Dryland Hockey Sled

Sled Hockey is an adaptive sport. On the sled, the player is supported by two blades and a skag. Players lean with their body weight to turn.

**Design Requirements**
- Turning radius:
  - High speed - 15 ft
  - Low speed - 3 ft
- Similarities to on-ice (Qualitative ratings):
  - Feel: >6/10
  - Ease of turn initiation: >6/10
- Able to withstand 300 lb. load
- Durability: 2 year lifespan
- Adjustability: Various adjustment times

**Objective**
- Design and build a blade replacement for dry land practice
- In person testing for comparisons between normal and modified hockey sled
- Deliver working prototype to Challenger: Trevor Hunter

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal interference with motion</td>
<td>3&quot; Diameter neoprene medical grade caster wheel (narrow profile)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allows comparable maneuverability to high level on-ice gameplay</td>
<td>Longboard-inspired, small wheelbase turning apparatus that attaches directly to sled frame</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enables friction-based propulsion with relative ease</td>
<td>Fabricated interface between stick and longboard road paddle</td>
</tr>
</tbody>
</table>

**Background**

**Skag**

**Blade Replacement**

**Stick Attachment**

**Testing**
- Multiple rounds of testing with professional Sled Hockey Athletes
- Ensuring all design requirements met
- Testing adjustments to optimize feel

**Conclusion**
- Overwhelmingly positive feedback from professional testers “...twenty times better than anything else on the market.” -John Reed
  “...this invention is going to change the adaptive sports community big time.” -Trevor Hunter
- All design requirements met, typically exceeded

**Moving Forward**
- Angled stick attachment to provide better push initiation
- Better clamps to hold the Blade Replacement

**Analysis**

FOS Requirement: 4  
FOS after Analysis: 25

FOS Requirement: 4  
FOS after Analysis: 4

Acknowledgments: QL+, Scott Huyvaert, Trevor Hunter, Seismic Skate Systems, Colorado Adaptive Sports, John Reed, Bruce Grandchamp, Daria Kotys-Schwartz, Julie Steinbrenner, Sean Wilcox