

# REVIEW OF MEN'S SHIRT PATTERN DEVELOPMENT FOR THE LAST 100 YEARS

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**Abstract:** From the 19<sup>th</sup> century until now, men's shirt pattern has been evolving and changing for the comfort and style that people need. No matter the fit of the shirt pattern is loose or tight, the style is fancy or practical; the pattern is always traced back to the original try and error draping techniques. This article is a look back on how the shirt pattern has been developed in the last hundred years and a discussion on how to predict the future development of shirt pattern will be in the conclusion.

**Keywords:** clothing pattern, men's shirt, fit, pattern development, wearing comfort.

## 1 INTRODUCTION

The very first shirt was found in Egypt around 3000 B.C. revealing the shirt was made up of three simple pattern pieces: lower front piece, lower back piece and upper front continued to upper back jointed at the shoulder and connected to the sleeve [1-4]. The whole piece of the front-back-shoulder-sleeve was pleated to create room for moving and to accommodate the shoulder, the chest and the arm, these 3 major body shapes (Figure1).

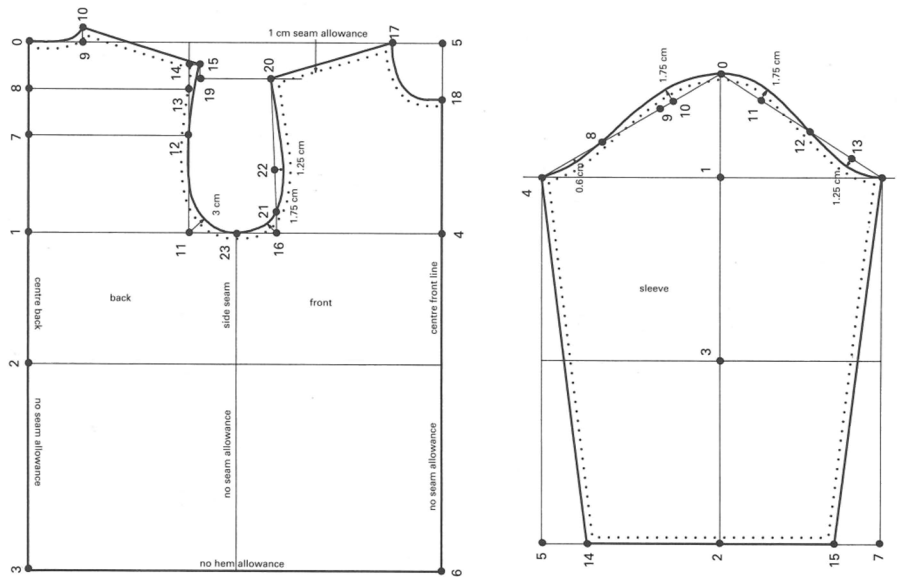


**Figure 1** The oldest shirt found in Egypt revealing connected shoulder and arm piece by pleating

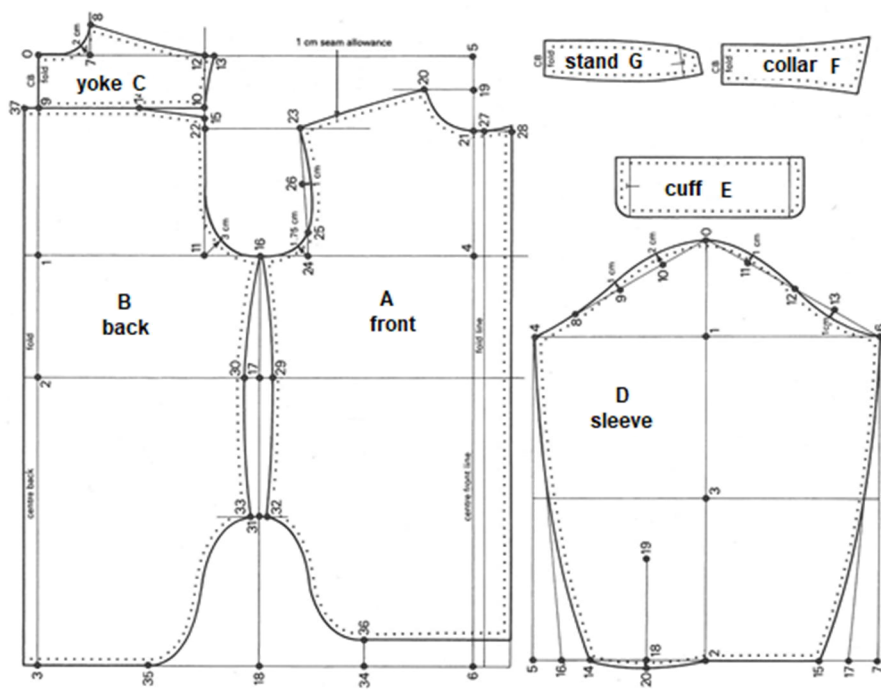
Since then, even the pattern shapes of the shirt have been developed and been changed, however; the basic shapes of the shirt pattern are remained very similar [5-6] that the major pattern pieces in a men's shirt are always with the front, the back and the sleeve. The development of men's shirt in those days was mainly by experience, practice, trial and error. Draping and a simple calculated drafting were/are the common practice [7-8]. This article is a review of the men's shirt pattern for the last hundred years analyzing the changing and evolvement of the pattern then looking forwards to the future development of it.

## 2 BASIC MEN'S SHIRT PATTERN

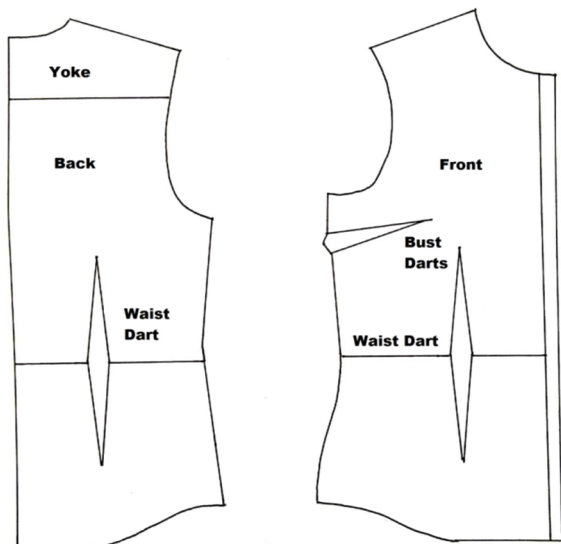
The fundamental shirt pattern set [9] is developed from three basic shirt blocks which are front, back and sleeve (Figure 2). A complete set of shirt pattern is made up of 7 pieces which are: front, back, back yoke, sleeve, cuff, collar and collar stand (Figure 3). This set of patterns can also be converted to fit a women's figure when bust darts and waist darts are added to take up the extra fabric under the bust and around the waist in the front and back to fit the women's figure better. A comparison in Figure 4 is showing the differences between a men's and a women's shirt pattern. Other details like buttonhole plackets, cuff plackets, pocket and facing are developed for functionality, wearing comfort and style.



**Figure 2** Basic bodice blocks: front, back and sleeve from which the complete shirt pattern set and other upper body garment patterns are developed



**Figure 3** A complete set of shirt pattern A - front; B - back; C - back yoke; D - sleeve; E - cuff; F - collar; G - collar stand



**Figure 4** Women's front, back and yoke pattern pieces are similar to men's except the bust and waist darts are added in to better fit the female body

### 3 METHODS OF PATTERN MAKING

There are three major methods of pattern making: 1 - draping, 2 - drafting and 3 - CAD system. A brief introduction as follow:

#### 3.1 By draping

Draping [10-11] is a technique mostly used by dressmakers or couture houses to create dresses or other garments for women. Muslin (plain-woven cotton fabric) in different weight and hands (softness) will be hung directly onto a customer's body or a dress form; then by using drawing tools, pins and scissors, the dressmaker will slowly sculpt the shape of her decided clothing. Then, the three-dimensional muslin will be transferred into two-dimensional pattern pieces on paper (Figures 5a-5b). Toward the completion of the garment, fittings and adjusting the pattern are a must. The finalized patterns can be made into a one of kind clothing or for mass production.

#### 3.2 By drafting

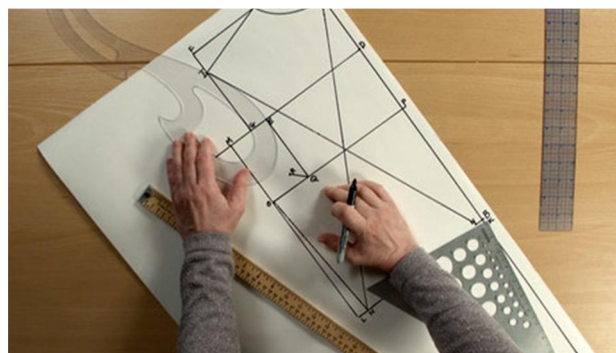
This method is mostly used by tailors for men's clothing as well as small companies to produce pattern pieces directly on manila paper (a durable stiff paper specially made for pattern drafting). Measurements are taken from a mute (clothing company's model) or a customer, and then it will be translated to clothing patterns by manually calculating simple mathematical equations to create the fit and the style [12-13]. Since each pattern maker's experience is different so that the calculation for the fit, the wearing ease allowance may vary. It is also influenced by the company's needs. Figure 3 shows the calculated measurements and the drafted shirt pattern pieces and Figure 6 shows the pattern drafting in progress.



**Figure 5a** Dressmaker uses pencil, pins and muslin to sculpting the side pattern piece for the dress on the right. The black cotton tape underneath the muslin is used to define the design lines of the dress for the dressmaker to figure out the pattern shape



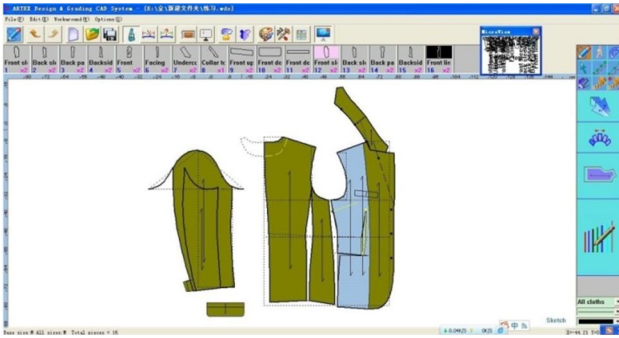
**Figure 5b** Showing part of the finished muslin shapes of the dress. These 3D muslin shapes will then be converted to 2D pattern pieces on paper for pattern cutting



**Figure 6** Showing the progress of a men's shirt drafting

#### 3.3 By CAD system

Computer-Aided Drafting system is the fastest, easiest and more accurate pattern making tool though it is very expensive software and usually used by big clothing labels to prepare for their mass production. Most of the popular CAD system (Figure 7) in apparel/garments industry like Gerber, Tukatech, Optitex, Lectra and more; allow the user to adjust, to change, to cut, to grade and all other different functions to pattern making by inputting the measurements. It is highly efficient and time-saving [14-15].



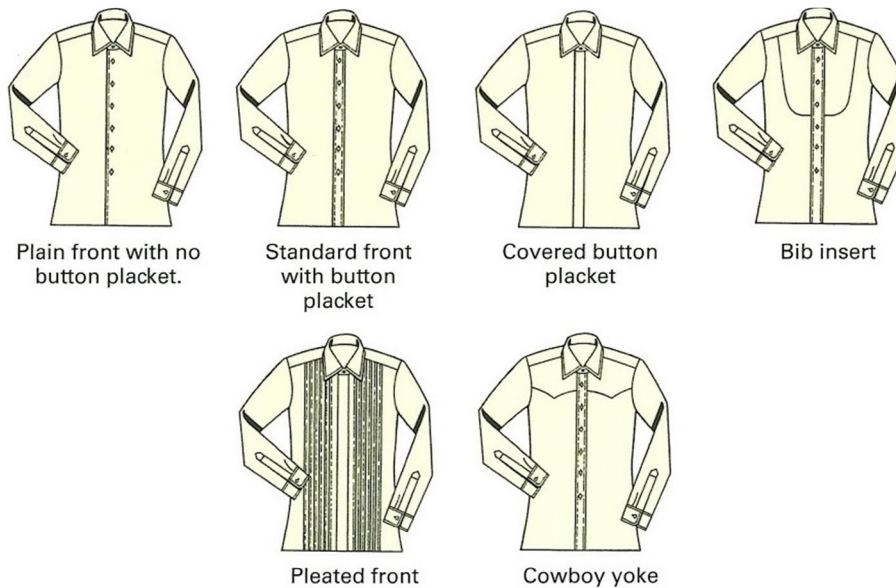
**Figure 7** Showing one of the CAD software for pattern making

#### 4 BRIEF HISTORY OF SHIRT DEVELOPMENT

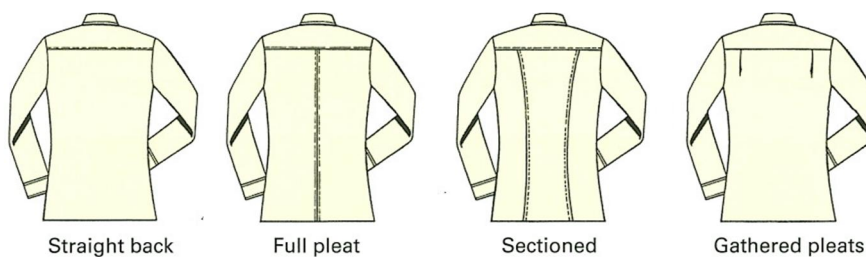
In the 17<sup>th</sup> century, shirt was worn in Europe as an undergarment to protect the expensive waistcoat wearing on top and to prevent the jacket from sweat and soil [16-17]. Early in the 18<sup>th</sup> century, Beau Brummel [18-19] and another iconic figure in Regency England brought shirts into the spotlight and turned it into an essential garment for men.

During the 19<sup>th</sup> century, shirt was considered as luxurious attire due to heavy labor to keep it clean and white. Until later in the mid-19<sup>th</sup> century when the laundry techniques were improved, shirt market was expanding with affordable prices then the shirt was truly gaining its popularity.

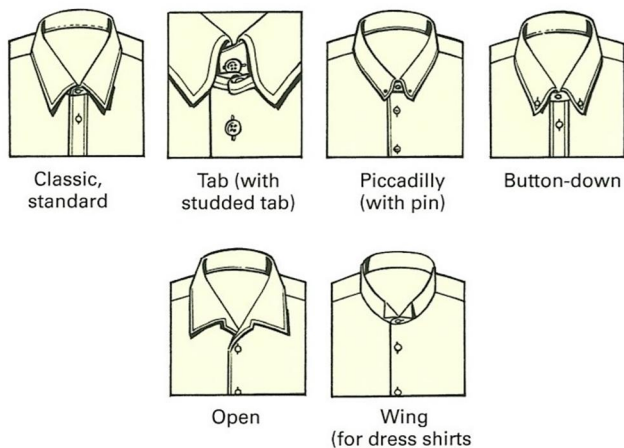
For the last hundred years, shirt style and fit are constantly changing; from broad shoulder and wider chest circumference to allow more mobility but bulky, and to the slim fit which is narrower from the shoulder down to chest and waist and limiting movement yet provides the wearer a slender look. Moreover, the stylish cuffs, forever changing sleeve length, dozens of collar and collar stand styles combination plus decorative buttonhole plackets; shirt has been evolved into a big market in the garment industry [20]. Figures 8-11 are showing some details of shirt front, shirt back to cuffs and collar that will be discussed in the shirt pattern through the history of time Part 2, 3 and 4.



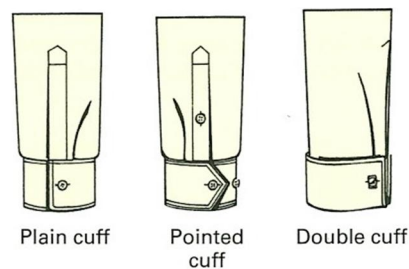
**Figure 8** Details development of shirt front including button plackets, front yoke, inserted pieces and pleats



**Figure 9** Shirt back development from single panel to 2, 3 panels and pleating



**Figure 10** Shapes, height and opening angle of the collar has been changing throughout the history



**Figure 11** Subtle changes of cuffs are still based on the plain cuff pattern

## 5 SHIRT PATTERN THROUGH HISTORY OF TIME PART 1: THE BODICE

### The 1900s

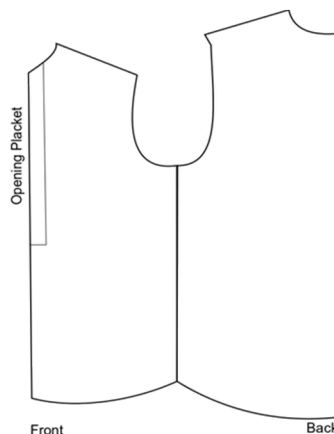
In the early 1900s, shirt was still tailor-made, roomy and worn as underwear for comfort. Shirt was the pull-over style (Figure 12) mostly made of linen, high maintenance and only privileged class could afford. After the mid-1900s when machines were invented to mass-produce and to clean shirts, shirt prices became affordable and popularized. Dress-shirt was always pull-over style until after coat shirt style [21, 22] (which is today's buttoned-front shirt) was developed around 1912 and then old-style slowly faded away in the early 40s. Since not many pieces were survived before the 1920s that shirt patterns can only be estimated from pictures and catalogue drawings.



**Figure 12** Left, a replica of pullover style from the same era; right, showing the fit of the roomy shirt on people

Since shirts were mass-produced by machines. Dress shirt and work shirt were similar in patterns and sizes, only differences were the materials and details, for example like pearl buttons; number and details of pocket; single, double, triple-stitched or flat-fell seam finish. The dress shirt was almost

always made of linen and work shirt was heavy twilled cotton [23]. The full-length shirt was 36 inches [24] from the 7<sup>th</sup> cervical vertebrae of the back neck down to the shirttail, 46 inches chest circumference and 19 inches biceps circumference (Figure 13) for a 15½ neck size man [25-27]. Shirt size was the neck circumference and sizes were divided into 14½, 15, 15½, 16, 16½, 17 inches, six sizes; considered men's figures were not athletic build as today that the shirt was very roomy [28].



**Figure 13** Estimated front and back patterns for visual reference only, not in true proportion

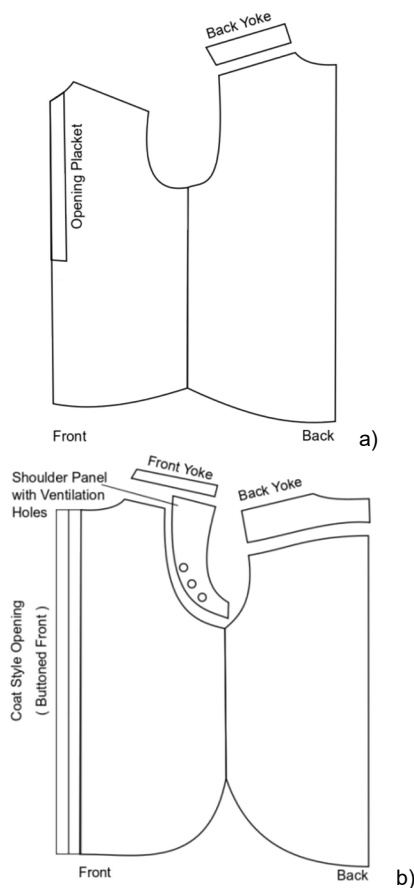
### The 1910s-20s

During this era, dress shirt patterns remained unchanged but work shirt patterns had been developed into a few different elements (Figure 14). The back yoke from single to double, from thin to wide and across the shoulders; and later the yoke was extended to cover the lower chest and doubled to endure abrasion during work. Ventilation holes were punched and stitched onto the back yoke and along the armholes or the chest yoke extension to

lower body heat during heavy workload (Figure 15). Chinstraps and scalloped yokes were developed for comfort. Patterns of work shirt were gradually slimmed down and shortened but still comfy and the fit of the shirt became the classic fit model for today's shirt and this was quickly adopted by the dress shirt/business shirt [18, 29-30] during this era. Coat style shirt was developed in 1912 and slowly became popular while the pull-over style shirt remained until the early 60s'.



**Figure 14** Package and the catalogue page from the 20s' showing the fit of the shirt



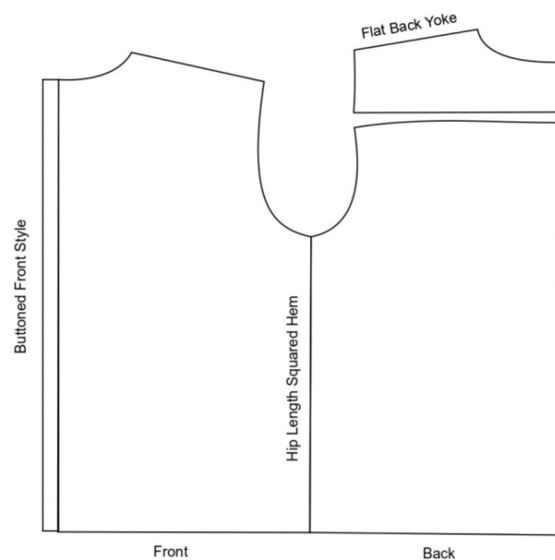
**Figure 15** Dress shirt patterns: pullover style and high back yoke (a); work shirt patterns: coat style with front/back curved yoke and shoulder panel with ventilation holes (b)

The 1930s-40s

Buttoned-front shirt and classic fit dominated the market (Figure 16). Round shirttails were gone and replaced by squared hems. Shirt length was shortened to hip for the trendy untucked shirts liked Cuban collar (one-piece convertible collar) shirt, Hawaiian shirt, Camp shirt, etc., and also for easy tucked in when pairing with a pair of high-waisted pants. Sleeves were shortened; chinstraps and detachable collars were out of style. Flat yoke design became classic until today (Figure 17). Overall, shirts meant to fit only neck and shoulders but draped down loosely for comfy and style [31-34].



**Figure 16** The easy-fitting style became a classic fit for today's shirt



**Figure 17** Loose, roomy, squared hem Camp shirt with flat back yoke and buttoned front style

The 1950s-60s

Post-war era, classic fit, buttoned-front shirt style and flat front/back yoke were standard elements in dress shirts, business shirts, workwear and casual wear. Changes were only in colors, patterns on shirt and materials (Figure 18).



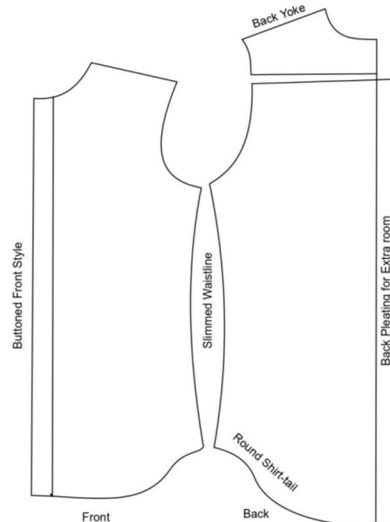
**Figure 18** Classic fit, the buttoned front became standard with more color and pattern choices

*The 1970s*

The '70s was the era of synthetic materials and polyester was the highlight of all. Cotton/polyester blend or 100% polyester clothing were everywhere. These materials allowed designs of clothing to become narrower, tighter or even skin-tight that the whole suddenly slimmed down a lot (Figures 19 and 20).



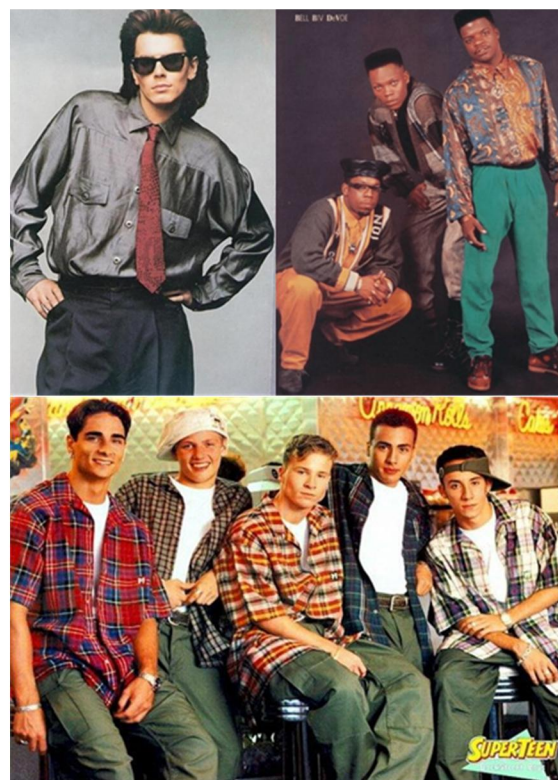
**Figure 19** Samples of slimmed and skin-tight fit shirt from the catalogue page



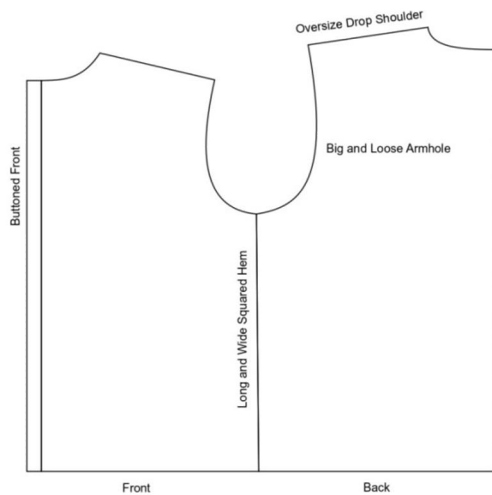
**Figure 20** Slim shirt patterns: flat back yoke, take in waistline, back pleat and round shirt hem

*The 1980s-90s*

Since the 60s, the world economy had risen until the 80s'; everyone was celebrating and enjoying life. The entertainment business was flourishing and had a great influence on clothing, especially Hip-Hop style. Big, oversize, broad shoulder, loose and baggy shirt was popular casual wear in the young generation. However, the business shirt was still slim and snugly fit that was inherited from the 70s' trend [35] (Figures 21 and 22).



**Figure 21** Samples of a loosely draped shirt with dropped shoulder and over-sized bodice



**Figure 22** Big, loose, oversized and squared hem Hip-hop shirt patterns

The 2000s till now

Hip Hop baggy shirt continues till today among younger groups as their casual wear while older males are increasingly aware of tailoring, and making a garment fit right for their body shape, rather than going with the fashion trend [36].

For this reason, the adaptation to dress shirt and business shirt markets, the fit of the shirt was slowly divided into three major groups for mass production; they were classic fit, standard fit and slim fit. Until today, these three groups of fit are still used by every clothing company and become industry standard even though each company may define their fit slightly different or may have a different name for themselves, however; the core concept is the same which is to divide the majority of body types into manageable groups of fit for mass production (Table 1 [37], Figure 23).

From shirt was being worn as the undergarment to being part of the necessary elements of the classic attire for men, the shirt has been changing and developing through a different era. However, all these changes are still based on the basic pattern blocks as shown in Figures 2-3. Collar, collar stand, sleeve, cuffs, yoke, shirt front and back; no matter how these patterns turn from plain to fancy or even complicated pattern pieces, there are still strongly influenced

by the original pattern blocks. Among all these changes, the fit is the most important parameter that will directly influence the comfort of the wearer. Shan mentioned, "Fit is defined as the relationship between the size and contour of the garment and those of the human body. It is a complex issue related to such as apparel construction, anthropometry, apparel comfort, apparel psychology, computer graphics, and so on" [38].



**Figure 23** Samples of shirts with a classic, slim and regular fit

**6 DISCUSSION AND CONCLUSION**

Shirt is an important piece of garment, especially for men. Since the shirt slowly gaining its popularity in the 19<sup>th</sup> century until today, the market demand for the shirt is still growing globally [39, 40]. Especially nowadays, new technologies are involved and materials are invented; more and more innovative textiles and smart garments are developing. However, the clothing pattern still relies on the fundamental basic bodice and sleeve blocks which are originally derived from draping techniques hundreds years ago. With this hi-tech fabric slowly filling in the garment business, would the traditional basic blocks be compatible with the new materials; or should there be a new set of clothing patterns developed. Even clothing pattern is produced with the CAD system; it is still based on the basic blocks. When the materials / textiles are going forward but the basic clothing pattern set is still staying behind. Does it make sense?

**Table 1** Comparison table of three common garment fits

	<b>Classic fit</b>	<b>Regular fit</b>	<b>Slim fit</b>
Pattern Cutting	Cut generously and hang loosely, very roomy	Hang loosely on the body but not baggy	Hang snugly but not too tight
Comfort	Less tight and more comfortable than a regular fit	Comfortable	Not as comfortable as regular fit
Sleeve	Big armhole and roomy sleeves	Full sleeves but not overly loose	Less full sleeve and smaller armhole
Shoulders	Broader shoulder yoke with a box pleat to allow more mobility	Less broad shoulder yoke may or may not have a box pleat	Slimmer shoulder yoke may have back darts
Measurement of a 15.5 neck size shirt	Chest 49" Waist 46"	Chest 47.5" Waist 44"	Chest 46" Waist 42"



A new pattern set should be researched and be invented. New pattern blocks should focus on build-in thermal insulation to keep the wearer warm, sweating efficiency and cooling effect by researching clothing air gaps and pattern sizes and shapes relationship. Of course, body movements and wearing comfort cannot be neglected. With new materials and new pattern set, this evidence creates the new world in the garment industry for our future.

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## 8 ILLUSTRATIONS

*Figure 1:* See the World's Oldest Dress, National Geographic News, February 18, 2016, <https://news.nationalgeographic.com/2016/02/160218-oldest-dress-egypt-tarkhan-archaeology/>

*Figures 2, 3:* Aldrich W.: Metric Pattern Cutting for Menswear, John Wiley & Sons, 2011

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*Figure 14:* left [23], right [27]

*Figure 16:* left [32], right [23]

*Figure 18:* top [25], bottom [26]

*Figure 19:*

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*Figure 23:*

<http://www.fashionindustrynetwork.com/m/blogpost?id=786233%3ABlogPost%3A168752937-https://stylesequelblog.wordpress.com/2016/02/02/mens-fashion-trends/>