

# Pleatwork Embroidery

(or what we should be calling smocking in the SCA)

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A smock is an English term that was used to describe an undergarment. One of the earliest mentions of the word is in the English story "The Miller's Tale" by Chaucer, in 1390, where the wife is described as wearing a white smock embroidered in front and behind. (Garbaty 457)

*Whyt was hir smok,  
and brooded al before and eek bihinde,  
on hir coler aboute,  
of col-blak silk, with-inne and eek*

When we hear the word smocking we naturally think of little girl's dresses with embroidered necklines and bodices. They are typically done in a style known as English Smocking. This is not to say that smocking originated in England, nor was it isolated to just England. This term was coined from its usage on the rural smocks and coats of England and Wales through the 18<sup>th</sup> and 19<sup>th</sup> centuries and popularized in clothing during the Victorian era. (Keay)

It is my intention to take what is a modern style of embroidery and fabric manipulation and put it in its proper historical context within the period covered by the SCA by studying some of the available extant garments and the portraiture of the time.

## Pleatwork

Modern classifications of smocking cover not only the embroidery, but also the manipulation of fabric into pleats in a decorative fashion. It is unlikely that people living during the Medieval and Renaissance eras would have categorized the fabric manipulation together with the embellishment on their garments. It is more likely that the pleating would be part of the actual construction of the garment, made by someone such as the *camiciaia*<sup>1</sup> and another group such as the *Ricamatori*<sup>2</sup> would do the embroidery. Certainly one individual could make the entire garment but the garment vs. the embroidery would still be considered separate parts of the construction.

Pleatwork or pleatwork embroidery is a term I have drawn from a period German term 'fitz-arbeit' or "pleat work" (Seidel). This term, if used in context with the embellishments on the pleating would allow us to categorize the types of embroidery used on the pleated and embroidered garments of the period.

If the pleating is considered part of the structure of a garment then it becomes a ground for the embroidery no different from any other surface of the garment. Therefore, the embroidery on a pleated ground is "pleatwork" or "embroidery on pleats". This also means that most forms of embroidery used elsewhere for embellishment on clothing can be used for the pleatwork embroidery.

In order to study pleatwork simply look to where there seems to be a need to either deal with large quantities of fabric or create fullness in a garment and look to see how it was accomplished.

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<sup>1</sup> A *Camiciaia* was a sub sect of the Florentine needle guilds during the 15<sup>th</sup> century. They were the ones hired to make the basic clothing and household items such as the *camicie* and *panni lini* ( family linens ) (Frick 38 ).

<sup>2</sup> A Specialty craft group, the term specifically applies to a male embroidery dealer. A female embroiderer was called a *ricamatrice*. (Frick 53)

## History

Pleatwork embroidery spans a very narrow period in its usage on clothing. While it has its origins in earlier times, its popularity was during a 50-year period from about the 1490's to the 1540's in men and women's fashions in Germany and Italy and to a lesser extent England.

During the 14<sup>th</sup> and early 15<sup>th</sup> centuries, clothing and culture is primarily documented through statuary, tapestries and miniatures. Most of the art is religious in subject and very little exists of the individual portrait that comes later. The clothing is narrower in profile and it can be assumed that the undergarments from that time are cut in very straight, simple lines.

As we move along in time, culture progresses towards a time of conspicuous consumption. Opulence shows in the fullness of the clothing. Fullness is no longer needed just for ease of movement but as a proof of wealth.

Towards the end of the 14<sup>th</sup> century, the Italians were in the middle of the trade routes between the Byzantine Empire and the rest of Europe and they prospered. The individual city states became empowered as their citizens turned from more secular interests to exploring art, music and more importantly a sense of the individual. The clothes became fuller and more visible. Necklines lowered and it was fashionable to see shirts and undergarments. Once they became visible under the robes and tunics of the era, they would naturally wish to make them more elaborate and embroidery was one solution.

As could be expected, sumptuary laws were put in place to control certain types of embroidery and embellishment. These were regional and dependent on social status. Pleatwork was included in a number of sumptuary laws. In 1493 and again in 1583, in the sumptuary laws in Nuremberg, shirts embroidered with pearls, having pearls "*fastened thereon*" and other embroidery "*pleated or gathered in gold and silver*" were prohibited for all except for the Patrician (Seidel 72-74).

Henry VIII issued the Acts of Apparell, which forbade the wearing of "garded and pynched shirts and partlets" to anyone with a rank lower than that of a knight.<sup>(Bath)</sup>

It is possible that sumptuary laws are the origins of the usage of the embroidery on the garments. In order to adhere to sumptuary laws, alternative forms of embellishment would need to be utilized. Popular embroidery forms could be adapted to mimic such things gold and jewels, elaborate woven trims and even pearls. As with any garment, the class of the wearer needs to be considered.

If pleatwork were indeed a replacement for embellishments, then it would generally show up in a certain social class level. In general, this seems to be true. In both most of Europe pleatwork as an embellishment is seen in the merchant and lesser nobility class portraiture.

Dr. Zander-Seidel in her book, Textiler Hausrat, Kleidung und Textilien aus Nürnberg, 1500-1650, discusses a custom of German brides presenting their husbands with a shirt worked in gold as a wedding gift. Additionally she has found records that wives were willing to pay sumptuary law fines of up to 20 guildens in order to provide their husbands with these elaborate shirts (Seidel 202-206).

For those who could not afford this extravagance, or for the day-to-day apparel, these laws would explain why we see such an abundance of white worked embroidery on the shirts shown in the merchant class portraits throughout these periods. The white work is very likely a variation of Opus Teutonicum, a period embroidery form originating in Germany during the 12<sup>th</sup> century. The more elaborate gold and silver works, as well as the embellishment with trims and gems, generally only appear in the portraits of the nobility.

## **Documenting Pleatwork**

When trying to document anything it is of course preferable to utilize primary sources. Most of what is available for study through description and portraiture is from the very late 15th century and from the first half of the 16th century. Clothing always provides us with a challenge in that respect because there are very few extant garments available. Written accounts do not always give enough detail to be able to determine what the garments or embellishments actually looked like. For something like pleatwork, which needs a source to not only provide information on the garment but also the embroidery, it becomes more difficult to document.

Portraits as an art form are an invaluable secondary source. One of the major problems on using them to document clothing is that not every artist was skilled enough to show the detail needed nor were all the portraits designed to show that level of detail. There are very few portraits that show such detail that it could be said, yes, here is the embroidery, here are the pleats and it would be done like this. For the majority of the time, it will be conjecture when documenting from portraits: was it embroidery or was it something more trim like?

Allegorical art will always be somewhat of a problem in documenting clothing. Prior to the mid to late 15<sup>th</sup> century, women were generally painted in allegorical settings portraying the Madonna and various Saints. This does not necessarily preclude using the garments depicted in the artwork to help document clothing styles. After all, if you are paying to have yourself or your wife portrayed as a saint, she would of course have to be painted in the latest fashions and in the most opulent of fabrics.

## **Types of Embroidery and Possible Stitch Types**

To clarify definitions for the purpose of this paper, modern terms will be used to describe stitch types because we really do not know what the actual terms were.

After looking at the portraiture and the few extant pieces, both in and out of period, it becomes somewhat clear that there are as many different styles of embroidery over pleats as there are types of embroidery. However, the styles can be broken down into two basic forms:

- Stitching through the pleats: embroidery holds the pleating in place
- Using the pleats as a ground for embroidery

### **Stitching through pleats**

In this form the fabric in the garment is drawn up using a gathering thread or hand pleated into shape and then each pleat is held in place by an embroidery stitch. This would include the modern smocking stitches of outline/stem, trellis, chain, satin, honeycomb, pattern darning and surface honeycomb.

### **Using pleating as a base for surface embroidery**

In this variation, the pleats are drawn up very tightly and the pleats are used like a ground fabric for embroidery. The gathering threads would generally need to be left in on these garments or the pleated area of the garment would have to be stabilized with some form of backing to hold the individual pleats in place. The embroidery is not designed to provide structure to the garment. Modern embroidery techniques such as couching, laid work, appliqué, blackwork and other forms of free embroidery lend themselves well to this type of pleatwork.

## **Pleated Fabric**

There needs to be a separate discussion around fabric manipulation and pleated fabric. Pleated fabric overlaid with trims is just that: pleated fabric with trim. They should not be classed together with the actual embroidered versions, but they are related. If the embroidery can be conjectured to be a replacement to trim embellishment then the underlying pleating to support the embellishment should be similar, or even the same.

Many portraits show garments, unembellished, which are heavily pleated with little or no means of supporting the pleats. It could be that the artist simply did not show the gathering threads in the painting or they were removed after the garment was completed.

Gathering threads were not the only way to create pleats. Dr. Zander-Seidel describes a process by which pleats were set in place using a linen press, a wooden implement that clamped the pleats in place, presumably while wet (Seidel 202-206). This would explain the orderly pleating seen on many garments over the full length of the fabric.

The actual techniques used to create the pleating are likely as varied as the garments themselves. Remnants of pleated linen dating from about the 10<sup>th</sup> century were discovered in the digs at Birka. Agnes Geijer, in her article on the Textile Finds from Birka notes:

“that the pleats were done by gathering the fabric with a needle and thread and subsequently drawing the thread straight. After removing the thread, the fabric was soaked in water, stretched in the direction of the pleats, and then left to dry. When fully dried, the fabric remains tightly pleated” (Geiger 80-99)

Many conjecture that the pleats are anchored by some form of embroidery on the inside of the pleats, most likely using a stem or outline stitch. This would leave orderly rows of pleating showing on the right side of the garment with no other means of holding them in place. There is no evidence, extant or in portraiture that this technique was used. It is more likely that the pleats were either stitched vertically in place or backing fabric or tape was used to hold them in place. This technique would be consistent with other construction techniques of the period.

## **Shirred fabric**

Shirred fabric is a form of fabric manipulation. Modernly it is a form of smocking called Italian smocking or Italian shirring. Shirring runs the gathering threads in a way that creates designs in the pleats as they are gathered. An alb, credited to be that of St. Bernulf, dating from the 11<sup>th</sup> century is possibly the earliest form of this technique. A second alb that of Thomas Beckett's from the 12<sup>th</sup> century also has this form of shirring in the pleated gores. It does not seem to be a common technique during the next 400 years. It is not noticeably seen in portraiture, nor does it show up in the few extant garments until the end of the 16<sup>th</sup> century/ early 17<sup>th</sup> century. One example dating 1600-1650 is on a men's Italian shirt, currently in the collection of the Los Angeles County Museum of Art.

## **Conclusion**

Pleatwork embroidery can be summed up in a few simple terms. It is simply embroidery done on or through a pleated ground for the purposes of embellishing a pleated garment. Some forms of the embroidery will also serve secondary purposes such as adding structure to a neckline or cuff; others will provide controlled ease in a garment. It can be found in many garments in many forms, from the very simple to the extraordinarily elaborate. Regardless of which form it takes, pleatwork is documentable, even if it's just for a short time.

## How –to-Guide

It would be wonderful to be able to say: so you want to make this style of shirt with this type of embroidery, so you will need this much fabric. This is difficult because how much fabric you require is dependent on the finished dimensions of the piece, the number of pleats you need for the design (esp. if it is counted), the amount of fabric you have to pleat into this finished area, the thickness of the fabric and how narrow the resulting pleats need to be.

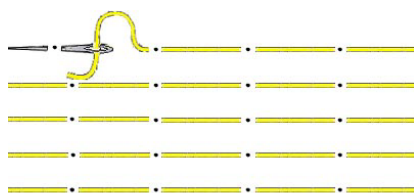
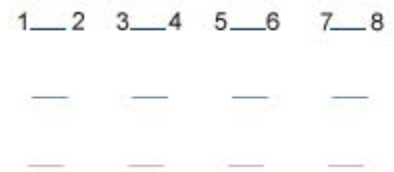
When reconstructing period garments this becomes even more difficult to replicate. The fabrics that would have been used for pleated embroidered garments varied by availability and by class. A peasant would not have the same fabric available to them, as would a merchant class or a noble class. Such fabrics as fine silk and linen lawns would have most likely been used for the finely pleated garments such as some of the shirts and chemises. Heavier linens and even wools would have possibly been used for some of the coarser garments.

Regardless of fabric type, it is trial and error to figure out how much or how little to pleat up your fabric. To help some of this, put it in perspective of a ratio between fabric width before pleating vs. desired width, the number of pleats you need for the design and the desired depth of the pleat.

### *For example:*

45" Wide starting fabric to pleat to 10", this means that you need to have about 4.5" of fabric pleat into 1" when gathered up to the fullness you desire. If in that 1" space you will have a very detailed pattern you will need to place your running stitch creating the pleats closer together, probably about 1/2" this would give you 9 or 10 pleats/inch with the pleats being about 1/4" deep. If you are doing something with less pleating, along the lines of a deep honeycomb pattern then your running stitches might be 1" long, giving you 4 pleats or so per inch finished with a 1/2" pleat depth. Again, this is all relative to the weight of your fabric and the desired outcome. **Experiment !!** Make sure your rows are sufficiently close enough together to provide a solid ground for your embroidery. Too far apart and the pleats will move when working on them.

You will see a number of different ways to pleat up the fabric. One way is to do a full running stitch, with the stitches equal distances apart like a basting stitch or gathering stitch, very much like you would do cartridge pleating. A commercial pleater duplicates this form of pleating.



In the "picking up the dots" method you mark out dots or pinpoints equal distance across the fabric. Then the running stitch "picks up the dots". Some people use plastic canvas to mark out the even dots instead of using the conventional dot transfer paper.

Commercial pleaters of course can be used. The biggest drawback to a pleater is the fixed pleat size. The pleat is about 1/3 inches deep. This generally could be good for many of the shirts and chemises, but there will be times that smaller pleats will be needed to accommodate fabric and patterns and for coarser fabrics or deeper pleats a pleater will not be as useful. Pleaters just do not give you the control that you will need to do most projects.

The horizontal rows are spaced according to the needs of the pattern. They are actually your guide for the embroidery. The bit of material left above the gathering threads are just enough fabric for your stitches to go through in the conventional smocking stitches. NOTE: It is important not to catch your gathering threads in your stitches. This will make it almost impossible to pull the threads out or give the finished work the "float" on the threads for ease.

## Stitch Diagrams

*I have included this small section in order to provide some reference to the modern smocking stitches that can be documented in embroidery pre 1600's.*

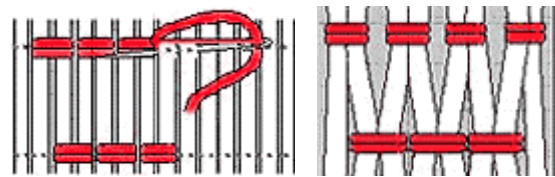


Backstitch shown through pleats. Also indicated are the gathering threads. This is also called running stitch in modern smocking terms and could be the stitch used for the blackwork on the pleats. A form of double running stitch could also be done in a similar fashion.

Stem Stitch / Outline stitch, this is a standard embroidery stitch. The difference is that with each stitch a new pleat is picked up. This stitch would appear to be one of the stitches used on the clothing. It provides straight rows of embroidery while also giving a decorative raised design. It is an inelastic stitch and helps to stabilize the pleats.



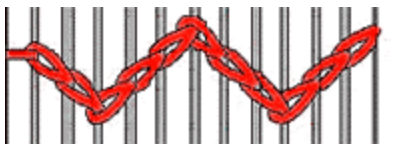
The honeycomb stitch is 2 satin stitches placed together in alternating rows in order to form the honeycomb shape. The thread is carried between the rows on the underside of the pleat. When the gathering threads are released the pattern forms a honeycomb shape. This is one of the elastic form of embroidery and is found most commonly around necklines.



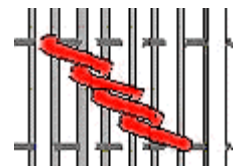
Surface honeycomb is similar to the regular honeycomb but the thread is carried on the top surface of the pleat instead of underneath it. This is a possible alternative for some of the honeycomb-shaped fabric manipulations.



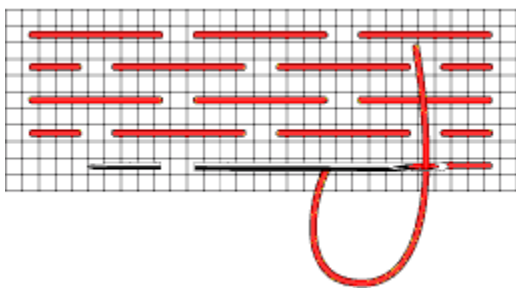
Chain stitch over the pleats is an easy technique and gives a nice effect especially if it is done using a heavier thread. The chain stitch is well documented in period.



The trellis stitch, as it is modernly called, is executed like the outline stitch except that it is done on a diagonal. It can be done to any length and will create v shapes, diagonal lines and diamond patterns on the pleated fabrics.



Pattern Darning is essentially a darning stitch done though the pleats forming a pattern. Instead of going through the fabric, you go through the pleat. The carried thread is laid over the pleats. This is a very strong, secure form of embroidery on the pleats. The threads used in the pattern actually help stabilize the pleats themselves.



**Note on tension :** Tension on this form of embroidery is difficult to predict. The size of the pleats, embroidery stitch used and whether or not the gathering threads are to be left in or removed, all play a role in the tension. Some forms such as pattern darning by nature of the form, actually pull in the pleats, thus shrinking the size of the opening if the tension is not controlled. Blocking the garment in advance on some form of board or cushion can prevent some of these problems. Again there is no easy way to predict what will happen so a test piece is always advised.

## Finishing

There is no right or wrong way to finish the garment. There is proof that bands were used to finish the backs of the garments. This would have served multiple purposes: protecting the pleats from wearing: providing a smooth surface against the skin and anchoring the pleats themselves.

Depending on which embroidery style was used, and the desired outcome of the embroidery, the gathering threads may or may not be removed. If the piece is to have some ease or elasticity than the gathering threads will need to be removed and the pleats will need to held in place by another means, if at all.

If the embroidery is on something that requires a specific measurement or should not move, like a shirt collar or chemise neckline then the gathering threads need to be left in, unless each individual pleat is held in place by either the embroidery or a backing tape. I have interwoven the long gathering threads into the neckline ties on a number of my projects.

The most difficult part of finishing a pleated garment is the edge. If the pleated edge is to go into any form of band, then the pleated edge needs to be manipulated to go in nicely. There is no right way to do this. You may end up flattening the pleats in order to fit them in or you may decide to attach them more like a cartridge pleated garment. Do what needs to be done to achieve the desired finished look. This may be why so many of the pleated garments have a ruffed edge or trim covering the edge.

*Note* : If you are planning on finishing the edge of the pleats so it shows, make sure you finish your edges first. It is extremely difficult to go back and do a rolled hem, or embroidered edge on a heavily pleated garment.

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