Hunter Safety Re-Design
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Introduction

Motivation:
- Each year 40%-60% of hunting related injuries are due to falls.
- 82% of hunters injured or killed were not using a Fall Restraint System

Mission/Objective:
- To develop a new system or improve upon an existing one in an effort to save more lives by making the product more appealing to consumers and increase the overall safety.

Criteria /Constraints and History

History
Other Harnesses:
- Tree stand makers required by law to include harnesses with tree stands
- Harness production not a top priority for tree stand manufacturers
- Typical harnesses do not protect over 80% of falls

HSS Harnesses:
- Hunter Safety Systems harnesses are easier to use and more comfortable to wear
- Created the lifeline system to protect hunters from all falls

Criteria
- Making the process SAFER
  - Setting up the lifeline system leaves hunter open to falls
  - Rope which is LONGER-LASTING
  - Lifeline system left in tree for entire hunting season
- A more COMFORTABLE harness
  - Customer complaints about constricting leg straps
  - SCENT - and SOUND -proof
  - Hunter must be hidden from animals by scent and sound
- More TECHNOLOGICALLY ADVANCED
  - HSS has to maintain spot at top of the market
  - A system which is 'COOL' to use

Evolution of Harness Prototype

Force Diagrams

Materials

Materials Used in Prototype
- Nylon webbing
- 60/40 cotton polyester camouflage
- Ripstop fabric used to line the pockets
- Mesh camouflage for outer part of vest
- 210 Tex bonded nylon thread
- 1" wide elastic
- Quick release buckles
- High density closed cell foam

Proposed Materials for Future Harnesses (not in current use)
- Microsuede (Glen Raven) with Cordura (DuPont) fabric used for vest material
- Carbon activated scent proof fabric (Scent-Lok) to mask the scent of the hunter
- Medium weight weather proof fabric (similar to Gore-TEX)
- Silicone gripping pad material for shoulder straps (3M)
- UV blocking camouflage (UV-Killer)

Comparison To Existing Technology

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References