



Chute

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Measurements: Bust: 32"-38", Waist: open, Hips: open

Chute is a bright pink gown with bustle and train designed from a vintage military surplus recovery parachute. The design offers insights into sustainable, slow design, as well as the roles of inspiration and materials in the design process. The final design was given the pun-derived name "Chute" because while being photographed, it was discovered the gown still had characteristics of the original parachute ('chute), as the train unexpectedly and wildly billowed into the air behind the model when caught by the wind (oh, shoot!).

The inspiration for *Chute* began with research about parachutes in flight and da Vinci's sketches of parachutes (1483-85; Navoini and Buzzi 2012), which led to the exploration of the construction and geometry of parachutes in relationship to the human body. During her research, Therèsa M. Winge reviewed Norma Kamali's work with parachutes (circa. 1980s) as cut-and-sewn material for fashion designs. In the end, Winge decided to keep the parachute intact instead of dissecting or reducing it into more workable pieces.

Accordingly, Winge's purpose was to create a sustainable design from a complete parachute. She secured a 28' diameter British military surplus parachute (date-stamped May 19, 1967) and embraced a sustainable, slow design process (Shephard and Pookulangara 2014), which focused on zero waste techniques (Rissanen 2008) for the final construction. She was pleasantly surprised to discover a bright pink parachute (instead of the expected military green color) inside the canvas pack. Winge sketched and drafted plans from the geometry of the triangles used for the gores of the parachute. As a result, there were issues working with such a large expanse of circular material (615.4 square feet of cloth), with its numerous gores, thick felled seams, and tethers, as well as a the center hole/vent. Solutions to these design issues were discovered through slow design process of experimentation trials and detailed documentation of draping and handsewing specifics. In the end, the entire parachute was used for the final design, save for several yard lengths of nylon tethers from the outer edges.

The front of the gown gathers along 16 seamlines, where nylon tethers run through the felled seam channels (see Image A). This creates a dynamic *ruche* effect, allowing for variation in front hem length and movement throughout the gown (see Image C). The décolletage of the gown is shaped using macramé (knotting) techniques from the nylon tethers anchored on the outer edges of the parachute and reattaching them to the tethers within seams to the center. The back of the gown includes additional macramé to secure the nylon tethers to both the interior opening (back waist) and hem of the parachute. A bustle was fashioned from the folds of fabric by pulling up the outer hem of the parachute material into the smaller circumference of back waist (see Images B and D). And, by securing back 16 seam tethers to the anchored ends resulted in a large fabric fold creating an expansive 7' long train (see Image B).

Returning to the inspiration for Chute, the strong lines created with the macramé and bustle folds most directly reflect da Vinci's sketches of parachutes. Winge found throughout the gown is visual and tactile evidence of the geometric, nylon construction of the parachute. The gown in motion, however, suggests construction of high quality and flexible fashion materials. In addition, Chute is an example of upcycling a discarded surplus parachute into a fashionable gown, by using zero waste and slow design methods in unison.

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