



Jump of Icarus

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Contextual Review and Concept

The myth of Icarus from Greek mythology, who is said to have flown so high, so close to the sun, that his wax wings melted and he plunged to his death in the Aegean Sea, has been an inspiration for many arts and sciences, leading to explorations into problem solving strategies. In the fashion world, one of the problems that designers are constantly challenged with solving is that of creating clothing as “envelopes for moving bodies” (Chandes, Sato, & Meier, 1999, p. 32). This design submission builds upon my previous scholarship, of creating garments that respond and support the wearer’s body, while maintaining sustainable design practices via mixed construction techniques and materials. Lindqvist’s (2015) kinetic garment construction theory served as the initiating platform for this project, an exciting draping methodology to create one-piece pattern garments that allow for body movement, but also by using excessive amount of fabric and resulting in high fabric wastage. Conceptual references to Icarus as a metaphor for engineered boundless movement guided the design process, resulting into an adaptation of Lindqvist’s (2015) published jumpsuit pattern, with added pattern versatility, garment aesthetics and near zero waste design.

Process and Techniques

Analysis of Lindqvist’s (2015) one-piece jumpsuit pattern, published in an unspecified scale, revealed the need to enlarge the pattern to a half scale dress form, size missy 8, and construct a muslin to understand the seam assembly (p. 230). This process highlighted the imprecision of the intricate curved seaming, as well as the necessity to further drape the given pattern and adjust for a specific body shape in motion. The enlarged to size missy 8 pattern was cut in cotton/spandex interlock knit fabric, and wear tested for comfort and movement ease, shifting the seams to fit a model’s own knees, shoulders and elbow bends. Ballet and dance type moves were performed to ensure garment comfort and shape. The assembly of the very long seams was challenging, due to the circling cuts across various grain lines, as well as the lost precision of the notches when marked in the lightweight knit fabric. Moreover, the aesthetics of the look were disappointing, the garment looking just functional, lacking femininity and creative excitement. The fabric consumption for the one-piece pattern at this stage was very high, close to 5 ½ yards of 48” wide fabric, with excessive fabric waste.

West (2016) found that combining two-dimensional and tri-dimensional patternmaking methods can lead to creative design solutions, while still maintaining the wearer’s body as a central focus. Therefore, two horizontal seams were added to the one-piece pattern, at the shoulder level and waist level, to allow optimal nesting of the new pattern pieces and reduce fabric waste. An inverted pleat was also added at the back waist level. The new fabric consumption became 2 ¼ yards. The seam construction needed to be changed from edges just serged together to something that will further reduce the waste space between the pattern pieces.

At this point in the process, material choices and aesthetics were explored. A cool neutral color scheme such as gray and black was chosen to offer versatility of the final garment, with possible applications in dancewear and athleisure markets. A 48” wide reversible rayon/polyester/spandex interlock with narrow

feeding gray and black stripes seemed the perfect choice for the material, providing a soft touch, stabilized drape and subtle metallic sheen, appropriate for the long seams and sharp angles of the patterns. Considering zero waste strategies, the width of seam allowances was decided to be varied, allowing the pattern pieces to fit as close as possible, almost like a puzzle (Rissanen & McQuillan, 2016). The reversibility of the fabric allowed for the seaming with wide exposed and raw cut edges, and also provided the shifting color patterns that enhanced the visual playfulness to the piece. Some horizontal seams around the crotch and waist were left just serged, to avoid increasing material consumption. To ensure cohesive volume of the exposed seams, an extension to the raw edges was needed in some areas. A strip of black fine net fabric, inspired by the ballet skirts, was added to all exposed seam allowances, creating an aura around the silhouette and suggesting vibrating motion. The seam line between the net and the interlock fabric was concealed with a heavy eyelash black and silvery novelty yarn, a crafted touch that added seam strength and textural interest.

In order to maximize comfort but avoid an athletic look, an exaggerated long collar around the snap closed front placket was designed, caressing the neck like a scarf. Shifting construction techniques to best fit aesthetics and the minimal waste aim, this part of the garment was machine knitted using a metallic rope rayon yarn, combined with a black crochet and chenille edge tape yarn. Short rows technique allowed for added voluminous ruffles. Knitting by hand or using technology is a versatile and sustainable design practice that I research and incorporate in all of my creative scholarship (Rissanen & McQuillan, 2016).

Significance

The sustainability considerations to minimize pre-consumer waste were essential through the design process of this piece. Moreover, designing garments that fit moving bodies has to be considered along with any material reduction strategies (West, 2016). The resulting silhouette of this patternmaking exploration has a cohesive, modern functional design look. The added weight on the seams feels like a hug on the body, a feature that expands the wearing experience outside the physical comfort, adding emotional benefits. Although the assembly of the piece was experimental, the seam weight placement observation opens up future exploration opportunities. Moreover, folding back the exposed seam allowances and draping them into surface design could represent another creative patternmaking study of zero waste design.

References

- Chandes, H., Sato, K., & Meier, R. (1999). *Issey Miyake: Making things*. Germany: Steidl, Göttingen.
- Lindqvist, R. (2015). *Kinetic garment construction: Remarks on the foundations of pattern cutting* (Vol. 13). Rickard Lindqvist.
- Rissanen, T., & McQuillan, H. (2016). *Zero waste fashion design* (Vol. 57). Bloomsbury Publishing.
- West, S. (2016). *Escapology: Transcending Boundaries of Flat Patternmaking and Design Practice*. Retrieved from <http://hdl.handle.net/10292/10119>

