RainDrop

Mock Up Review

October 18, 2012

Vision

- Make biking safe, dry, and happy
- Effective bike rain shield
- Collapsible & convenient

Market

- End users:
  - Urban bike commuters
  - Regular bikers
- Estimated Price: $150
- Customer Advocates:
  - NEMO Equipment: High-performance tents
  - Roof For Two: Weather protection accessory for motorcycle riders

Customer Feedback

- Not concerned as much about lower body getting wet
- Concerns: Visibility, size, and coverage
- Online interest

17 likes

stephenepierce CAN YOU EVEN BELIEVE THIS??!?! #bikeshopbingo

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Product Contract

Customer Need	Attribute	Engineering Specifications
Rain protection	Dry volume in a certain wind	Coverage ≥ Rain jacket
Speed	Speed reduced from 16 MPH with same biker power	New speed > 10.4 MPH
Compact and moveable	Collapsed volume, shape, and weight	Fits in bike basket volume: 9.3 by 16.1 by 13.6 inches; Under 10 pounds
Situational Awareness	Visibility/Sound	Noise ≤ Umbrella Vision ~ Goggles
Quick deployment	Time	< 2 minutes

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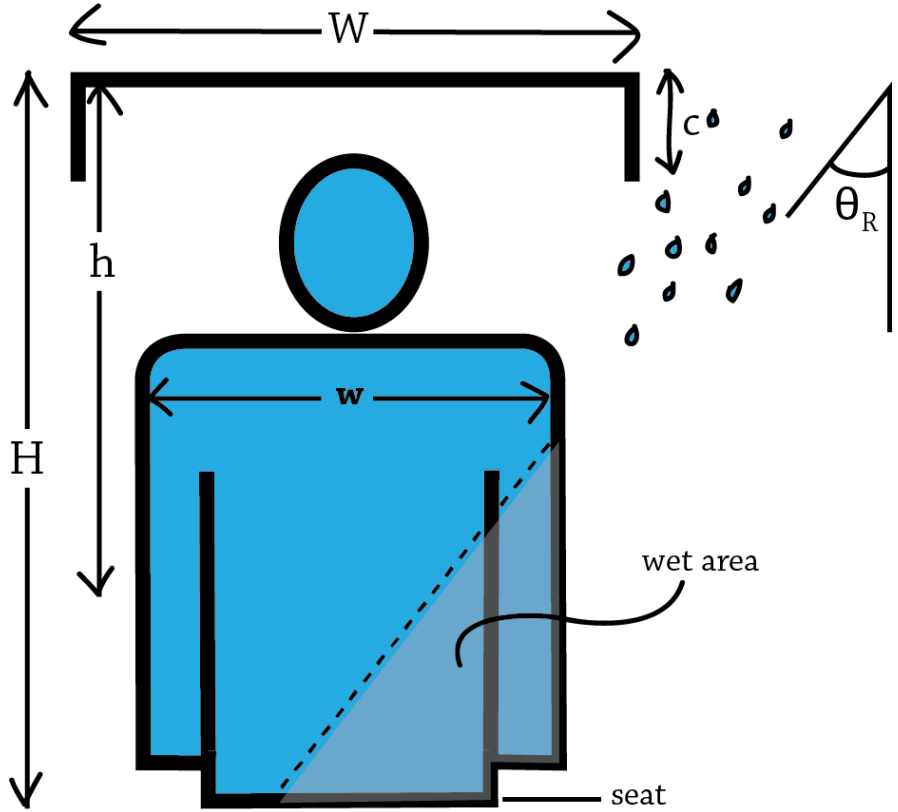
Risk #1: Coverage & Cross-Wind

- Modeled wind & rain
- Considerations:
  - Front panel height & width (H & W)
  - Side panel height (c)
  - Desired dry area height & width (h & w)
  - Angle of rain (θ_R)
  - Forward, rain, & side wind speeds



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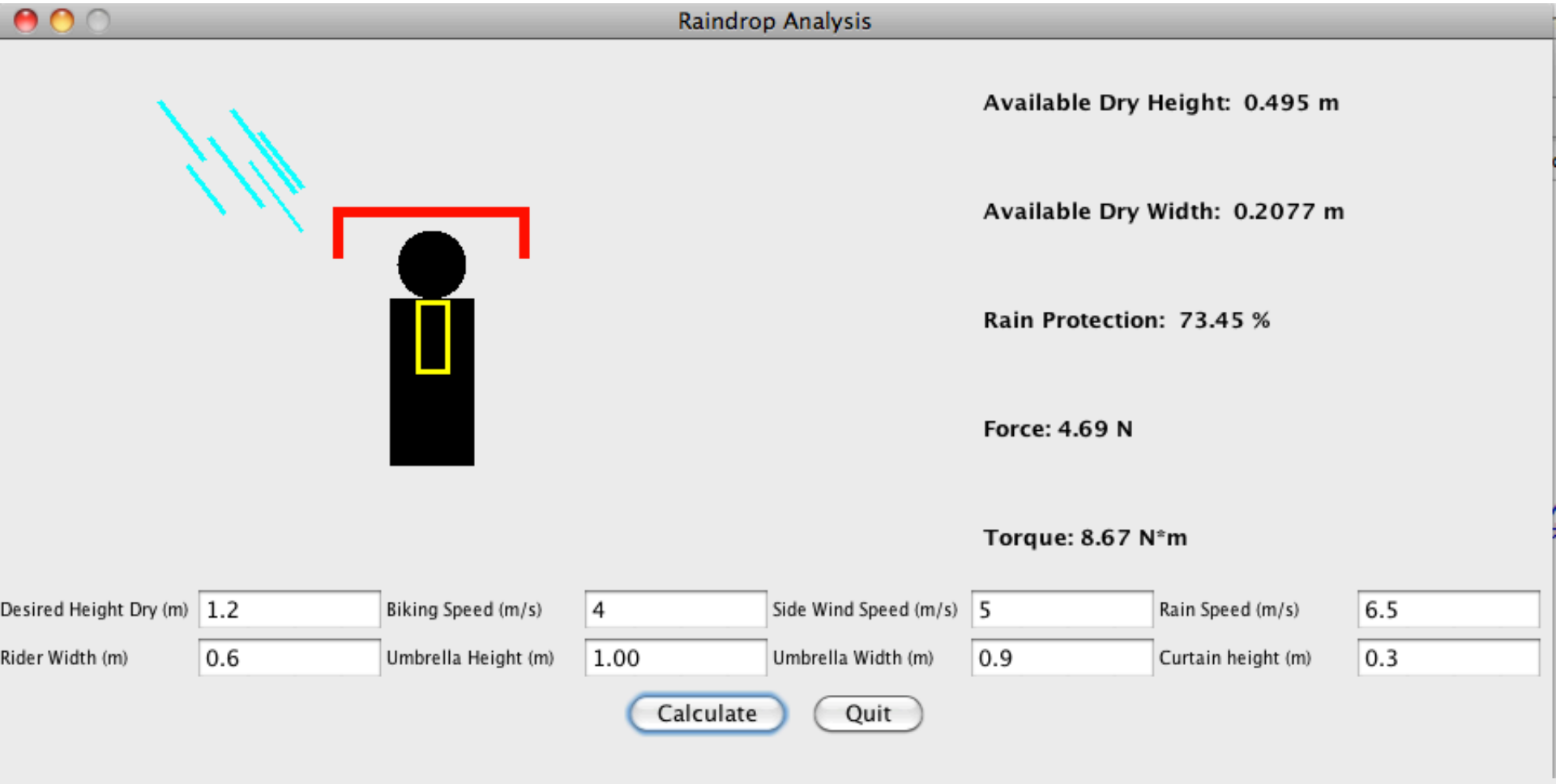
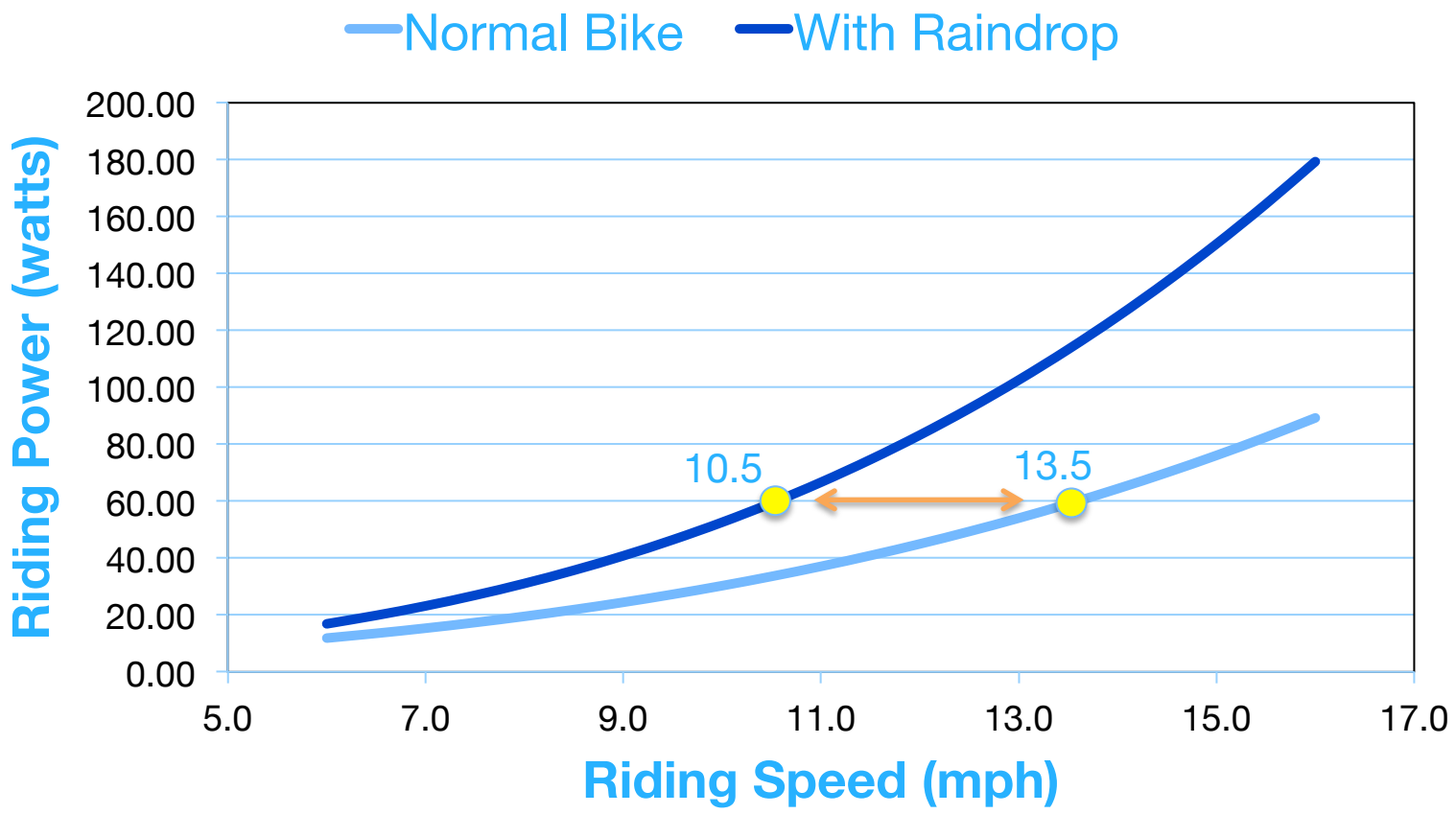


Risk #2: Speed Reduction



Risk #3: Collapsibility

Next Steps

1. Look into other mechanisms for collapsibility
2. Design & integrate storage unit
3. Refine shape
4. Improve attachment to bike
5. Find suitable materials