instead is often a practical solution, as this will combine a narrow back as well as a small diaphragm. Padding should be concentrated on the front of the figure, rather than the back or sides, creating a high well-defined bust.

**1820s-1850s:** The curvaceous body shape of this period becomes increasingly exaggerated as the waist is more tightly laced and the hip and bust shaping in corsets is developed. Depending on the date of the costume, padding should reflect this development. The small waists created by these corsets often mean that modern figures are too large to be used as mounts. Unfortunately children's torsos are also unsuitable, as the waist sizes are likewise generally too big. For this reason, figures may need to be cut

down before they can be shaped with padding or it may be necessary to purchase a torso from a specialist supplier.

**1850s and 1860s:** The same general body shape persists, but as the corsets become less tightly laced during the 50s, costumes from this period tend to be slightly larger. For this reason, using modern figures as mounts can be less problematic, though there are always exceptions. When preparing torsos with padding, it is important to remember that the level of the waist needs to be raised slightly for garments from the early 1860s to early 1870s.

**1870s and 1880s:** With the cuirasse bodice in vogue early in the 1870s, the close fit of dresses from shoulder to hip, puts greater emphasis on the shape of the body below the level of the waist. The invention of the spoon busk played a large part in moulding the front of the lower torso, dipping into the waist and out over the lower abdomen creating a distinctive, rounded stomach. As the shape of the hips, bottom and stomach will all be visible beneath the costume, as much care must be taken to pad the lower part of the torso as the upper.

**1890s:** By the 1890s the front of the corset had become straighter and the rounded tummy created by the curved spoon busk had disappeared. Padding should be used to emphasise the bust and hips keeping the waist as small as possible to reflect the tightly laced corsets worn at this time.

## Mounting an 19th century corset

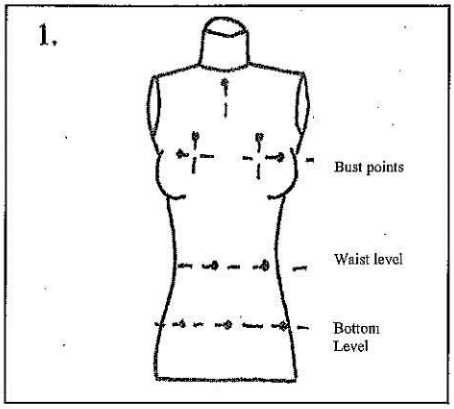
Corset on dress stand before padding

Torso padded with polyester wadding

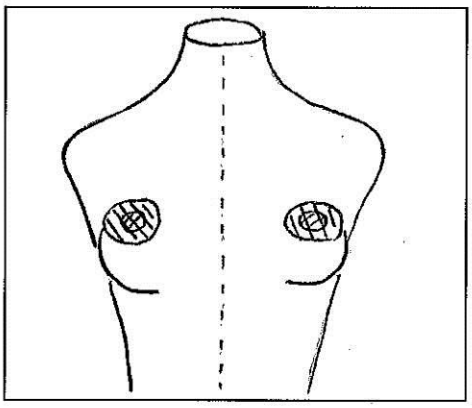
Padding covered with stretch fabric

Corset on completed dress stand

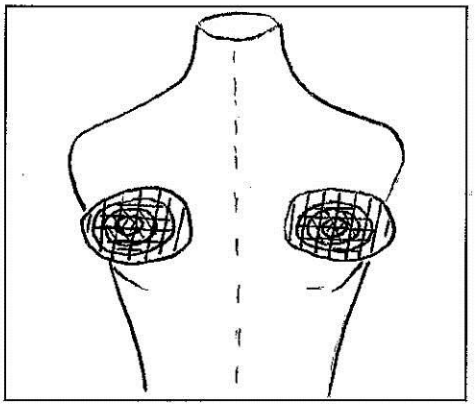
# The techniques of applying padding to make an 19th Century shape



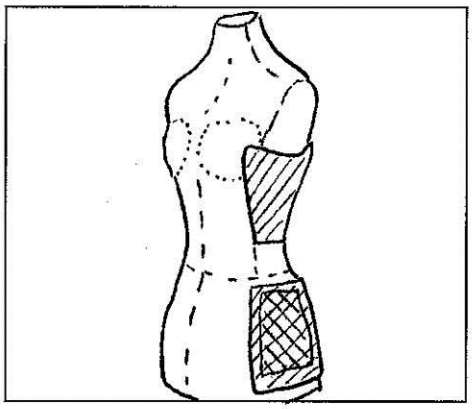

Mark key measurements onto the figure using pins, tacking or tapes.



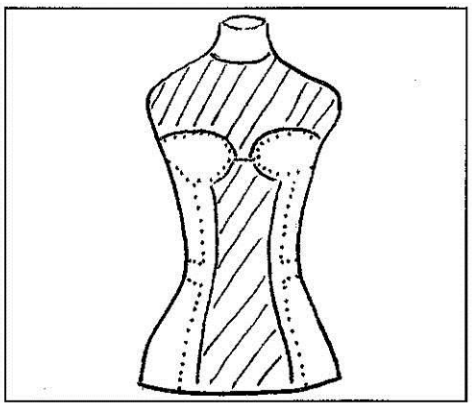
b) Start work on the bust by establishing the bust points using two small circles of wadding approx. 6cm in diameter. Feather out the wadding and pin in place. Before stitching down completely, inflate the points by stuffing with scraps of wadding.



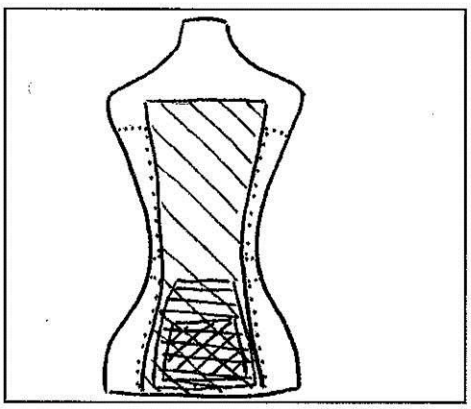
Begin to build up the bust with graded circles of wadding, positioned over the top of the bust points. To reduce the prominence of the original chest, do not apply any padding to this area until it has been levelled off. Develop the bust into a well defined shape, remembering that the central busk and gussets of 19th century corsets separated the breasts and allowed them greater fullness. Cut the wadding into oval pieces to help give the upper figure a more triangular silhouette from bust line to waist.



Build up the side hips of the figure below the level of the waist. Padding should also be added to the upper sides of the torso, avoiding the waist if possible.



Work on the front of the figure, building it up as necessary. Apply the wadding in graded pieces to create a more cylindrical shape. Padding may also be required to smooth out the line of the figure from shoulders to bust.



Use padding to build up the back as necessary, focusing in particular on creating a rounder plumper bottom.

# Arms, Petticoats and Underpinnings

Keira Miller

While a well-padded mannequin is the absolute foundation of costume mounting, underpinnings provide the finishing touches, and very often it is these finishing touches that place the garment within the correct historical period; providing the silhouette appropriate to the object, and a much greater sense of the body within the garment.

This chapter will cover the following basic elements of making underpinnings for costume mounting:

- Padded Arms
- Tube Petticoats
- Trouser Supports
- Net Petticoats
- Silk Top Skirts
- A Brief History of 18th and 19th Century Skirt Shapes

## Equipment List

### Vital

Fabric Scissors
Glass Headed Pins
Needle
Wadding
Calico
Silk Habotai
Rigilene™
Sewing Thread
Tape Measure
Pinking Shears
Net (in different weights)
Mount board

### Desirable

Sewing Machine
Overlocker Machine

## Padded Arms

If there is one thing alone that cheers up the appearance of a costume on display, it is the addition of a pair of padded arms. Padded arms ensure that sleeves are displayed in their correct position, while the simple addition of a dart in the elbow creates a convincing hint at the body inside the costume.

## Making the Pattern

1. Measure the arms of your garment, taking note of the sleeve length (shoulder point to cuff) and the circumference inside the cuff.

2. Enlarge and trace the pattern supplied (at Part One of the workshop).

Make adaptations to the traced copy in order to ensure both the sleeve length and the cuff circumference meet the requirements of the garment. The finished length of the padded arm should be 1.5cm shorter than the sleeve of the object. All adaptations should be made symmetrically, and the elbow dart should be repositioned so as to remain in proportion.

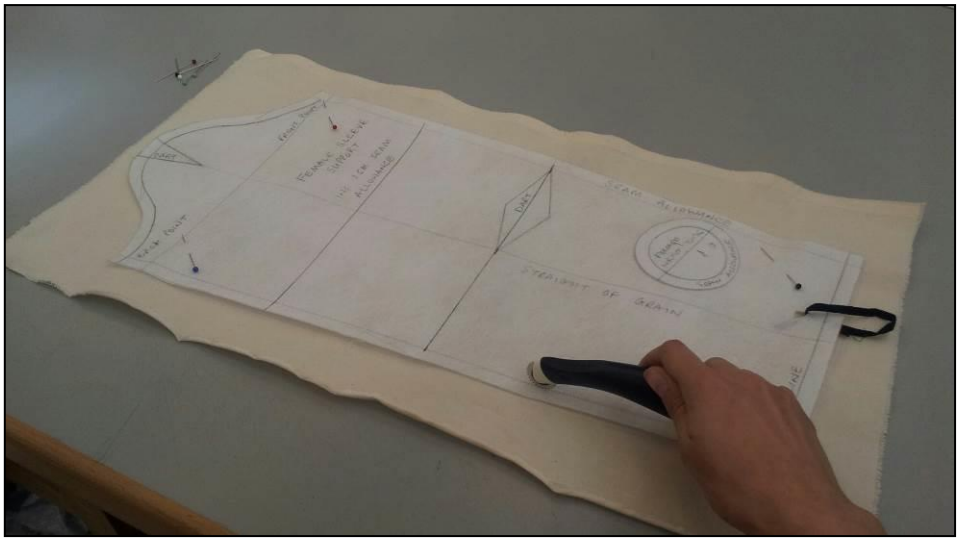
3. If the wrist measurement has been altered, the wrist disk pattern must be altered to match.

Measure the wrist circumference and divide your measurement by π(3.14) to determine the diameter, then divide this by 2 (to get the radius). Set your compass to the radius measurement and draw a new wrist disk.

## Cutting out the Arms

4. Using the pattern as a template, cut out two rectangles of cotton slightly larger than the pattern. Place these one on top of the other and place the pattern on the top.

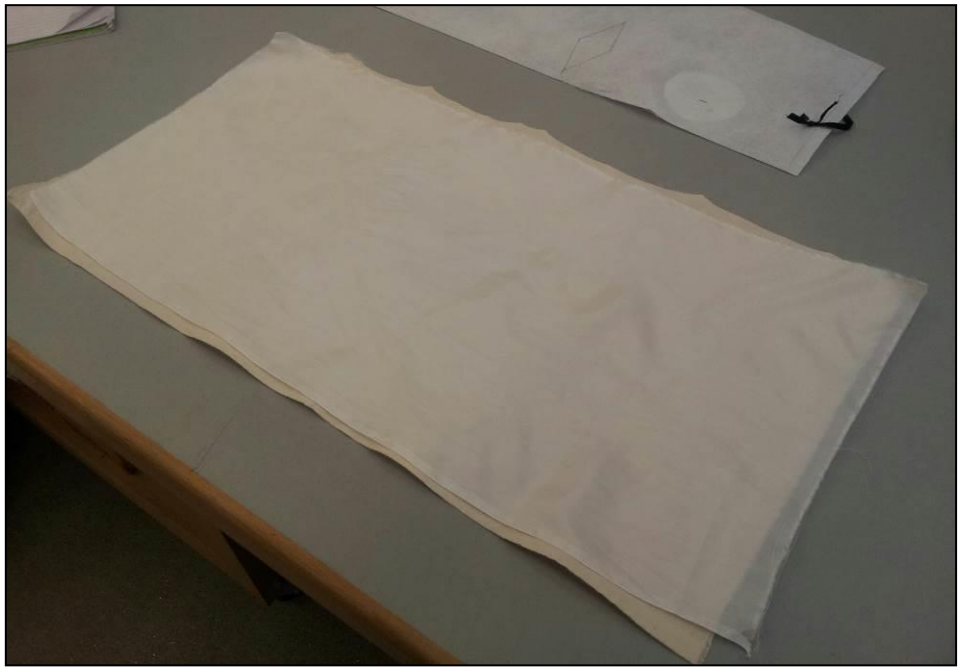
5. Pin the pattern in place and trace the seam allowance, shoulder dart and elbow dart onto the fabric using a tracing wheel.



*Trace the pattern onto the calico*

6. Remove the pattern and lay the rectangles out so they show a left and a right sleeve.

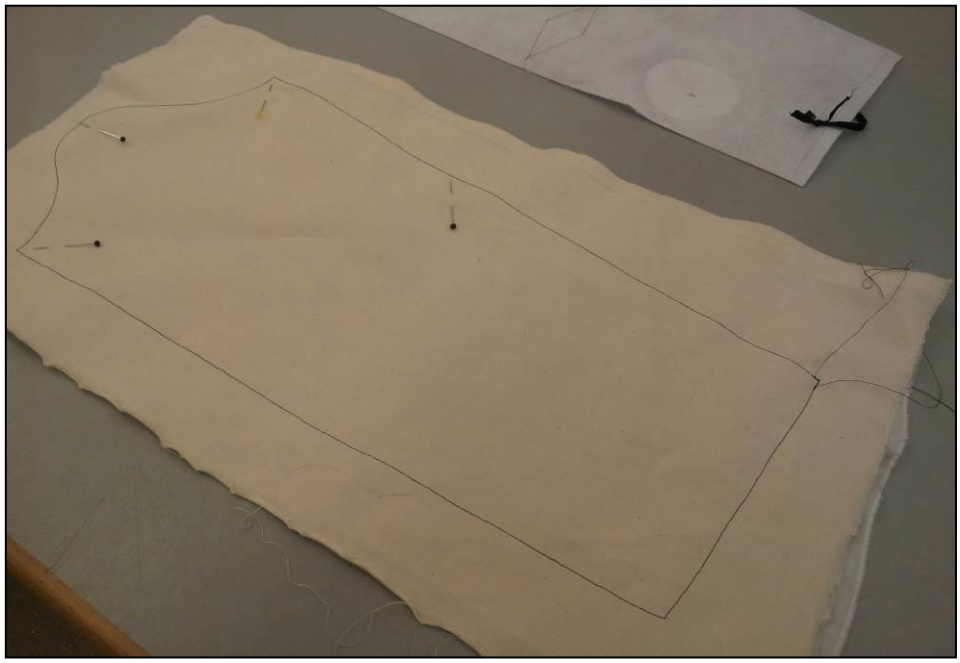
7. Place a layer of silk, or other slippery fabric, over each piece of cotton, and pin these in place.



*Lay a piece of silk over each marked piece of calico*

8. Working with the cotton side face up, machine stitch around the outside of the sleeve, following the wheeled line.

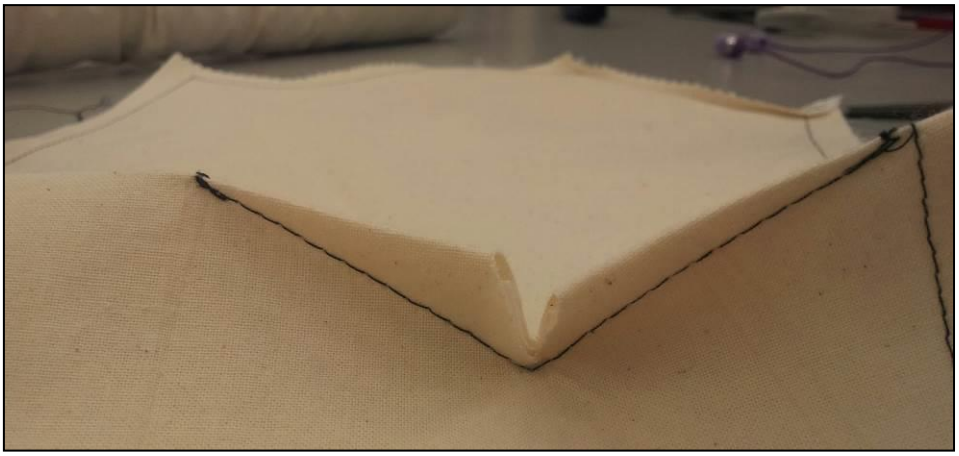
*Stitch over the wheeled line*



## Making up the Arms

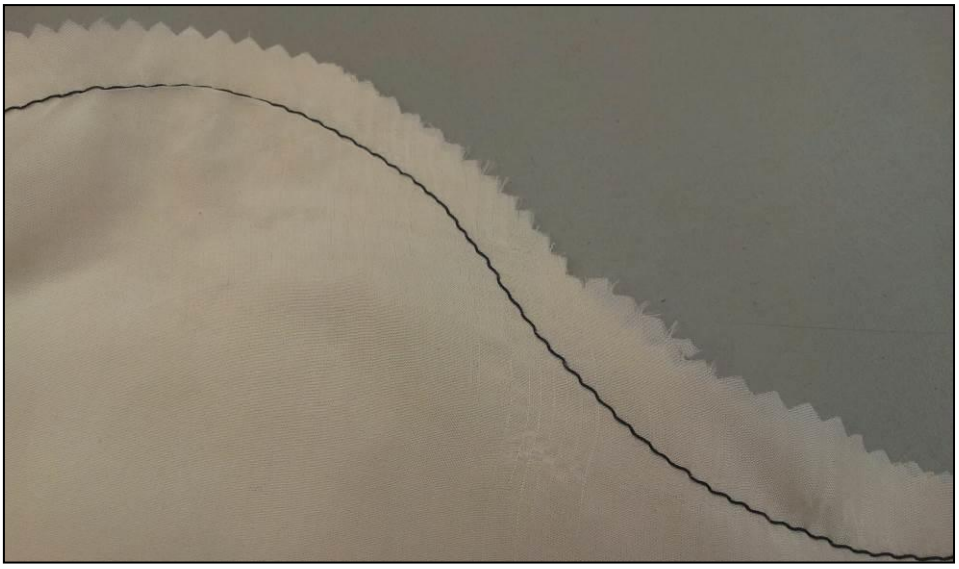
9. Trim the seam allowance to about 1.5cm all the way around the sleeve.

10. With the right (silk) side of the fabric facing inwards, pin and stitch the shoulder and elbow darts.

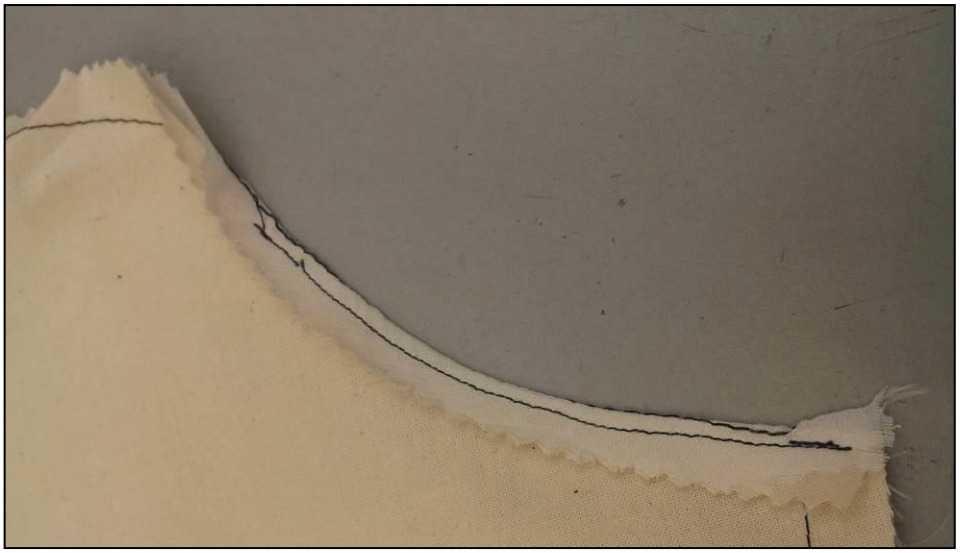


*Elbow dart*

11. Finish the head of the sleeve with pinking shears. You may also wish to turn in the seam allowance and stitch it down.

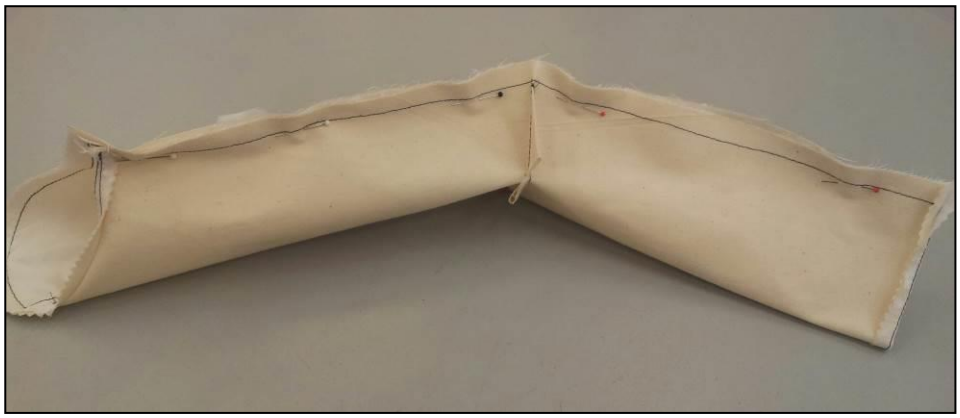


*Pinked sleeve head*



*Sleeve head pinked and stitched turned back*

12. Again, with the right sides facing inwards, fold the sleeves in half and pin and stitch the seams down the length of the sleeve, to form tubes.



*Sleeve pinned and ready to be stitched*

13. Turn the tubes the right way out, so that the seam is on the inside.

14. Stuff the arm with polyester wadding.

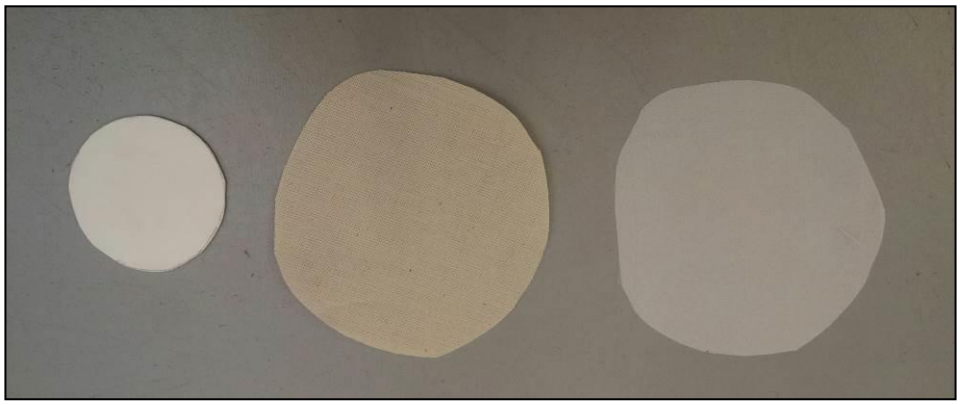
It is possible to use scraps of wadding to stuff the arms, but rolls of wadding will achieve a better finish. Make two tapered rolls that are slightly bigger than the desired finished arm, and feed these down inside each tube. Once this is done, excess wadding can be trimmed away from the wrist and head of the support. When trimming excess from the head of the support, it is worth shaping the wadding so that it can fit smoothly to the body of the mannequin.

*A suitable roll of wadding*

15. To gauge whether the correct length of support has been achieved, it is worth trying the costume on with the sleeve supports pinned to the mannequin.

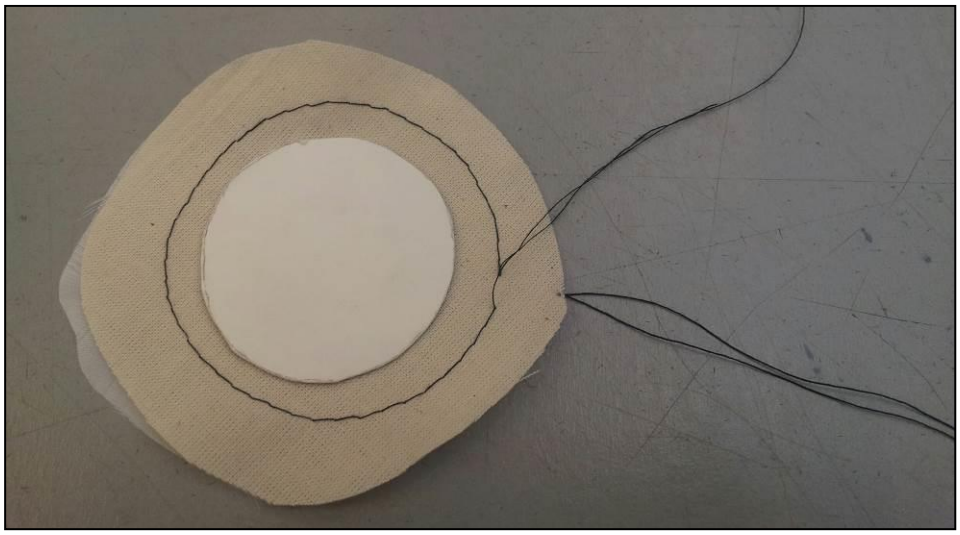
Always ensure pins are pointing inwards so that they cannot snag on the object.

16. Cut out two wrists disk for the support.

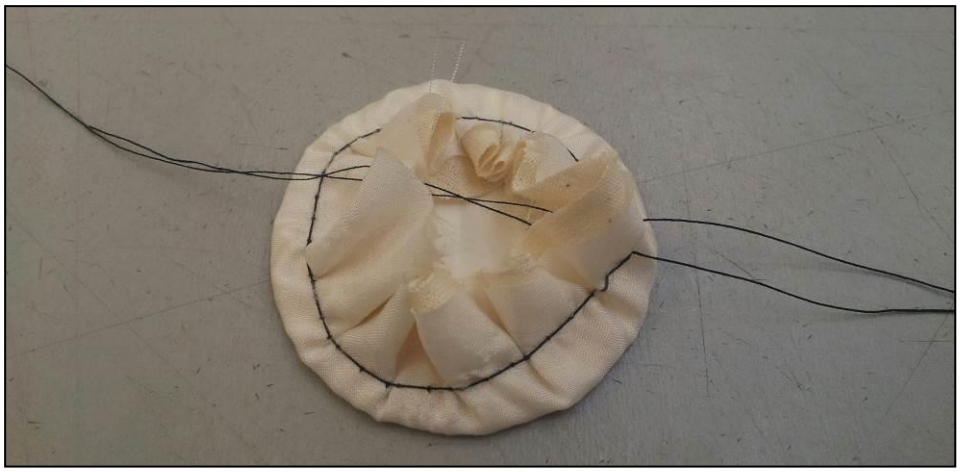


*Cut out two circles in cotton and two in silk*

These can be made from a medium-weight display board (acid-free mounting board). To cover the disks, cut out two circles of fabric in the cotton, and a further two in the top fabric. The fabric circles should be about 2 cm larger than the wrist disks themselves. Lay the silk circle on top of the cotton circle and put a running stitch around the circle, about 1 cm in from the edge, either by hand or with a machine, and draw up this running stitch to pull the cover around the disk.



*Place the cotton on top of the silk and stitch around the wrist disk*



*Draw up threads to gather the fabric around the disc*

17. Once the length has been correctly set, slip stitch the covered wrist disk onto the end of the sleeve, folding the seam allowance from the sleeve end inside the support.

## Attaching the Arms to the Figure

18. Use a herringbone stitch to attach the sleeves to the shoulder of the figure. Only the head of the sleeve need be stitched, to allow a more natural hang to the arm.

# Tube Petticoats




In costume mounting terms, tube petticoats take the place of legs, and provide a foundation on which to build up the layers of net which provide support to skirts no longer being worn with their original undergarments.

## Making the Pattern

1. The vital measurements required to make a tube petticoat are as follows:
   **(i).** The measurement around the widest part of the hips (generally about 20 cm below the waist)
   **(ii).** The length of the petticoat. This can be calculated by measuring the waist to hem of the object and subtracting around 10cm.

2. These two measurements can then be transferred onto a piece of calico using a pencil and ruler, with the hip measurement **(i)** forming the horizontal edges of a square/rectangle, and the length measurement **(ii)** forming the vertical edges.

3. Working up from the bottom edge, mark 2 to 3 lines for applying boning, each about 15 to 20 cm apart. Boning will also be applied to the hem.

4. 2 cm of seam allowance should now be drawn around all sides, and the pattern can then be cut out. Finish the edges with pinking shears, or by over-locking or zigzag stitch on the sewing machine.

## Stitching Together and Applying Boning

5. With the right sides together, the side seams (lines **(ii)**) should be placed together and pinned and stitched. The seam can them be pressed open.

6. With the tube still the wrong way out, rings of Rigilene™ are stitched along the boning lines and the hem line using a wide zig-zag stitch on the sewing machine.

It is worth noting that the Rigilene™ works best if its natural curve matches that of the completed petticoat. Therefore, as the boning is being stitched to the inside of the tube, it should be applied with the curve in the **reverse direction**. Once turned though, it will then curve correctly.

7. Turn up the hem and pin and stitch in place.

## Attaching the Tube to the Figure

8. Turn the petticoat the correct way out and pull in over the figure so that the top edge lines up with widest part of the hips. Herringbone stitch in place.

Larger tube petticoats can be made by adding additional width around the waist. However, once the circumference goes above around 1.5 m, steel boning may be required to help the petticoat keep its shape.

## Trouser Supports

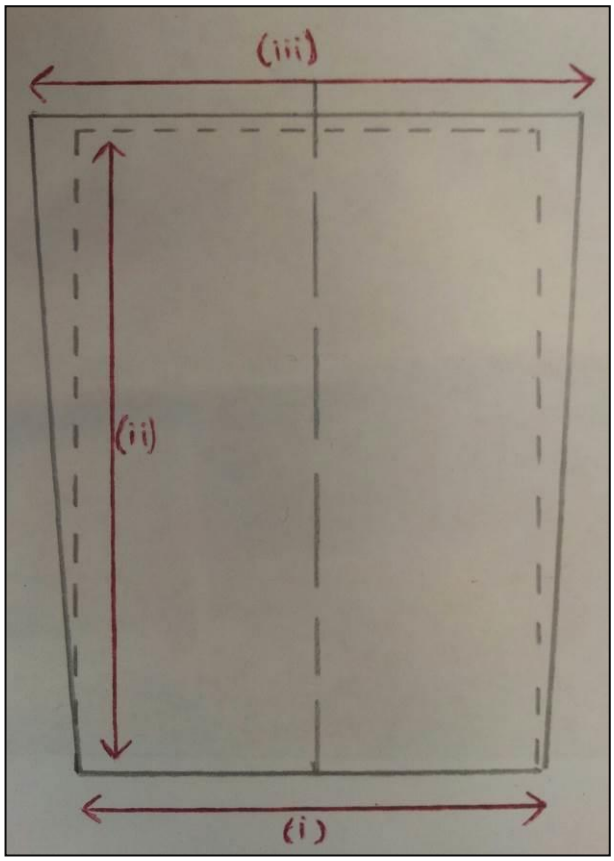
Trouser supports serve a similar function to tube petticoats, and are used if a garment has trousers rather than a skirt. Thankfully, they are also made in a similar way. However, a major thing to note for costumes with trousers is that the mannequin will need to have a cut away to accommodate the crotch.

## Making a Pattern

1. The measurements for leg supports are as follows, taken while the figure is on the mannequin:
   - **(i).** Measure the inner circumference of the trouser leg at its narrowest point. Subtract 2.5 cm from this measurement.
   - **(ii).** Measure the length of the trousers from the bottom edge of the mannequin to the hem.
   - **(iii).** Measure the approximate circumference of the trousers where they meet the edge of the mannequin.

2. These two measurements can then be transferred onto a piece of calico using a pencil and ruler, with the circumference measurement **(i)** forming the horizontal edges of a rectangle, and the length measurement **(ii)** forming the vertical edges.

3. To create a more realistic leg shape, the top the horizontal line should be extended in relation to the circumference measurement of the trousers where they meet the bottom edge of the mannequin **(iii).** Ensure that this is done evenly on each side. Re-join the top line to the ankle line, creating a shape that tapers outwards towards the top.




*Where each measurement ends up on the pattern*

4. Working up from the bottom edge, mark 2 to 3 lines for applying boning, each about 15-20cm apart. Boning will also be applied to the hem.

5. 2cm of seam allowance should now be drawn around all sides, and the pattern can then be cut out. Finish the edges with pinking shears, or by over-locking or zigzag stitch on the sewing machine.

## Stitching Together and Applying Boning

6. With the right sides together, the side seams (lines **(ii)**), on each leg should be placed together and pinned and stitched. The seams can them be pressed open.

7. With the tubes still the wrong way out, rings of Rigilene™ are stitched along the boning lines and the hem line using a wide zig-zag stitch on the sewing machine.

It is worth noting that the Rigilene™ works best if its natural curve matches that of the completed petticoat. Therefore, as the boning is being stitched to the inside of the tube, it should be applied with the curve in the **reverse direction**. Once turned though, it will then curve correctly.

8. Turn up the hem and pin and stitch in place.

9. Turn the leg supports the correct way out and pull over the cut-away at the bottom edge of the figure. Herringbone stitch in place.

# Net Petticoats

While it is sometimes necessary to make underpinnings which closely resemble original undergarments, most costumes can be given an accurate and supportive silhouette with the use of net petticoats and frills.

Net can be used to make full petticoats, or it can be used for frills attached to a tube petticoat, or even as frills applied directly to the mannequin. The beauty of using net is that it provides the costume with a soft and sympathetic base on which to rest, with the bonus being that the building up of nets can be done in subtle increments to create a perfect historical silhouette.

Even if a larger tube petticoat is used, a finishing layer or two of net will always give a finer and more sympathetic finish.

## Weights of Net

Net can be purchased in many different weights and as a general rule, stiff net is used to build up larger skirts, while medium/soft net provides a softening layer between the stiff net and the top skirt. Softer net can also be used under garments which are in need of less support or a less dramatic period shape.

## How much to cut –

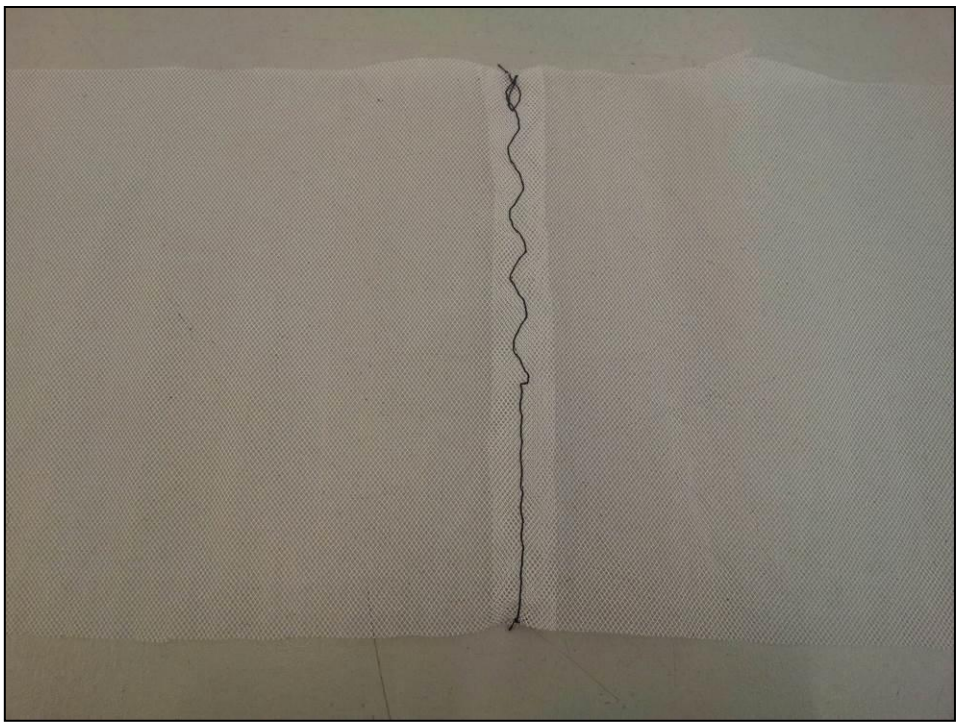
1. Measure the length of the frill or petticoat required.

2. Measure the distance you want your frill to cover, be it around a tube petticoat, around the waist circumference, or around a sleeve. For very stiff net, times this measurement by 2 to 3, for medium net times the measurement by 3 to 5 and for very light weight net, times it by 5 to 7 in order to determine the width of net required.

3. Cut several strips of net to the required length. You will need to cut as many strips as are needed to create the bulk of gathering needed in the width (the distance of the frill x 2 to 7, depending on the bulk required and the weight of net used).

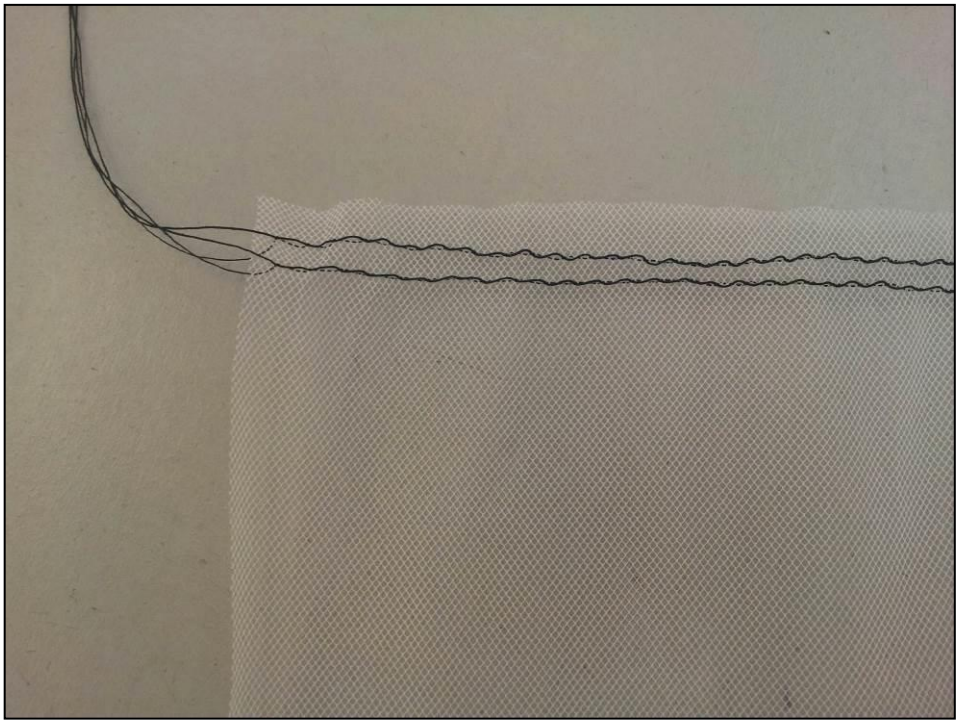
## Gathering Net

4. (i) *Draw Cord Method*
   Stitch all your strips of net together in a long line, over lapping the edges and stitching them flat, rather than creating a standard seam.



*Overlapped edges*

Using the largest stitch length, stitch two parallel lines of straight stitching along the top edge, without anchoring them off at the ends. If the net is very stiff, a third line might be useful.



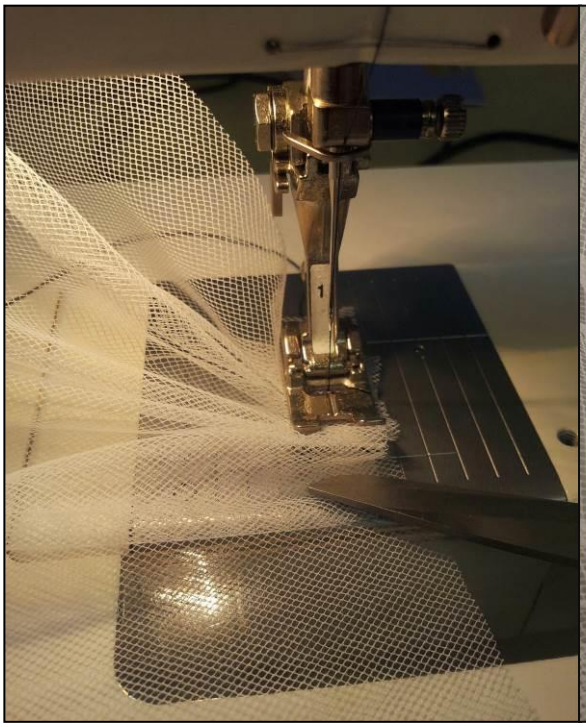
*x2 stitch lines along the top edge of the net*

Use these lines of stitching to draw the net into gathers by pulling on the top threads, or the bottom threads, to gather the fabric along the lines.

*Net gathered with drawn-up stitching*

### *(ii) Quick Method*

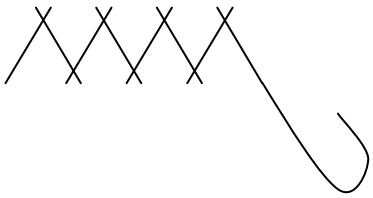
Stitch all the widths of net together, as above. Rather than applying a draw cord, quickly gather the net by pleating it as you feed it under the machine foot. This is best done using the point of your scissors, or a small metal spatula, if you have one.



*Using scissors to 'quick-pleat'*

*'Quick-pleated' net*

The easiest way attach nets to a petticoat or a mannequin is either by machine stitching, or by using a herringbone stitch.



## Top Petticoats

Once the desired shape has been completed, a top petticoat should be added to act as a barrier between the net and the object. Top petticoats are best if made out of a slippery fabric, such as silk habotai.

## How much fabric to cut

1. (i) Measure the length from the waist of the figure to just below the hem of the net support (5-6 cm).

   (ii) Calculate the width required by measuring around the net support at its widest. Add a further 50 cm to allow for ease. To attain enough width you will probably have to seam together two or more widths of fabric. Once stitched, seams should be pressed open and finished with pinking shears, or by over-locking or a zig-zag stitch on the sewing machine.

2. If you have an over-locker sewing machine, over-lock all raw edges and gather the top edge of the petticoat on the sewing machine, as per the draw cord method used for gathering net frills.

3. If you don't have an over locker, finish the raw edges with pinking shears or a zig-zag stitch on the sewing machine. Turn over 2 cm at the top of the petticoat and iron flat and then apply gathering stitches through both layers of fabric. This will give the petticoat a neat top edge.

4. To attach the petticoat to the mannequin, pin the centre of the petticoat to the centre front of the mannequin and draw up the gathering stitches, positioning the gathers where they will best work with the silhouette of the garment.

# A Brief History of 18th Century Skirt Shapes

Extract taken from: Lara Flecker's book, *A Practical Guide to Costume Mounting*, (Butterworth-Heinemann, 2007), p. 135

The exaggerated panniers or hoops worn beneath skirts during the 18th century are so characteristic of their time that garments from this period can be easily identified, even by those who are less familiar with the history of dress. Although the extremes of this style are a familiar image of the period, the evolution of the skirt during this century is punctuated by a variety of changes that are important to be aware of.

Early alterations to the skirt silhouette were partly inspired by the newly available silks, velvets and brocades from France, which could be shown off to greater advantage if spread out over a larger surface area. Initially skirts were supported with petticoats and pads and it was not until 1710 that the first structured underskirt of the century was introduced. This took the form of a large dome or bell shaped garment, supported with whalebone. By the 1740s the silhouette had changed, flattening out at the front and back and extending beyond the hips, to create the hoop or pannier shape that is so symbolic of this period. Throughout this time, hoops continued to expand, in some cases to a preposterous extent. Skirts and frames were shaped into a square, boxlike silhouette or fashioned into a fan shape that flared out from the top of the skirt into an even wider hem.

By the 1750s the size of the skirts had begun to reduce and pocket-hoops were worn for informal ware. These supports were made as separate structures, like two half buckets worn over the hips and held together by a communal waist tape. This less extreme silhouette persisted for another twenty or thirty years, although the larger panniers of earlier decades continued to be worn for formal and court occasions. Pocket-hoops were finally replaced in the late 1770s by hip and bum-pads (false rumps), made of fabric stuffed with wool, horsehair or cork. These pads were worn throughout the 1780s creating a rounded shape to the skirt. By the mid 1790s a more radical change had occurred. The female waistline rose dramatically, altering the silhouette to a classical line. Skirts at this time become straighter and less voluminous with only a small bustle or bum-pad used to fill out the curve in the spine and prevent skirts from resting on the backside of the wearer.

## A Brief History of 19th Century Skirt Shapes

Extract taken from: Lara Flecker's book, *A Practical Guide to Costume Mounting*, (Butterworth-Heinemann, 2007), p. 145-146

The high waist that had become fashionable at the end of the 1700s marks the commencement of the 19th century with a particularly distinctive style of dress. Persisting with this shape, the first years of the century are characterised by a waistline that continued to rise until reaching its zenith around 1815. Although maintaining decency, underpinnings from this period were less bulky than previously. Dresses often made of transparent muslins and gauzes were cut with relatively straight skirts, requiring little support to define their shape, apart from a tiny pad worn in the small of the back. From 1815 onwards the skirt silhouette began to fill out and the hem developed into a more spherical bell shape.

By the mid 1820s the high waist had dropped while the skirts continued to increase gradually in size. The numbers of undergarments worn beneath skirts inevitably multiplied to support their swelling shape. Throughout the 1830s and 40s, the expansion of the skirt continued, with hem circumferences steadily growing. A larger bum-pad or bustle was used at this time to fill out the back of the skirt while many layers of starched and stiffened petticoats were now worn to create the correct silhouette. By the end of the 1830s a sturdier petticoat known as a crinoline was being used. This undergarment obtained its name from the French word *crin* or horsehair with which the petticoat was reinforced and should not be confused with the crinoline frame which was introduced some years later.

The waistline, which had temporarily dropped during the 1840s, rose again in the 1850s. By this time skirts had become so large that the number of petticoats worn to produce the shape was very cumbersome. In 1856, the cage crinoline was introduced to overcome this problem. Made out of a series of spring steel hoops suspended from tapes, the crinoline successfully liberated women from their previous petticoats, providing a firm support for the skirt. The shape of the skirt soon began to develop into a slightly more elegant silhouette, flattening out at the front and extending at the back. This bias towards the back of the figure seemed to develop throughout the decade culminating at its end in the first era of the bustle. With the crinoline abandoned, the bustle shape was partly derived from the looping up and draping of the surplus material left over from larger skirts. The level of the waist was also raised at this time and the bustle worn fairly high. To create the bustle silhouette, skirts were often supported with frames based on the structure of a half crinoline and made of fabric reinforced with whalebones or steels. Pads were also used, stuffed with straw, cotton or feathers. Later, in the early 1870s, when skirts were narrower, pads were worn alone, before being temporarily dropped to make way for the new slim line shape of 1874.

This new fashion was a radical change to the female silhouette and was also short lived. Skirt shapes at this time were moulded tightly over the hips and kept flat and narrow down the front and sides. The back was also fitted, often with an additional train attached to the skirt and positioned sometimes as low as knee level. Trains were supported with layers of flounces attached to the back of a fitted petticoat. By 1882, the bustle began to return, becoming more exaggerated than before. Positioned slightly lower than previously, it projected almost horizontally from the back waist of the figure. The flatter front of the skirt survived, helping to accentuate the bustle behind, which was also narrower than its previous incarnation. Around the middle of the 1880s, the bustle began to shrink and had disappeared entirely by the beginning of the next decade. Skirts now became relatively unstructured and were supported with gored petticoats stiffened with frills and gathered at the centre back for greater fullness.

# Suppliers

It is useful practice to ask your colleagues for any scraps or off-cuts of Plastazote®, acid-free mounting board, Melinex® etc. for you to use when mounting dress – as you will often only need a small amount.

Preservation Equipment Ltd. (PEL) - www.pel.eu
For: Tyvek®, Secol® sleeves, acid-free tissue paper, mounting board, Plastazote®, dust masks, spatulas.

Polyester Converters -www.polyesterconverters.com/index.htm
For: Melinex®

Restore Products -www.restore-products.co.uk/ecommerce/
For: small reels of polyester thread

MacCulloch and Wallis - www.macculloch-wallis.co.uk
For: fabrics and haberdashery/notions such as Rigilene™, curved needles, curved beading needles, glass headed steel pins

Pongees – www.pongees.co.uk
For: silks

Jacob Cowen and Sons Ltd. – www.jacobcowen.com
For: polyester wadding

Proportion London - http://www.proportionlondon.com/
For: dress stands and mannequins

Siegel and Stockman – www.siegel-stockman.com
For: dress stands and mannequins

Shopfittings (Manchester) Ltd. - www.shopfittings-ltd.co.uk or email: matt@4-shops.co.uk
For: ready-made torso covers

Feuerstein – http://www.suprama.com/katalog-englisch/darm1.html
For: curved surgical needles – 3/8 curved, regular eye - PD 533-O size 1 or 2

John James - www.jjneedles.com
For: curved quilting needles – assorted sizes

Restore Products - http://restore-products.co.uk/ecommerce/product/fine_curved_needles/
For: fine curved needles – assorted sizes

# *Whaleys of Bradford* product codes

http://www.whaleys-bradford.ltd.uk/

*Whaleys of Bradford* can supply many different fabrics suitable for mounting dress. They will also send out swatches, but you may have to pay a small amount for these. Some of the following materials have been used to create the swatch file in the loans box.

| Name | Code | Width | Cost per metre (for 10 metres or more), ex VAT |
|---|---|---|---|
| Scoured Natural (shrunk) Calico | AJ404 | 150 cm | £2.99 |
| Calico Heavy | CC27 | 183 cm | £2.89 |
| Cotton/Lycra Black | SF19A | 160 cm | £5.99 |
| Cotton/Lycra White (Optic white) | SF19 | 160 cm | £5.99 |
| Merz Cotton Natural (Jersey) | CMOS 115 | 150 cm | £3.91 |
| Habotai Silk, Medium white | S122 | 114 cm | £6.41 |
| Habotai Silk, Black | DS13 | 112 cm | £7.87 |
| Heavy weight net | WB415 | 150 cm | £2.08 |
| Medium weight net white | BC88 | 137 cm | £1.05 |
| Soft weight net, scoured nylon – white | | 110 cm | £14.91 |
| Bobbinet white cotton net | AK99 | 160 cm | £15.93 |

Prices correct as of April 2014

# Bibliography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Gernsheim, A. Victorian and Edwardian Fashion, a Photographic Survey; Dover Publications, 1981

Robinson, J. and Pardue, T. An Illustrated Guide to the Care of Costume and Textile Collections; MGC, 2000

Readers Digest New Complete Guide to Sewing: Step-By-Step Techniques for Making Clothes and Home Accessories, 2010

Waugh, N. Corsets and Crinolines; Faber and Faber Limited, London, 1993


# Useful websites

http://www.clothestellstories.com/
http://www.australiandressregister.org/resources/
http://www.connectingtocollections.org/mountinggarments/
http://blogs.utexas.edu/culturalcompass/tag/a-practical-guide-to-costume-mounting/

# List of authors and workshop tutors

## V&A

### Susana Fajardo (author)

Has been a Textile Conservator at the Victoria and Albert Museum (V&A) since 1996. A BA(Hons) degree in Constructed Textiles at Camberwell School of Art, London, was followed by an apprenticeship in classical tapestry weaving at the Manufacture des Gobelins, Paris, and a three year textile conservation apprenticeship at Ksynia Marko's Textile Conservation Studio, London. Susana is currently working on the conservation of material for the Europe 1600-1800 Galleries, part of V&A's FuturePlan Project.

### Lara Flecker (author and Part One tutor)

Works as a specialist in Costume Mounting in the conservation department at the V&A. She trained as a costume maker at Wimbledon School of Art and after graduating, worked in the theatre and film industry as well as for the conservation department at Historic Royal Palaces. Lara is the author of *A Practical Guide to Costume Mounting* which was first published in 2007.

### Sam Gatley (author and Part One tutor)

Works as a Textile Display Specialist within the Textile Conservation department at the Victoria and Albert Museum. Having worked as a technician for a number of museums around the UK she went on to complete a BA (Hons) in Costume Interpretation at Wimbledon School of Art before graduating with an MA in Conservation and Mounting of Costume from the Royal College of Art/V&A.

### Joanne Hackett ACR (Part One tutor)

Graduated with an M.Sc. from the Winterthur/University of Delaware programme in Art Conservation in 1998. She worked for the Fine Arts Museums of San Francisco and the Indianapolis Museum of Art before joining the textile conservation department of the V&A in 2006. She is an Accredited Conservator and a Fellow of the American Institute for Conservation.

### Keira Miller (author and Part One tutor)

Graduated from Wimbledon School of Art in 2007, gaining a BA (Hons) in Theatre Design: Costume Interpretation. Since graduation, she worked briefly for the BBC wardrobe department, before taking up a post in the Textile Conservation Department of the Victoria and Albert Museum, where she specialises in the mounting and packing of textiles and dress objects.

## Part Two tutors: Bath

The second part of the DATS dress-mounting course is a 'live learning' exercise at the Fashion Museum in Bath. The aim is to assist with the mounting of 19th century dress for the refresh display of the popular Behind the Scenes gallery at the museum. Across the two days you will be guided by the experienced team, each of whom has a role both in the Fashion Museum display preparation and in the DATS course. This is the FM team:

### Janet Wood

Independent textile conservator- Janet is one of the leading figures in establishing the modern practise of mounting dress in museums. After a successful career in fashion, Janet became a textile conservator and pioneered dress mounting techniques at Historic Royal Palaces / Kensington Palace. Janet has mounted dress for the Fashion Museum in the past and will be working on the refresh display as well as being one of the team of three key tutors for the DATS delegates at Bath.

### Christine Housden

Independent textile conservator - Christine worked closely with Janet at Historic Royal Palaces after a career in theatre wardrobe making, and is also involved in mounting the dress on display at the FM with Janet. Christine also masterminds the integrated pest management (IPM) at the FM and will act as one of the three key tutors for the DATS course at Bath.

### Elly Summers

Fashion Museum Collections Assistant - Elly has worked at the FM for 10 years and is joint exhibition curator with Elaine Uttley for the Behind the Scenes refresh display. Elly will be one of the three key tutors who will guide the work and learning of the DATS delegates.

### Elaine Uttley

Fashion Museum Collections Assistant - Elaine has worked at the FM for 7 years and with Elly Summers is joint exhibition curator for the Behind the Scenes refresh display. Elaine will be condition checking objects to be mounted for the refresh display during the DATS course.

### Jean Scott

Fashion Museum Volunteer Lead - Jean is in charge of the Friday Ladies Volunteer Group at the FM, a voluntary role that she has filled for over 10 years. Jean's background is in education and fashion making, and her role during the installation period will be to assist with the provision and supply of underpinnings, and arms, for the display figures used by the delegates.

### Fleur Johnson

Fashion Museum Curatorial Intern - Fleur is at the FM on a one-year contract, working on the Fashion Museum Backlog by noting the locations of objects on the collections management system (CMS). This is Fleur's first exhibition, and she will act as runner.

### Vivien Hynes

Fashion Museum Administrator - Vivien has worked at the FM for 4 years. During the display installation Vivien will anchor the day-to-day work of the museum, and also liaise with front of house staff and marketing colleagues.

### Rosemary Harden

Fashion Museum Manager - Rosemary has worked at the FM for 23 years and has an overview of the display refresh and the DATS mounting course. Rosemary will introduce the course and the roles of the FM team, and also be working on a storage project on the gallery during the installation and DATS course.

### Ann French

Collections Care Manager/Conservator (Textiles) Whitworth Art Gallery - Ann is textile conservation lead on the DATS dress-mounting project and her role is overall moderator during the DATS course in Bath, ensuring consistency and the delivery of key learning aims. Ann has over 30 years textile conservation experience, and has worked extensively at the Fashion Museum in the past.

Ann has worked in the field of Textile Conservation for nearly 30 years for a variety of institutions, including the V&A, Glasgow Museums, the Area Museums Council for the South West and the National Trust for England and Wales. She has been employed at the Whitworth Art Gallery, the University of Manchester since 2002 as Conservator (Textiles). Since 2011 she has combined this role with that of Collection Care Manager. In addition, Ann teaches conservation and collection care seminars for the universities of Manchester, Glasgow and East Anglia. Ann is chair of ICON's Textiles Group, and the Conservation Representative on DATS' Committee.

### Caro Whitehead

Independent dress and textiles curator - Caro is joint lead with Jenny Lister of the DATS dress mounting project, and her role during the DATS course is, with Ann, to ensure delivery of key aims as required by Arts Council England, who have funded the project. Caro has also worked on collection documentation tasks at the FM, and will be taking record photographs during the DATS course. Caro worked for 23 years as the Costume and Textiles specialist at Tyne & Wear Museums.

## Part Two tutors: Manchester

### Ann French (see previous page)

### Sarah Walton

Has recently started a two year internship at Queens Park Conservation Studios, in conjunction with the Manchester City Galleries as a costume mounting technician. Sarah has a background in textiles and studied BA (Hons) Embroidery at the Manchester School of Art.

### Geza Werner

After working as a costume maker in the theatre for several years Gesa trained as a "Gewandmeisterin" at "Staatliche Fachschule für Gestaltung", Hamburg (German equivalent to BA (Hons) Theatre and Screen - Costume Interpretation) in 2005, and started focusing on the fine art of drafting patterns and cutting clothes. She took up Costume Mounting at the V&A Textile Conservation Department in 2011 and has been doing this ever since, first on a full time post at the V&A, and now as a freelancer for various clients.

Aside from this Gesa has also developed an additional enterprise making bespoke garments for private clients in the 1920s -1940s style. It is a great pleasure to be able to do both, creating new and wonderful garments on the one hand and also preserving old, fragile treasures by mounting them for display on the other.

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