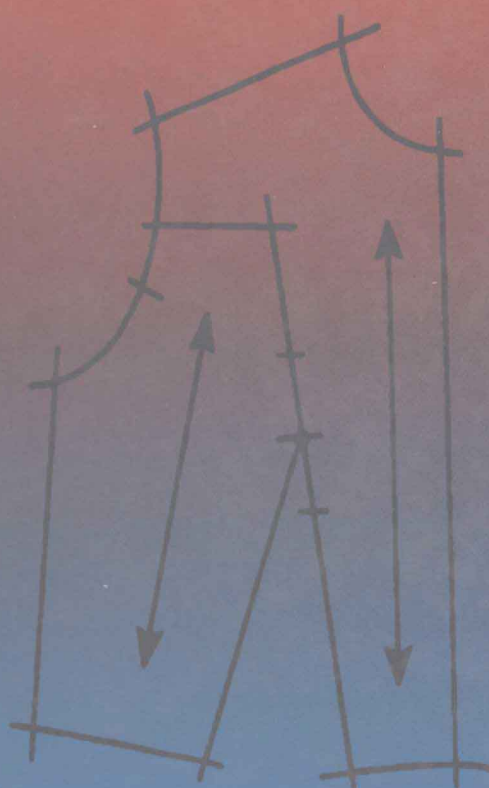


DESIGNING

APPAREL THROUGH THE FLAT PATTERN

6TH EDITION



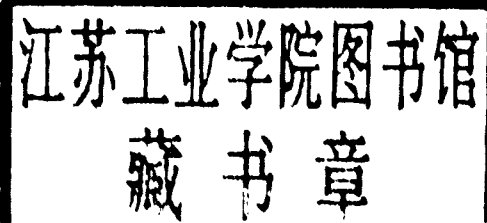
ERNESTINE KOPP

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DESIGNING APPAREL THROUGH THE FLAT PATTERN



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Sixth Edition

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FAIRCHILD FASHION & MERCHANDISING GROUP
NEW YORK

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Second Printing 1983

Fifth Printing 1989

Third Printing 1985

Sixth Printing 1991

Fourth Printing 1987

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Standard Book Number: 87005-737-5

Library of Congress Catalog Card Number: 91-71264

Printed in the United States of America

The trend of the fashion industry is such that a rapid output of new designs is imperative. With the pressure for new lines, manufacturers are using a combination of draping and patternmaking rather than limiting themselves to one method of expression for their designs. Certain style features within a silhouette are better developed through draping, others through patternmaking.

Patternmaking, however, offers the designer shortcuts in executing basic parts of a garment within a design, whether the design is original, copied, or mass produced.

The device which facilitates the rapid development of patterns is the *sloper*.

Manufacturers have their own set of slopers, developed from their own specific measurements or from a model form. Slopers must also be changed to conform to the fashion silhouette of the season. Thus, one may encounter a wide variety of basic slopers. The development of the patterns within *Designing Apparel through the Flat Pattern* is such that the principles and instructions may be applied to any variation.

Our objective is to instruct an individual in the use of the flat pattern as a means of developing original ideas effectively and efficiently. We present thoroughly the utilization of the three basic slopers—waist, sleeve and skirt—and some popular variations of these such as the kimono waist, raglan sleeve and pants. An employee in the garment industry using this book should avail himself of the firm's basic patterns. An individual using this book should draft slopers from measurements.

We suggest using the companion text, *How to Draft Basic Patterns*, for instructions on how to develop a scientific basic pattern. A sloper may also be developed through draping muslin on the model form and then converting the muslin pattern into a paper sloper. Miniature slopers in one-quarter scale have been included for experimental use. We suggest that you cut out these slopers and paste them onto a stiff piece of cardboard. It is, however, preferable to develop all problems on the full scale sloper. All results should be tested in muslin for line, proportion and fit before they are used for cutting and construction of garments.

This book attempts to assist individuals on all levels of accomplishment. From the beginner with no experience to designers who have had many years of experience. Each will select those areas and problems that can best serve his needs. It is advisable that all individuals, no matter how advanced, read this book in sequential order and study the illustrations to gain an awareness of the dependency of one pattern on another.

To understand fully the principles involved in developing slopers and patterns and to obtain accurate results, the tyro in the field must develop the problem, starting with the basic fundamentals of dart manipulation. The individual, depending on his background and ability, should select a sufficient number of applications to master the principle within each unit. A number of applications are provided for each project to supply variety and sufficient practice, if needed. Very few definite or specific measurements have been given. This has been done intentionally to allow for complete freedom of design.

The organization of the material in this book is aimed to promote a scientific approach in the utilization of the basic sloper. This edition includes a unit on basic information needed to develop slopers and patterns. The material covered in this unit, if carefully applied when developing any of the projects in this book, will result in the accurate and professional production of slopers and patterns. New subjects covered include vests, halters, facings, pockets and tabs. All measurements are given in metrics and imperial measurements. For your convenience a Metric Conversion Chart is also included.

We wish to acknowledge the many members of the faculty of the Fashion Institute of Technology who provided inspiration, encouragement and educational leadership in the formation of the first edition many years ago and particular thanks to the late Dr. Lawrence L. Bethel, former President of the Fashion Institute of Technology, Founder Dean Emeritus Rosalind Snyder and to the late Dean Emeritus Molly Slonin.

1991

Ernestine Kopp
Vittorina Rolfo
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BASIC INFORMATION NEEDED TO DEVELOP introduction SLOPERS & PATTERNS

This unit covers the terminology, identification and proper usage of tools and basic principles applicable to the development of slopers, sub-slopers and patterns regardless of size, shape or design. The material covered, if carefully applied to any of the projects in this text, will result in the accurate and professional production of slopers and patterns. It is advisable to study this unit before developing the projects in this text.

A sloper is the popular term used for the basic waist, skirt, sleeve and pants patterns from which all designs are developed in flat patternmaking. Slopers are also called *master patterns*, *block patterns* or *foundation patterns*. They are developed usually without seams, since seam allowances can sometimes interfere with the proportioning and developing of design variations.

Original basic slopers that have been completed, tested and corrected should never be altered to develop a specific garment as original slopers are the foundation for

developing either slopers or designs. It is advisable to make a copy of the slopers needed to make the changes necessary for the garment being developed.

Slopers may also be used as patterns. If so, seam allowances must be added.

A pattern represents a garment developed in sections. All patterns within their shapes include seam and hem allowances, grainline, size, notches, placement for buttons, buttonholes, pockets, etc.

The rules and principles covered and illustrated in this unit and the patterns developed in this text have been worked from various dress slopers. However, the rules and principles and projects may be applied to coat and suit designs as illustrated by some of the sketches. To develop patterns for coats and suits or sub-slopers, substitute the basic coat or suit sloper for the dress sloper. Refer to *How to Draft Basic Patterns*.

TERMINOLOGY & PROCEDURES USED IN THE DEVELOPMENT OF SLOPERS & PATTERNS

BALANCING

Balancing is the process of matching the two sides of a seam for position of grainline, length of seam and amount of flare or fullness introduced.

CLOSE & CUP

Close and cup is a term used when trueing darts. It means to crease one dartline and match creased fold to opposite dartline and pin dart closed. Fold pattern under at apex or dart point and true seamline crossing dart.

COPY

A thin patternpaper is placed under sections of draft, pinned to prevent shifting, and copied using proper tools, lines, crossmarks, etc.

CROSSMARK

A short line which crosses a seamline, dartline, tuck line, etc. Used to indicate seam joining, matching points or stitching points.

CUT

Cut on inside of pencil line. This refers only to cutting finished outside lines on slopers and patterns to retain the original fit when copying and outlining.

DART UNDERLAY

A dart is a "V" shaped stitched fold starting at a certain width at one end and tapering to a point at the other end. The material between the stitched lines is called underlay or pick up.

DOT

A small round mark used to denote a specific point on a sloper or pattern, often indicated with an awl.

NOTCHES

Notches are crossmarks transferred from seamline to edge of seam allowance, indicated by a notcher. Notches are used on finished patterns.

OUTLINE

The process of drawing a line along edge of sloper or draft without seam allowance.

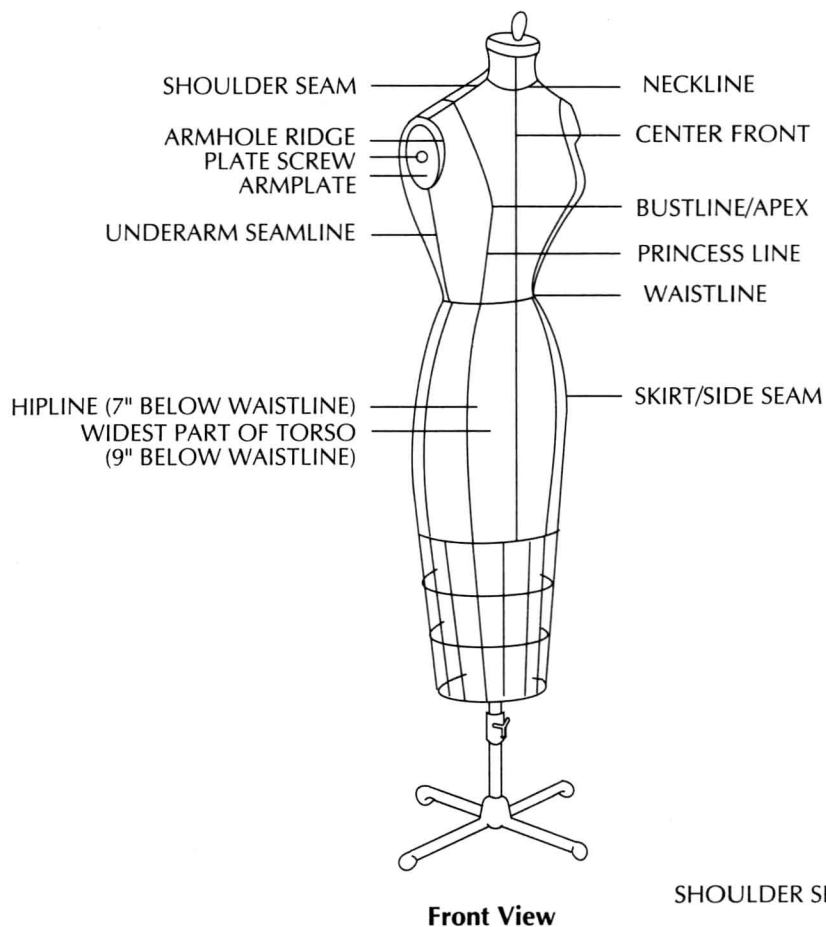
TRACING

A tracing wheel is used to transfer pattern lines onto another sheet or sheets of paper or to opposite side of a folded sheet of paper. Folded draft is opened or sheets are separated and traced lines are penciled in with the proper tools.

TRUEING

Trueing is the process of connecting all points on a pattern and checking for accuracy of measurement, dartlines, seamlines, crossmarks, shape of seamlines, etc.

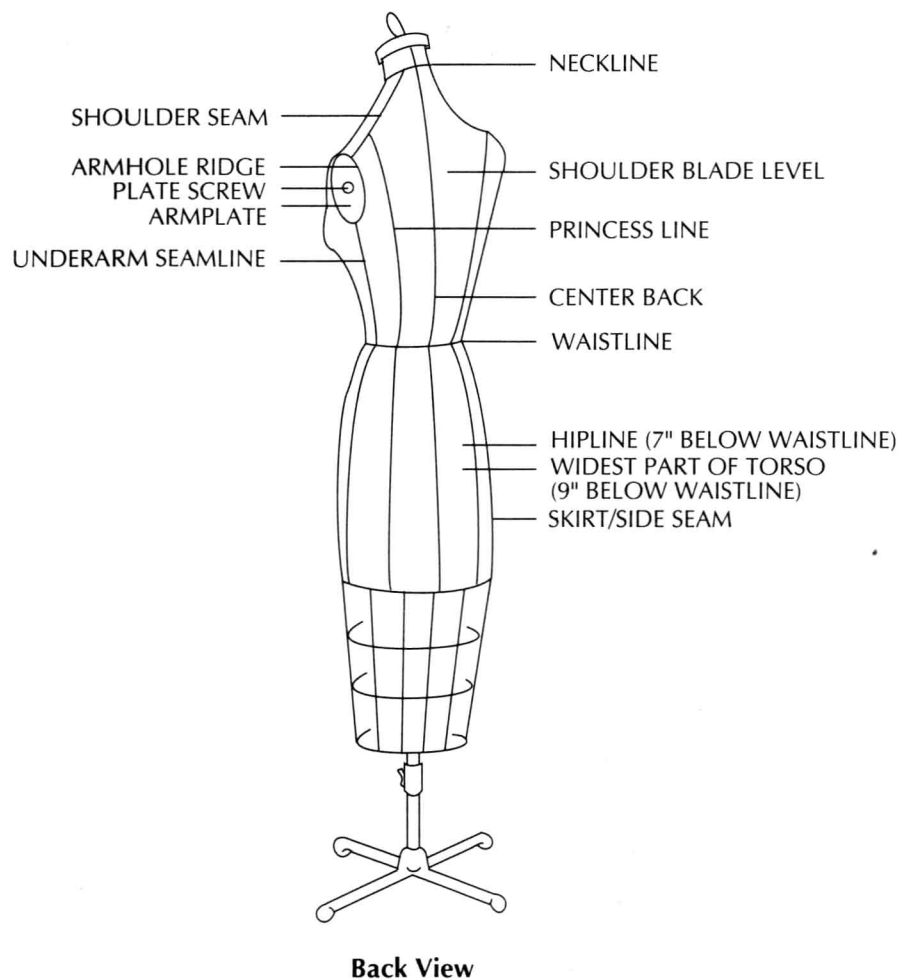
THE MODEL FORM



The model form is the duplication of the human torso covered in heavy linen and padded with cotton, set on a movable, height-adjustable stand. It may also be called figure or dress form.

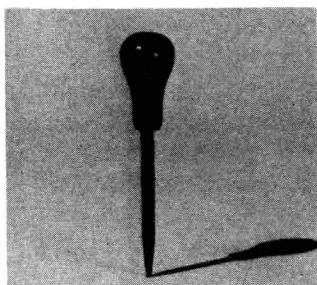
Seamlines for shoulder, side seam, armhole, center front and center back, waistline, neckline and princess line are indicated on the form.

The industrial form is used in the design room where original designs are draped and developed and in the production room where the patternmaker prepares and tests slopers and patterns for volume production.



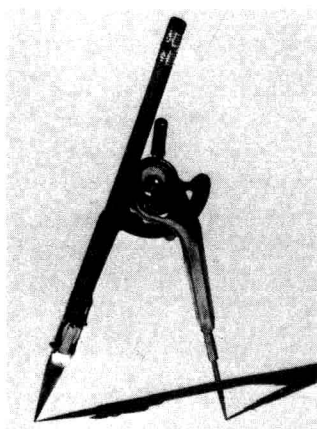
TOOLS & MATERIALS NEEDED TO DEVELOP SLOPERS & PATTERNS

The following list defines the tools and materials needed to develop slopers and patterns discussed in this text. The uses refer specifically to the development of slopers and patterns.



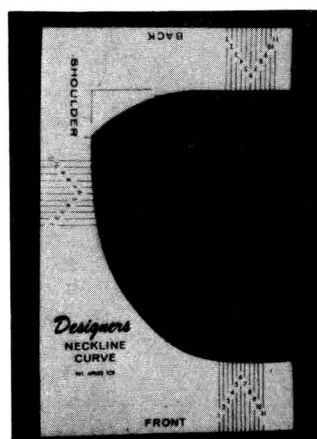
AWL

A pointed tool with a wooden handle. Used to pierce small holes such as to indicate apex.



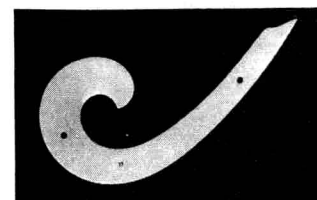
COMPASS

A tool consisting of two rods, one sharply pointed and the other equipped with a drawing end; joined at the top with a hinge to provide an adjustable movement. Compasses are available in various sizes to draw circles of different measurements. Used to make curved or circular lines such as for circular skirts and ruffles.



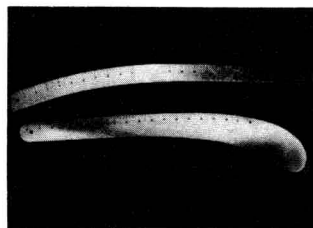
DESIGNER'S NECKLINE CURVE

A clear plastic measuring tool of two curves delineating front and back necklines. Each curve is marked in specific segments corresponding to garment sizes. Used to draft accurately the shape and fit of a neckline.



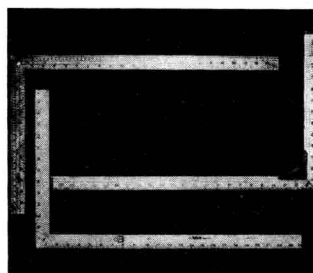
FRENCH CURVE

A plastic tool shaped into a curve at one end. Used to mark armholes and necklines.



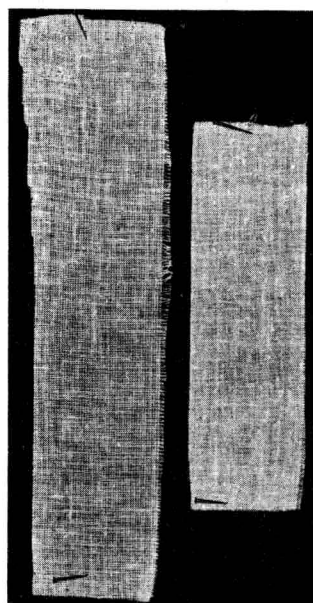
HIP CURVE RULER

A wooden or metal 24-inch (61-cm) ruler that is shaped into a curve at one end. Used to curve hiplines on skirts and pants.



L SQUARE

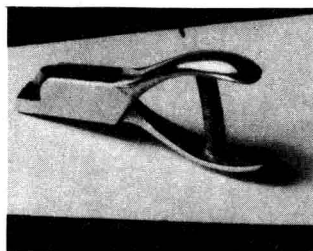
A wooden, metal or plastic ruler with one side longer than the other. Sides form an "L" as the name implies. Used (1) to draft slopers and patterns; (2) to establish length and grainlines on patterns and slopers.



MUSLIN

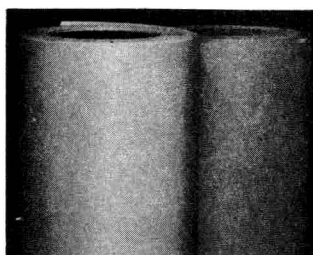
A plain weave fabric made from bleached or unbleached carded yarns in a variety of weights. The following weights are important to the patternmaker:

1. A coarse weave not highly sized—used to test a basic sloper in fabric.
2. A lightweight muslin used to test softly draped garments.
3. A heavyweight, firmly woven muslin—used to test tailored garments such as coats and suits.



NOTCHER

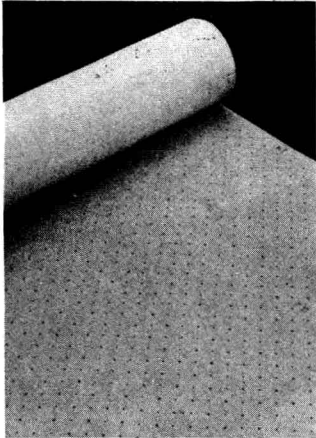
A hand punching tool which produces a $\frac{1}{16}$ " (0.2 cm) nick in paper or Otag. Used to establish notches at the outer edge of seam when pattern is completed.



OAKTAG

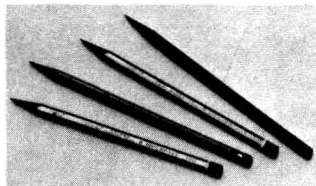
A heavyweight paper (Grade 1x or .008), usually beige in color. Used to make basic slopers.

TOOLS & MATERIALS NEEDED TO DEVELOP SLOPERS & PATTERNS



PATTERNMAKING PAPER

A strong, white paper in a variety of widths and weights, available in rolls. Paper must be soft enough to fold at dartlines or seams and able to remain flat when opened. Do not use tissue paper as it will tear easily. A paper with a grid pattern of dots is also available. This type of patternmaking paper is used for markers in the garment industry.



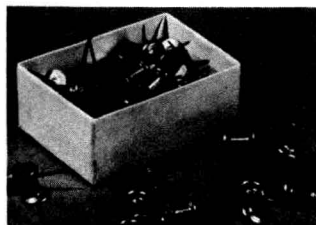
PENCILS

Red, blue and numbers 2 and 3 lead pencils. Used to mark paper or muslin slopers and patterns.



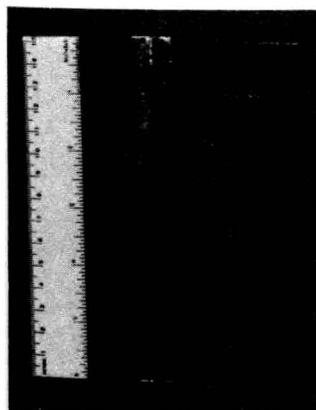
PINS

A size 17 steel satin straight pin. Used to fasten parts and pieces together.



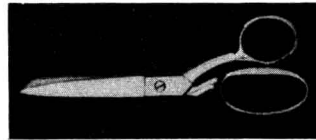
PUSH PINS

A pin approximately $\frac{1}{2}$ " (1.3 cm) long with a plastic or metal shaped head. Used to secure sloper or pattern pieces to paper.



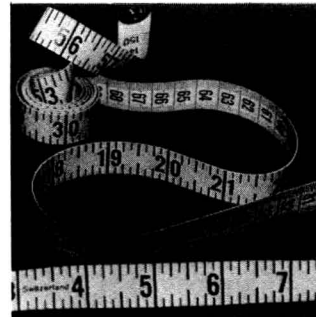
RULER

A clear plastic, metal or wooden straight edge with clearly marked measurements. It is advisable to have 6", 8", 18" (15, 30 and 46 cm) rulers.



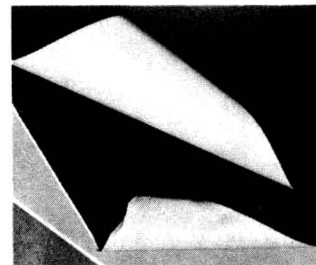
SCISSORS

A cutting instrument at least 9" in length. Since paper will dull scissors, it is preferable to have two pairs, one for cutting paper and one for cutting fabric.



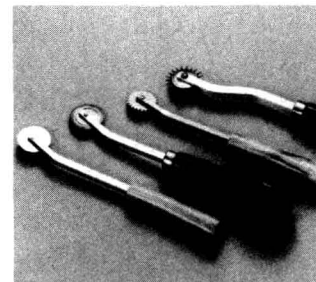
TAPE MEASURE

A narrow, firmly woven 60" tape with metal tips on each end. Measurements should appear on both sides with number 1 at alternate ends. This will facilitate working with tape since it can be picked up at either end.



DRESSMAKER'S TRACING PAPER

Paper coated on one side with wax or chalk. It is carbon paper made for the garment industry. Red and blue colors are used for patternmaking to transfer pattern lines onto muslin. White carbon is used to transfer pattern lines onto garment fabric.



TRACING WHEEL

A small hand tool with a serrated or pointed wheel at one end. Used to transfer (1) side of the pattern to the other and (2) pattern lines to muslin or fabric. There are two types of wheels.

1. Dull point—used on fabric (will not damage fabric).
2. Sharp point—used on paper (will not cut paper).



YARDSTICK

A 36" or 45" (91 or 115 cm) wooden or metal straight edge. Measurements are clearly marked.

PREPARATION OF MUSLIN FOR TESTING OF SLOPERS & PATTERNS

When testing slopers in muslin, it is important to block and press properly the muslin used, so that lengthwise (selvage) and crosswise grains are at right angles to each other.

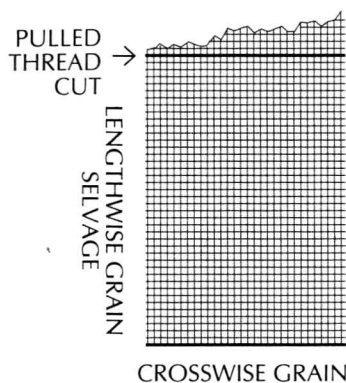


FIGURE 1

If upper edge of muslin is not cut on grain, adjust by tearing or pulling one of the woven threads. Cut on the pulled thread line.

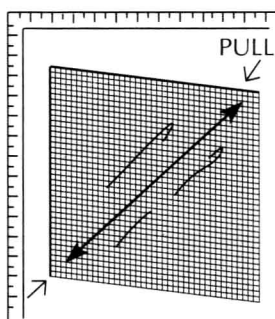


FIGURE 2

On this piece of muslin grains are true on all sides. Muslin must be blocked so that lengthwise and crosswise grains are at *perfect* right angles to each other. Pull muslin in the direction illustrated by arrows.

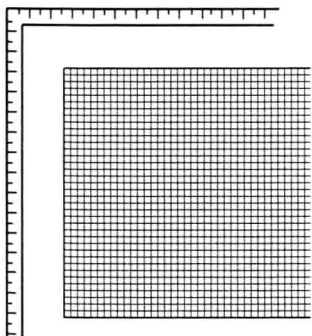


FIGURE 3

Muslin is block and pressed and ready for cutting.

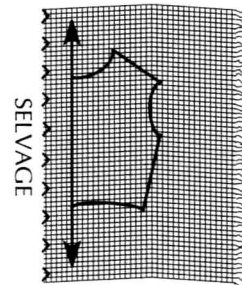


FIGURE 4

Muslin illustrated has tightly woven selvage. Use any of the following methods to adjust:

1. Cut into selvage every $\frac{1}{2}$ " (1.3 cm) to release tension.
2. Cut away selvage and pull muslin upwards.
3. Place sloper or pattern for testing 2" or 3" (5.1 to 7.6 cm) in from selvage.

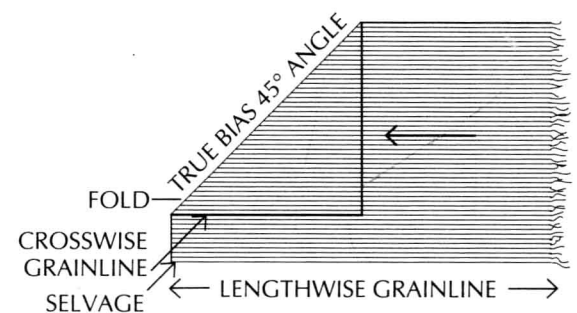


FIGURE 5

To obtain true bias (45° angle) fold muslin matching crosswise to lengthwise grain.

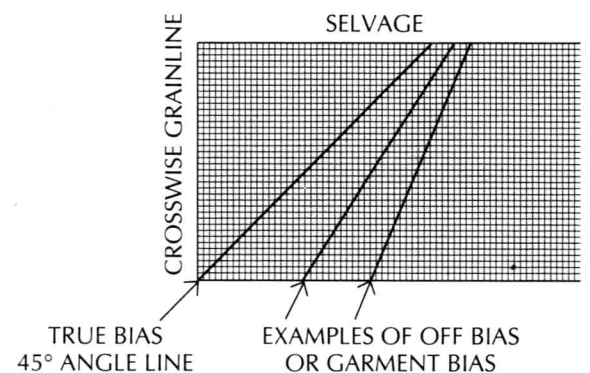
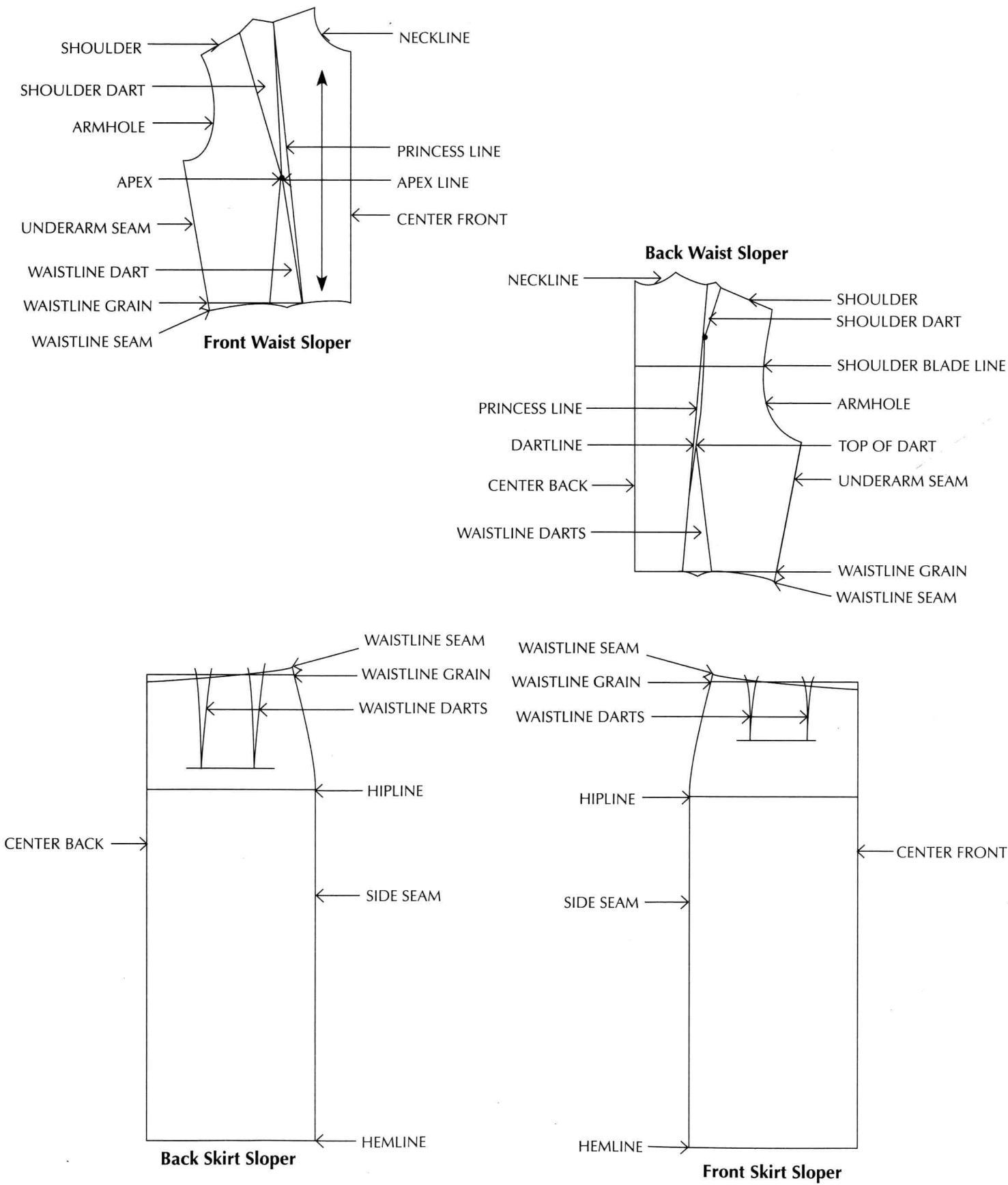


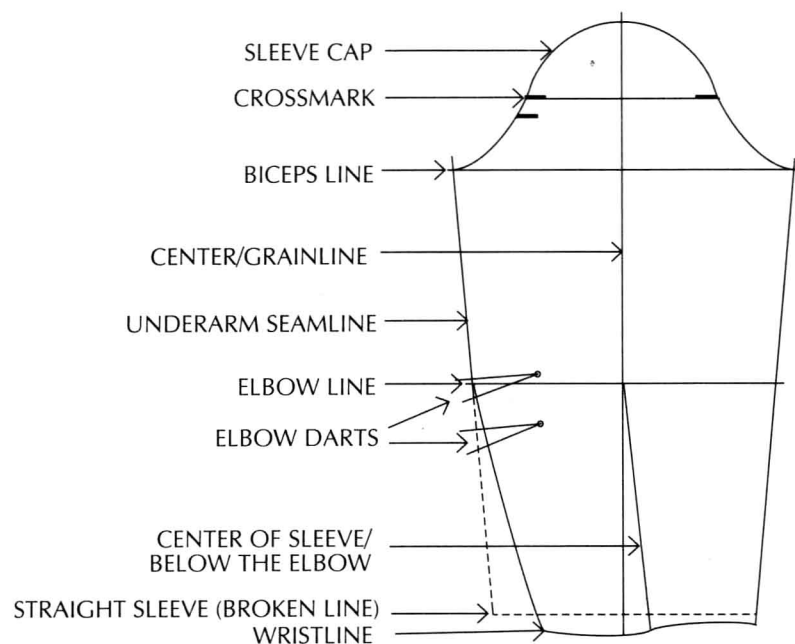
FIGURE 6

Muslin illustrates two lines not on true bias. They are referred to as off bias or garment bias.

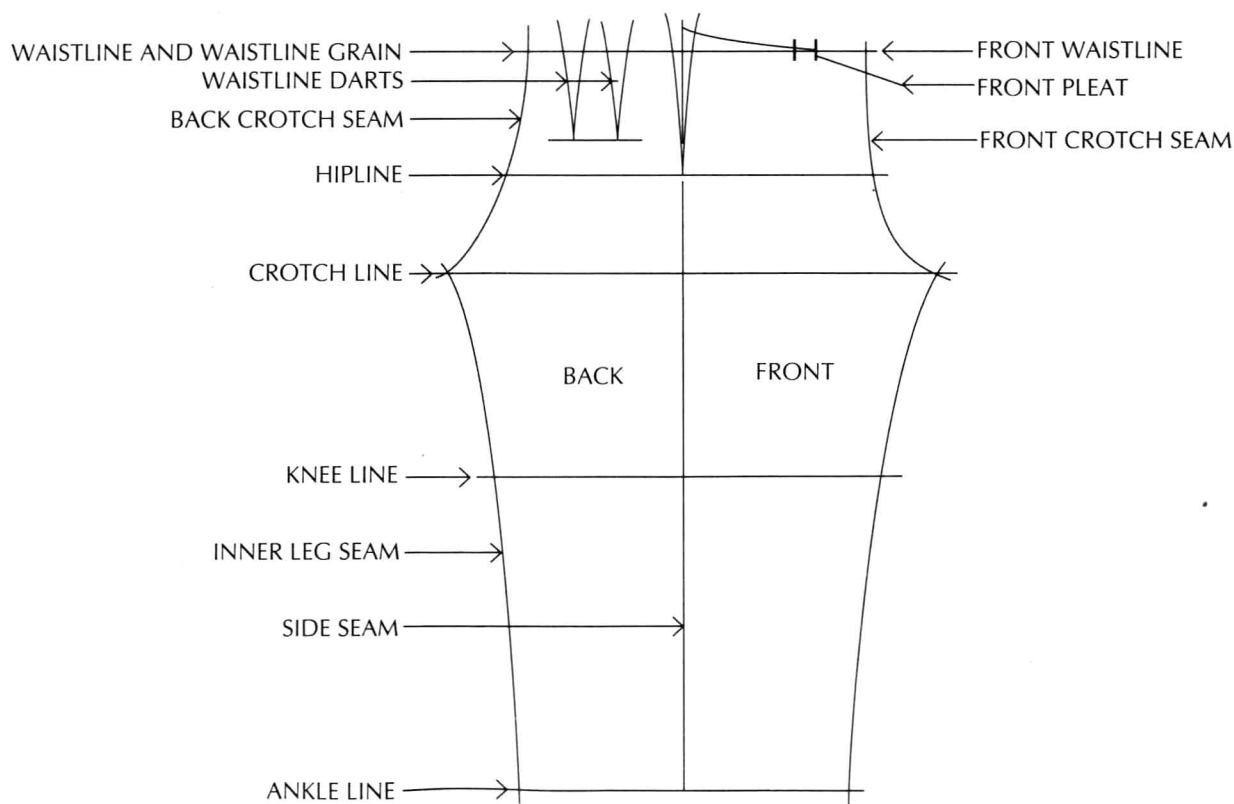
IDENTIFICATION OF SEAMS & DARTS ON BASIC SLOPERS



IDENTIFICATION OF SEAMS & DARTS ON BASIC SLOPERS



Fitted Sleeve Sloper



Front & Back Pants Sloper