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# **Development of a composite collar drafting system**

**(For all principal collar types and their variations)**

A thesis submitted in fulfilment of the requirements for the degree of

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## **Abstract 2005**

Although collars represent only a small area of the pattern-making experience, they form a natural focal point when combined with the main parts of the garment. They are therefore an important design element that needs a considerable amount of thought. Presently, collar pattern-making follows a number of developmental paths that diverge considerably in their outcomes. Each collar style has a different collar drafting method to obtain the required collar silhouette and within each method there are many variations. Generally, drafts cannot be transported between styles, even changing the stand and fall measurements may not be possible without resorting to trials and drafting instruction alterations. Because of this individualistic approach there is a lack of standardisation and predictability to collar drafting in general and not all collar drafting methods are equal, some are better than others. Determining the more useful and advanced drafting techniques from, sometimes, conflicting methods is a matter of trial and error which, in itself, acknowledges and enlarges these unpredictable methods.

Through an empirical knowledge of current collar drafting methods, coupled with an overview of the body of collar drafting methods derived from the literature, this thesis evaluated a number of selected collar drafting methods to identify their common elements, their underlying strengths and weaknesses and reasons for the scarcity of predictability of final collar forms. From the results of three-dimensional fabrications, a series of questions concerning their performances are developed to evaluate the drafting outcomes.

A conceptual analysis, in which the mannequin was divided vertically in to a number of discrete 'sections' showed the importance of the relationships between all of the collar styles, their front opening positions and individual body neck-lines, giving a better understanding of how collars actually work. Conceptually dividing the mannequin in to a finite number of sections formed the foundations of the 'composite' collar drafting system.

A composite collar drafting system, with a single set of instructions was developed that could enable designers and pattern-makers to create collar styles and their numerous variations, with the assurance that the envisaged two-dimensional collar will also be the final three-dimensional silhouette. The composite collar drafting system instils

confidence in the entire process leading to a reduction in the number of toiles required to confirm a design. Novices should find the single composite collar drafting system easy to remember and apply, thus reducing the required learning period needed to master collar drafting. From the very beginning the whole design and pattern making procedure is obvious in methods, layouts and conclusions, making collar drafting a predictable cost-effective endeavour

The composite collar drafting system, which may be capable of computerisation (something that is not, at present, available to the practitioner), positions itself outside of the current main-stream two-dimensional manual and computer methods and the small number of computerised three-dimensional versions of manual collar drafting, which only describe single collar types. There is no system that accounts and includes multiple collar styles and alternative designs, except the composite collar drafting system.

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## List of collar names

|  |   |
|--|---|
| Convertible (or two way collar)        | Styled with lapel and close to the neck                         |
| D.B. Tailored jacket with peaked lapel | Fully structured  |
| D.B. Ulster overcoat                   | Fully structured  |
| Eton                                   | High fastening  |
| Peter-Pan                              | Sits flat on and around the shoulders                           |
| Prussian                               | High fastening overcoat   |
| Regency (or Highwayman)                | Fully structured with separate break lines for collar and lapel |
| Roll                                   | Stands up close to the neck all round                           |
| Sailor                                 | Sits fat on and around the shoulders                            |
| S.B. Chesterfield overcoat             | Fully structured  |
| S.B. Clover-leaf                       | Rounded at the corners on both collar and lapel                 |
| S.B. Tailored jacket with lapel        | Fully structured  |
| Semi-Roll                              | Stands up close to the neck at the back/ lies flat at the front |
| Shawl                                  | (under collar is attached to the front pattern)                 |
| Shirt                                  | (Close fitting to the neck)                                     |
| Stand                                  | (Chinese, Mandarin.) Stands up close to the neck                |



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## List of abbreviations

|              |   |
|--------------|---|
| CAD          | Computer Aided Design                           |
| C.B., C/B    | Centre back line of the neck or garment         |
| C.F., C/F    | Centre front line of the collar or garment neck |
| D. B.        | Double breasted                                 |
| F. edge, F/E | Front edge                                      |
| GGT          | Gerber Garment Technology                       |
| No.          | Number  |
| p. s. i.     | pounds per square inch                          |
| S. B.        | Single breasted                                 |
| T. C., T/C   | Top collar                                      |
| U. C., U/C   | Under collar                                    |



## List of definitions

|                     |  |
|---------------------|--|
| Back                | The back section of upper body of the garment from shoulder to hem.  |
| Balance             | <i>'A general description, as the word suggests, for a lack of distortion.'</i> Taylor and Shoben, 1990; p26.  |
| Block fuse          | The process of fusing a fabric in a blocked shape, larger than required, to pre-shrink the fabric piece prior to accurate cutting.   |
| Break line          | <i>'A crease edge of the collar is the line or edge where the collar stand becomes the fall by being creased over to run with the crease line of the lapel.'</i> Morris, 1947; p 235. (see crease line). |
| Break point         | <i>'Where the rever turns back to form a lapel.'</i> Aldrich, 1985; p 114.   |
| Buttonhole distance | A measurement from the buttonhole to the front edge of a garment.  |
| Button distance     | The distance from the front edge to the button.  |
| Button wrap         | An allowance measured from the button to the front edge of a coat or jacket.   |
| Centre Back (C/B)   | Centre of the back line of the neck.   |
| Centre Front (C/F)  | Centre of the front line of the neck.  |
| Collar              | <i>'A collar is the part of a garment that encircles the neck and frames the face.'</i> Joseph-Armstrong, 1987; 254.   |
| Clicker knife       | A thin steel knife outline for the cutting, and retention of standardised shapes during manufacture.   |
| Crease line         | The line that separates the stand from the fall and the lapel from the forepart (see break line).  |
| Digitiser           | <i>'A work table and a free-floating cursor which are used to convert pattern shapes into a format understood by the computer system.'</i><br>Cooklin, 1990; p 362.                                      |
| Double Breasted     | Two rows of buttons, one each side of the centre front line.   |
| Draft               | Collar instructions/diagrams (blueprint).  |

|                             |   |
|-----------------------------|---|
| Ease                        | An amount of seam line longer than that required; It is used to manipulate another shorter seam line or to impart shape.  |
| Fall                        | <i>'The fall of the collar is that part which falls over or turns back from the edge of the stand down over the shoulders.'</i><br>Morris, 1947; p 235                          |
| Forepart                    | Front section of upper garment from shoulder to hem (see front).  |
| Front design line           | The front shaping of a collar.  |
| Front                       | The front section of an upper garment from shoulder to hem (see forepart).  |
| Fusible                     | Inside fabric sandwiched, glued and fused between the top collar and the under collar to give extra body and enhance appearance.  |
| Fusing Press                | Used to press the fusible to either the top collar and/or under collar by heat and pressure; helps to give shape and body.  |
| Gorge                       | Front neckline shape.   |
| Grade rule data             | Data that defines the movement of a grade point for one size.<br>Cooklin, 1990; p 364   |
| Grade rule table or library | <i>'A grade rule library can be compiled of numbered grade rules used at the grade points of the block or basic pattern.'</i> (CAD).<br>Aldrich, 1984; p 160.                   |
| Grading                     | Making patterns larger or smaller than the original, whilst retaining the same proportions and styling.   |
| Inner or neck edge          | <i>'The edge of a collar that is stitched to the neckline of the garment.'</i><br>Joseph-Armstrong, 1987; 254.  |
| Lapel                       | <i>'Revers (or lapels) are the front edges of a bodice, blouse, jacket or coat which, in their upper part, fold back over a line known as a crease line.'</i> Bray, 1985; p 90. |
| Leaf edge                   | The outer edge of a collar that sits around the shoulders.<br><i>'Fall edge or leaf edge.'</i> Shoben and Ward, 1990; p 128   |
| Mannequin                   | A model of a human body representing a specific size.   |

|                                    |   |
|------------------------------------|---|
| Marker                             | The arrangement of patterns on paper or fabric to reduce fabric wastage.  |
| Master size                        | The first pattern to be produced. Usually one of the middle sizes (size 12 for women or 100cm chest for men).                                       |
| Melton                             | Milled woollen cloth used for under collars.  |
| Mirror                             | Copied area formed on a folded line (mirrored line).  |
| Mirrored line                      | Fold line used for duplication.   |
| Modelling                          | The process of shaping fabric on the dress form.  |
| Neck Line                          | <i>'The portion of the collar which will be attached to the garment.'</i><br>Pepin, 1942; p 145.  |
| Neck Points                        | The joining points of the neck line and shoulder seam of the front and back body sections.  |
| Nest                               | The superimposing of one size (pattern) on another so that the progression of increase is clearly visible. Taylor and Shoben, 1990; p 26.           |
| Notches                            | Cuts in pattern pieces or garment parts with which to align other cut pieces.   |
| One-piece collar                   | Stand and fall cut in one piece.  |
| Pattern engineering/<br>Engineered | A method of pattern cutting that dictates the garment shape, rather than by traditional tailored methods of stretching and shrinking with the iron. |
| Piping                             | An added amount of fabric that turns under to hide a seam line.   |
| Plot/Plotter/Plotting              | <i>'Draws full- or small-scale patterns, nested grades and markers on to paper.'</i> Taylor and Shoben, 1990; p 71                                  |
| Plotter                            | Computerised machine for drawing pattern pieces and markers.  |
| Ready-to-wear                      | A garment made from standard or average body measurements.  |
| Round gorge                        | Curved section of the front neck.   |
| Profile former                     | Tool to duplicate 3 D forms, in a straight line.  |
| Seam allowance                     | An allowance for joining separate garment sections together.  |
| Self fabric                        | Fabric used for the outside of a garment.   |


















|                              |  |
|------------------------------|--|
| Set of collar                | <i>'The way it lies and fits at the neck.'</i> Bray, 1985; p 78.   |
| Shrinkage                    | Amount a material will contract under the influence of heat and pressure.  |
| Single Breasted              | One row of buttons on the centre front line.   |
| Split collar                 | Separate stand and fall patterns (see two-piece collar).   |
| Spring                       | An angling procedure for the insertion of extra leaf edge length.  |
| Square gorge                 | Straightened corner section of the front neck.   |
| Stand                        | <i>'The stand of the collar is that which fills up the neck of the coat to the desired height.'</i> Morris, 1947; p235.              |
| Step collar                  | <i>'So-called because the distance the collar-end is from the end of the lapel forms a "step".'</i> Morris, 1947; p 235.             |
| Stock garment                | A garment that is 'ready-to-wear'.   |
| Superimposition              | Two or more lines occupying the same position (overlaid lines).  |
| Tailored                     | An outer garment structured with an underlay of padding (canvas or fusibles). M.T.M. or stock garments.                              |
| Tailored collar              | A canvassed or fused top collar sewn to a self fabric or melton under collar.  |
| Toile                        | <i>'The toile contains the basic shape of the dress (or other garment) and must fit perfectly.'</i> Silberberg and Shoben, 1993; p 3 |
| Top collar                   | Outside or façade of a collar (self fabric). Sometimes fused to give structure.  |
| Top plate                    | Wooden reinforcing disc placed in the neck of the mannequin.   |
| Trimmings                    | Fusibles, thread, buttons etc.   |
| True length                  | Actual length of a line (not in perspective).  |
| Two dimensional (2D)         | A flat object with only length and breadth measurements (no height).   |
| Two dimensional Grading (2D) | <i>'When the pattern changes only in girth and height and not in shape.'</i> Taylor and Shoben, 1990; p26.                           |
| Three dimensional (3D)       | An object having three measurements, length, breadth and height.   |
| Three dimensional            | <i>'grading techniques which change suppression as well as</i>   |

|                  |   |
|------------------|---|
| Grading (3D)     | <i>girth and height grades.</i> ' Taylor and Shoben, 1990; p26.   |
| Two-piece collar | 'A (coat) collar with a separate stand, i.e. a seam between the stand and the fall.' Bray, 1997; p 132. (see split collar). |
| Under Collar     | Under side of a collar, either self fabric or melton.   |
| Wedge-in         | Increasing the length of a seam line by a specified amount.   |
| Wedge-out        | Decreasing the length of a seam line by a specified amount.   |
| X Coordinate     | The horizontal axis of a pattern piece. 'X' to the right and '-X' to the left.  |
| Y Coordinate     | The vertical axis of a pattern piece. 'Y' as the upper point and '-Y' to the lower point.                                   |












## Line colour key for collar drafts







Under collars: Figures 7.1-7.43 (pages: 174-228)

|           |   |   |
|-----------|---|---|
| Stage 1a  | <br>  | Collar stand section (sector) lines<br>Body section (sector) lines            |
| Stage 2   | <br><br> | Collar stand section lines<br>Collar fall section lines<br>Body section lines |
| Stage 3a  | <br>  | Collar stand section lines<br>Collar fall section lines                       |
| Stage 3b  |    | Alternate colour stand and fall section lines                                 |
| Stage 3c  | <br>  | Alternate colour stand and fall section lines<br>Transferred neck edge line   |
| Stage 4 a | <br>  | Opened section lines<br>Smoothed leaf edge line                               |
| Stage 5a  |    | Alternate colour stand and fall section lines                                 |
| Stage 5b  | <br>  | Opened section lines<br>Smoothed leaf edge                                    |

Top collars: Figures 7.44-7.45 (One piece collars) (pages: 231-233)

|          |  |  |
|----------|--|--|
| Stage 1a | <br>   | Alternate colour stand and fall section lines<br>Transferred neck edge line  |
| Stage 1b | <br><br><br> | Alternate colour stand and fall section lines<br>Transferred neck line<br>Break line ease allowance<br>Original gorge line |
| Stage 2a | <br><br>  | Opened section lines<br>Transferred neck line<br>Leaf edge piping  |

Top collars: Figures 7.46-7.49 (Two piece collars) (pages: 234-239)

|          |  |   |
|----------|--|---|
| Stage 1a | <br>   | Alternate colour stand and fall section lines<br>Transferred neck edge line   |
| Stage 1b | <br><br><br> | Alternate colour stand and fall section lines<br>Transferred neck edge line<br>Break line ease allowance<br>Original gorge line |

Stage 2a

Stage 2b



Stand and fall separation line and notches



Alternate colour stand section lines



Opened section lines



Transferred neck line



Break line



Leaf edge piping