

DART MANIPULATION

... AS APPLIED TO DRAPED-TO-FIT SHIRTS

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A dart is a controlled wrinkle—a wrinkle is a potential and uncontrolled dart.

The purpose of this download is not to attempt an overview of dart manipulation in general, but to amplify on and perhaps improve understanding about how I use darts while draping shirts to fit, as demonstrated in my book *Sewing Shirts With a Perfect Fit*, but here without the space limitations that printed material always struggles with.

If you were hoping for more general coverage, I'm happy to refer you to a free, detailed, extensive, and first-class treatment of the entire subject of darts for fitting and design, from the days when dart manipulation was in its heyday: **Practical Dress Design**, by Mabel D. Erwin. It's previewed here, and a link to the entire public-domain book is just below. It's the source of the brilliantly clarifying quote pulled out at left, from page 27 in the original text.

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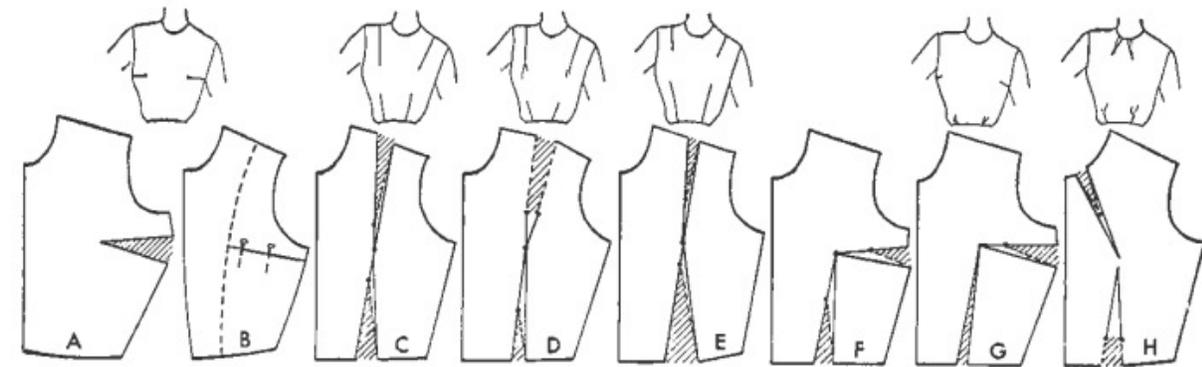


Fig. 34. Dividing one basic dart to create two new ones at different locations.

own idea. In studying a sketch observe such details closely.

6. Make a dot mark to show how far you want each dart to be stitched—the shoulder dart about 1" above the point of the bulge and the waist dart about 2" below.

Draw in these new dressmaker's darts. Fold them in before cutting the seam lines.

In pattern F the basic dart is divided between waist and underarm and both shortened. In G, more of the basic dart is left in the underarm dart and only a slight amount in the waistline. Almost all patterns without a visible waist dart should have this narrow 1/4" to 1/2" amount left to be eased in during dressmaking giving just the right amount of fabric to cover the body rib cage without its being noticed.

Moving Dart in Other Directions

In H (Fig. 34), a rather narrow dart instead of a wide one is left in neckline to avoid a bulky seam that is to be finished with a narrow binding; a very wide dart there could not be stitched to such a short point without pouching at the end. In H, the waist dart is marked to be stitched up

only about 2" leaving a soft ending. This is a dart tuck—watch that it is accurately marked so that it is not stitched up the same width all the way (as a real tuck) or the top may be too tight at the midriff.

The basic dart may be swung into armhole, neck, and center front seams in the same way that it was moved from waist to shoulder or underarm. Shorter and narrower darts should be used in entering armhole, neck, or center front as a rule because they are less bulky and the grain is not changed drastically in order to minimize the dressmaking problem.

Dividing One Dart into a Group of Darts

If one dart in a location seems bulky or uninteresting, it may easily be divided.

Method I

1. Make a paper copy of the single dart, either the basic dart or a dressmaker's dart. Erase the drawing, A (Fig. 35).

2. Fold the triangular wedge into two or three equal parts. Cut apart.

3. Place the parts in symmetrical arrangement

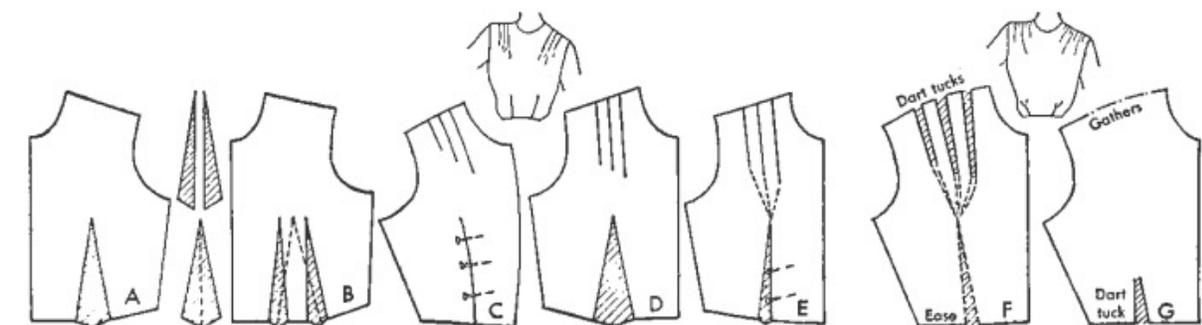


Fig. 35. Dividing one wide dart into groups of three or more narrow darts. B, Method I. C, D, E, F, Method II.

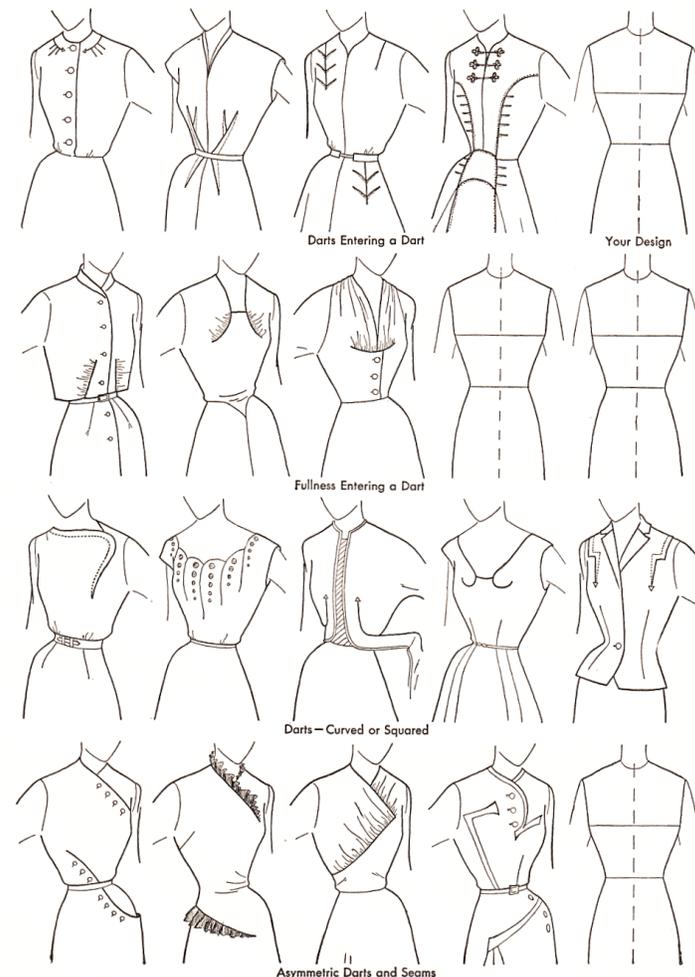
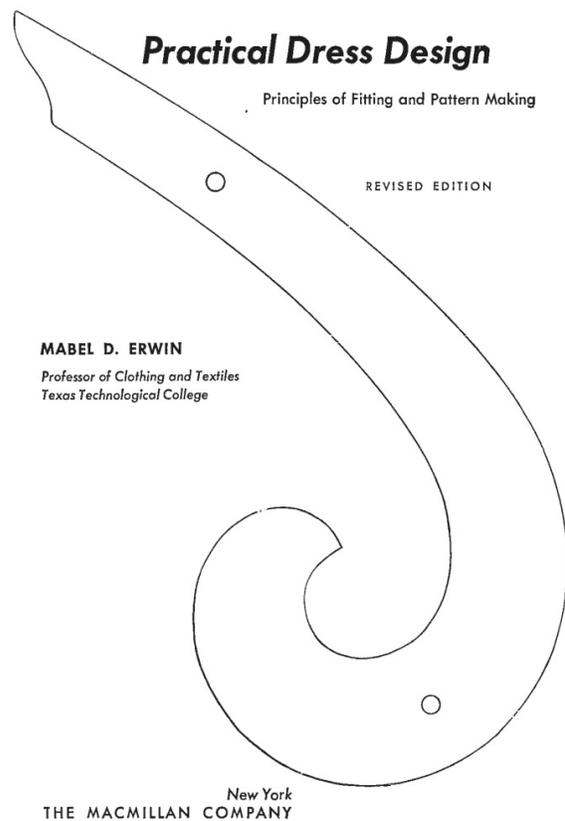


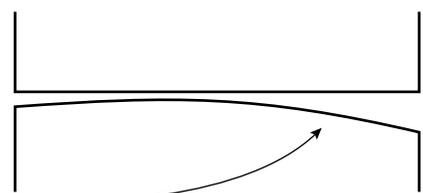
Fig. 51. Vary the number, direction, shape, and combination of darts for originality.



Practical Dress Design

My use of the term "dart", here and in my book, is both more general and more limited than as used commonly in garment fitting and design texts such as Mabel's. More general in that I use it to include 3 somewhat different but related ways **to alter the outline-shape of pattern pieces by folding out excess fabric INSIDE the outlines** (that's MY definition), and more limited in that I'm only considering the application of these methods to the fitting and design of shirts, not to every sort of garment. That's not to imply that they can't be used on any sort of garment, just that I'm not going to explore other garment types here.

These darts can be easily converted to seams, and existing seams can also absorb dart shaping, as in the striped example at right, in which the side wrinkles from a curved upper back and sloping shoulders are simply lifted up and pinched into a point-to-edge dart, right where a seam already exists, which absorbs it simply by becoming more curved, by the dart-angle amount.



A

To have the most flexibility when exploring dart placement and/or movement while draping, it's best to work with raw yardage, completely un-cut with any specific shapes, like the rectangle I'm using above.

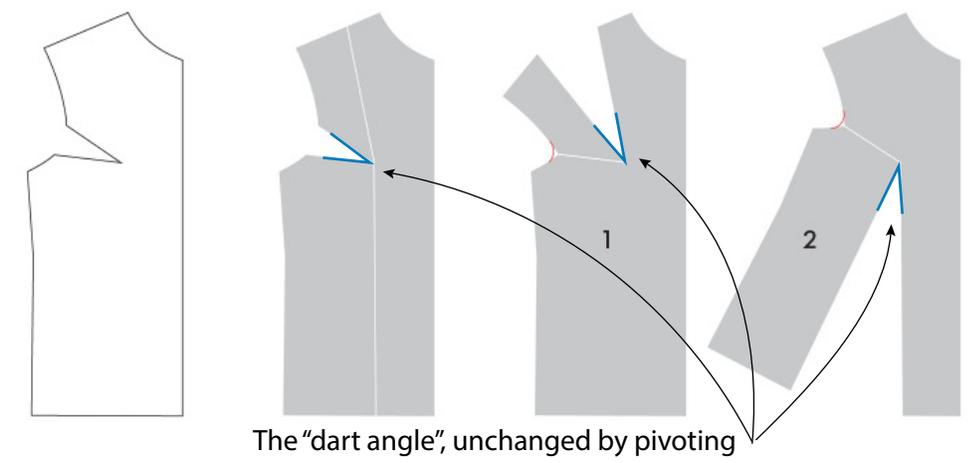
Working with extra-wide seam allowances as I've cut in the striped example's armholes and sides at left and the armholes and yoke edge on the green fronts below, offers similar flexibility, but only within the area of the original excess, not everywhere.



MY 3 "DART" TYPES

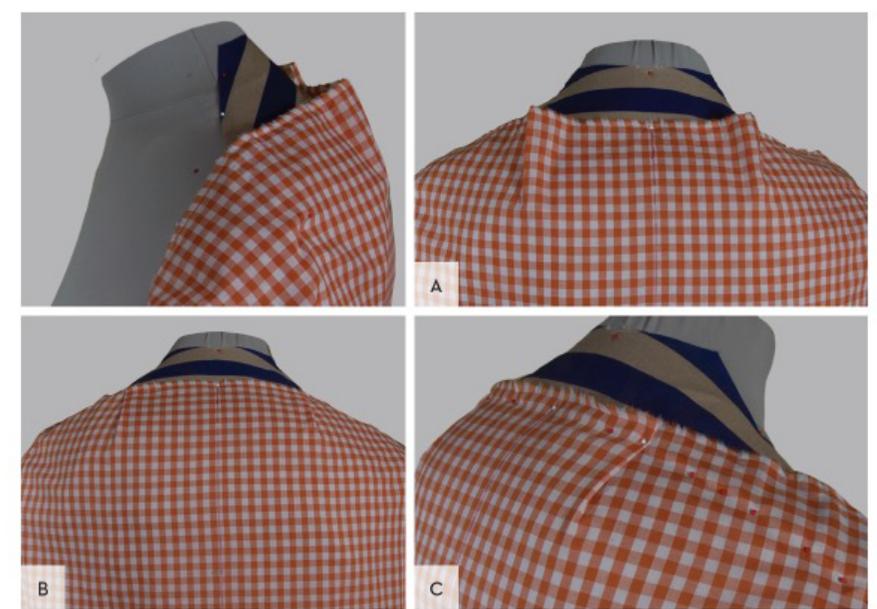
1. POINT TO EDGE:

These are the most typical sort of darts in use and the ones most easily manipulated. They're the ones that often simply form themselves, right where needed, already precisely shaped, and pointing directly at the body-shape that's causing them to exist, as in the armhole example, and in the 4 orange-gingham examples below. You can just pinch out and mark these dart-wrinkles right where they are, and as easily rotate them around their points to any other edge once captured in a paper pattern.



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The vertical darts from the hem up here, didn't form themselves, but once you take the initiative, they're exactly the same sort of dart as the ones above them, but here removing excess below the body-shape they point to, while the little top darts only treat the excess above. Same goes for the armhole bust dart in the first image; it's only responding to the excess above the bust, while below it, the fabric is still falling unshaped, but ready to be further reduced if desired, as in the example at far top right in which excess has been removed both above and below the bust. So, notice in the "dart angle" diagram that no matter where it's pivoted (or if it was to get divided), the dart shape is still only removing the same above-bust-only excess. Another dart would need to be pinched out below the bust if that excess needed removing as well. And these two darts together could then be pivoted, further divided or joined together in all sorts of ways while removing the same excess, given the same total dart angle.



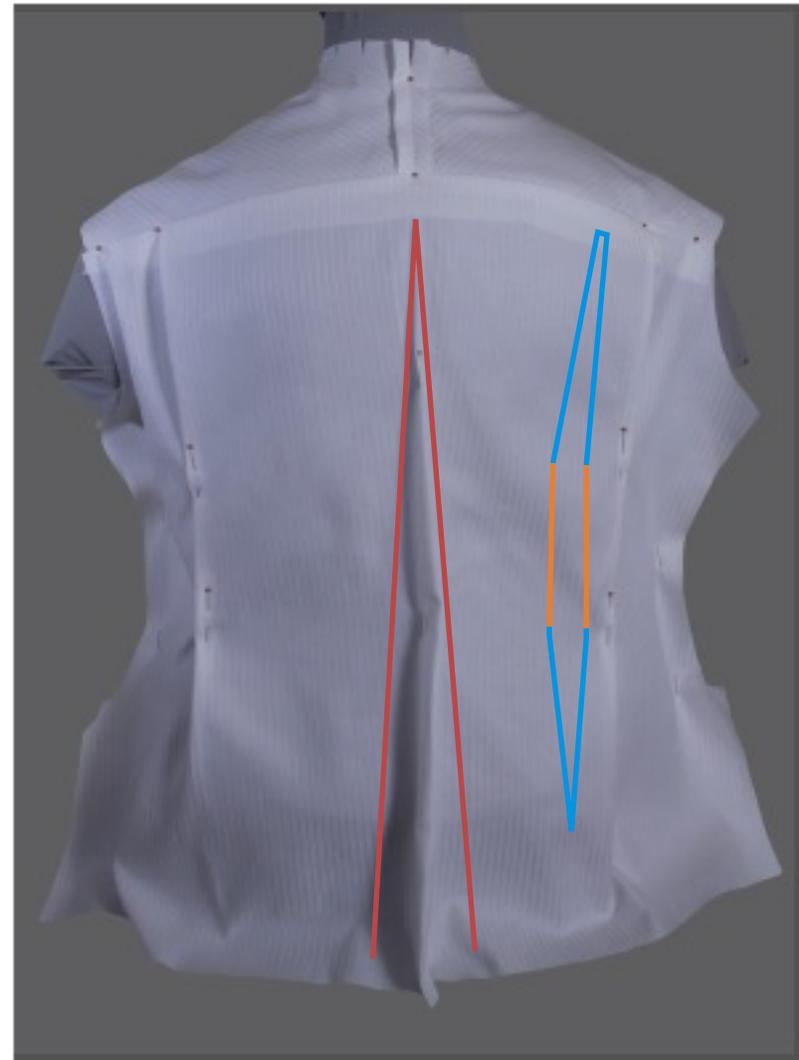
2. POINT TO MIDDLE:

The next most typical dart type is the inverse of the point-to-edge type, in that the dart angle points inward instead of outward towards the edge. It's used when excess is found not on the edges but somewhere inside the shape involved, and it tapers away either towards the edges or not, as in the example below in which the excess is at the back waist (orange lines over the white garment), tapering upwards to the edge at the yoke but downward only to where the hip width maxes out (blue lines).

The images below show how I've developed the point-to-middle darts and the related seams on Project 2 in two stages with as many muslins as I could.

This type can certainly be converted to seams, as I've done in the tight-fitting chapter and Project 4, but while it's presumably possible to pivot them, too, that's hardly common, and certainly less clear how to do. But either or both the points and the area of excess could be repositioned sideways to various extents to create more graceful or interesting lines...? You can see below how I've allowed the tapering portions of these darts to remain unstitched, giving these areas extra flexibility during wear.

As you'll see next, for me the more important choice is whether to leave such darts in place as stitched features, or to explore converting their excess-reduction entirely or partially into seam-shape changes.



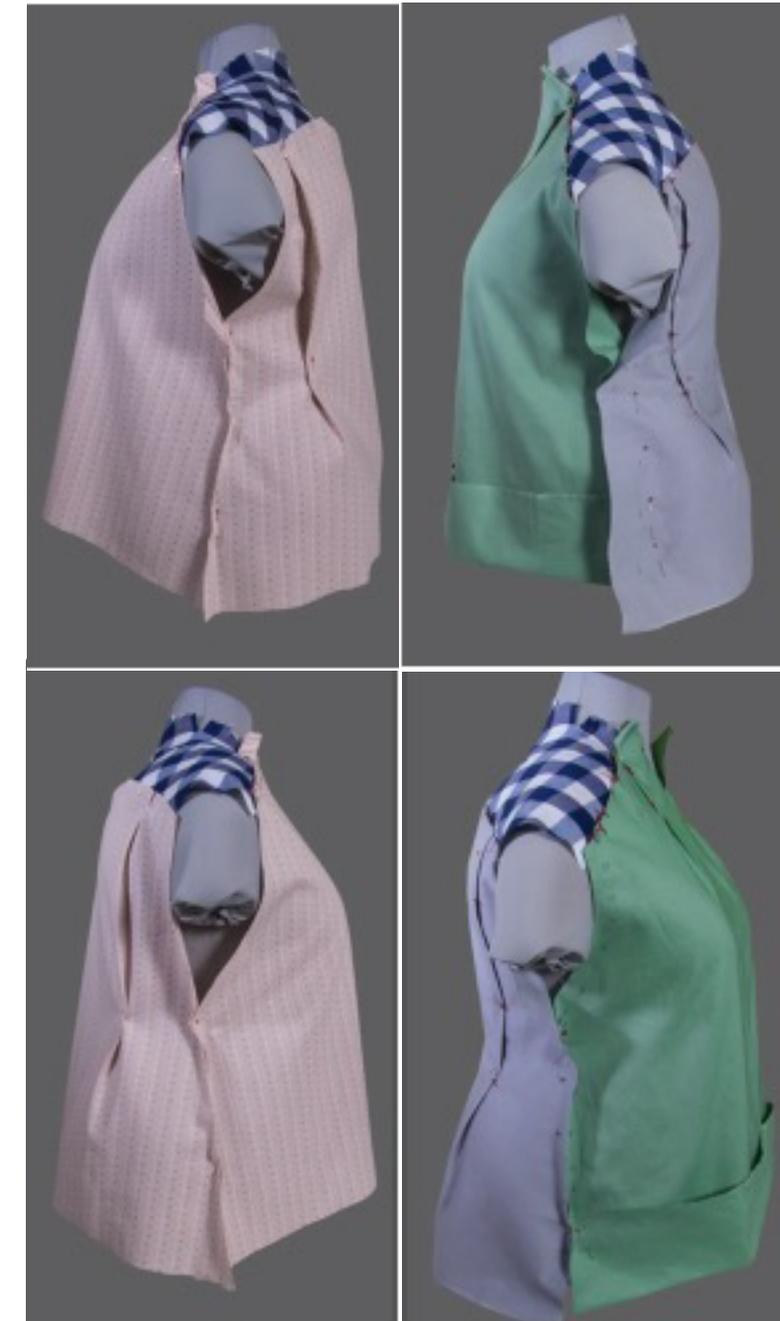
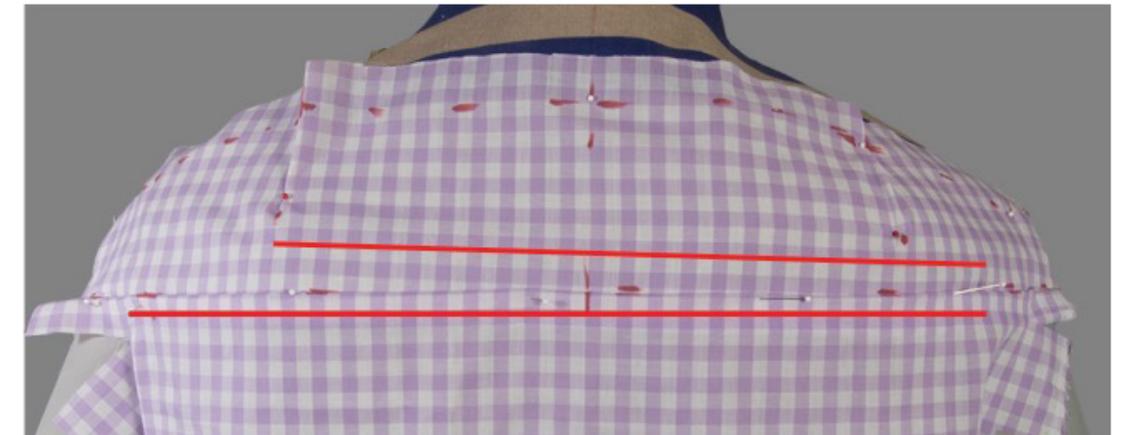
3. EDGE TO EDGE:

This next type is arguably more a sort of tuck than a dart, but as it includes both tapering and not-tapering excess removals, and can function pretty much the same as the more obviously dart-like types discussed already, as I use it anyway, I'm sticking with calling it a "dart", too.

This type allows the removal of excess evenly or un-evenly across the entire width or length of a pattern piece, as I've done at CB on the white garment at left, horizontally across the back of both gingham below, and along the sides of the blue one on the left.

Any not-tapering fold-out across a piece is simply an overall length or width change in a specific spot (thus can't be converted to a hem-length change), and needs only to be an alteration of the final pattern shape, not a stitched detail.

Tapering changes can be treated either way, as circumstances or preferences dictate. I liked the look of the CB dart/tuck on Project 2, so I left it in, while I liked how the side reductions on the muslin below (the "nutshell" draping demo from pages 15-17) so easily disappeared when traced as pinned, at right below, and shown in more detail next...

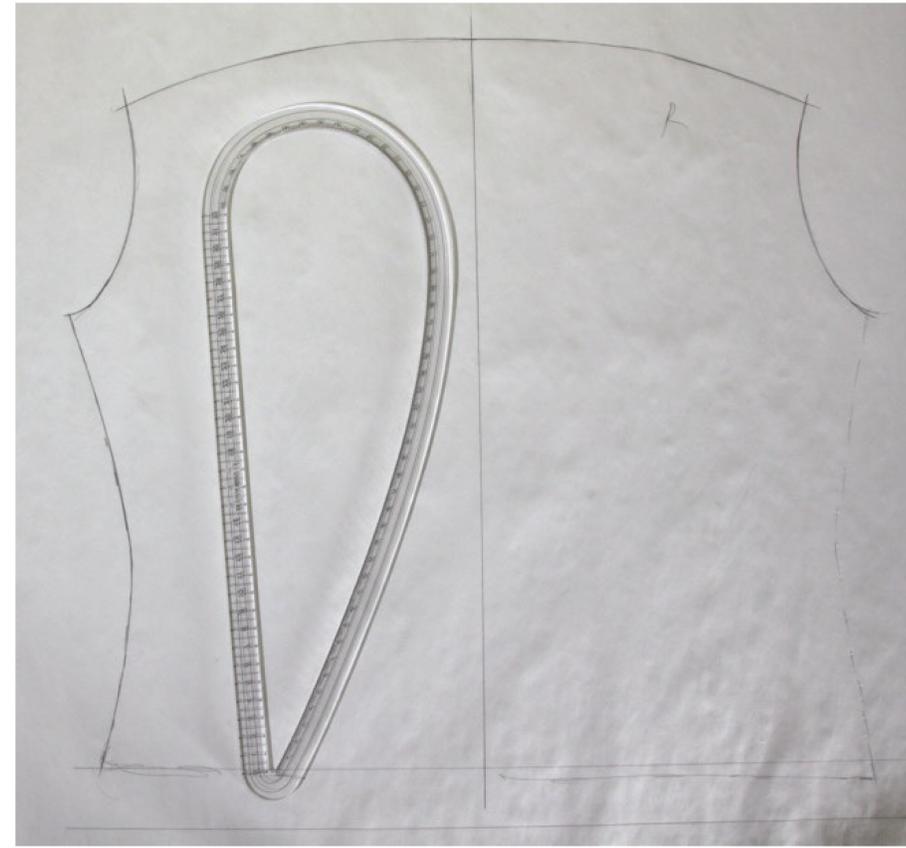


These images are additional examples of the process I introduce on page 67, and have repeated the images from on the next page here.

The top row shows the transformation of the pinned “nutshell” back into a traced paper pattern and then a dart-free back. If you flip back to the previous page, you’ll see that both the pinned and the traced version fit the same way, with both needing a little extra width to fall more freely over the form’s hips, but equally smooth from the shoulders mid-way down.

The bottom row shows my first test of this idea, using an existing shirt on my athletic-male form, and pinning the back to at least reduce the ease across it at all levels, despite the obvious shoulder-slope problems which this method doesn’t help with, but which we’ve already got a better solution for, when draping the fall of the entire back from the yoke, the topic of the Loose Fitting chapter. You can see at far right how well that’s worked on the muslin cut from the tracing being done in the middle image, to which I provided generous allowances at the back-to-yoke seam edge.

Note that as I knew I’d be tracing all the pinned changes to the back here, I didn’t waste any time making my pinned lines symmetrical or especially even, just pinned away, knowing it was the resulting edge changes I was interested in capturing, not the pinning. And for the testing of these, I’d also be cutting wide side-seam allowances to perfect the seam lines there.





And here's the images from the tightening-up-the form-cover process on page 86, which should help clarify exactly how freely I darted out excess exactly where I found it, again not caring about the initial pin placement, and whether it ended at a seam or didn't, but about the ultimate traced results, which you can see again below.



The process I call Full-Garment Conversion, on page 70, involves mostly edge to edge pinning, but no time spend worrying over what type of darts I was or wasn't using. It's simply yet another ease removal process aiming at the traced results as a better starting point for further draping than an altered pattern or even a basic rectangular drape. Here's a chance to take a slightly closer look.

