

Stow-Away Pool Table

Beyond Innovation, LLC



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Travis Jarboe, Joel Manahan, Matthew McHugh, Thomas Silva

Background

- Successful proof of concept
- Redundant sensors
- Developed without structural analysis
- Not designed to meet tournament specs



Image credit: Team 6.

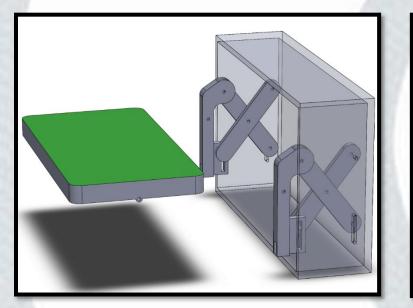
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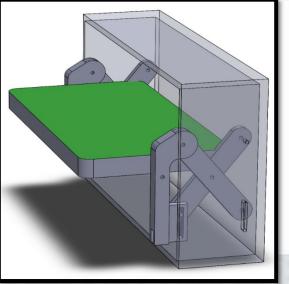
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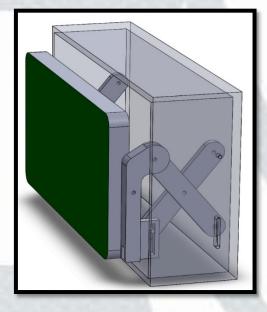
Scope

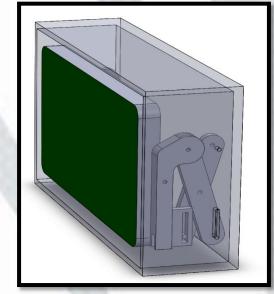
- High emphasis on marketability of product. Quality, supply chain.
- Improvement of leveling systems performance.
- Verification of compliance with structural/safety requirements.
- Table must meet expectations of tournament players.

Design 1



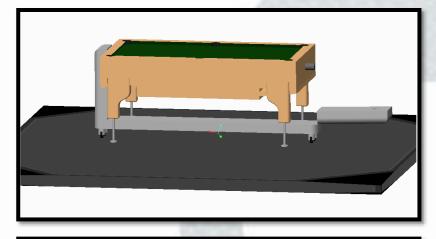


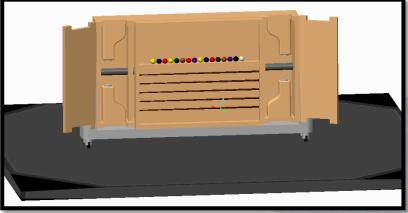


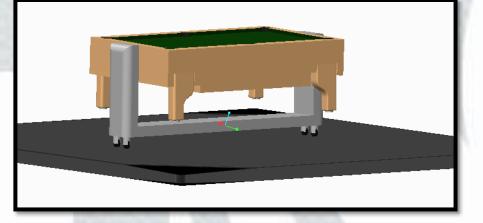


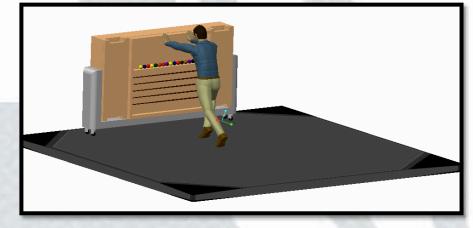
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Design 2









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Design 3





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Design Decision Matrix

| TEAM AVERAGE | | | | | | | | | | | | |
|--------------|----------|--------|----------|-----------------------|---------------|-------------|----------------|-------|--|--|--|--|
| | | | Criteria | | | | | | | | | |
| | | Safety | Low Cost | Ease of Manufacturing | Visual Appeal | Familiarity | Low complexity | Total | | | | |
| | Weights | 3 | 1 | 2 | 3 | 2 | 1 | 12 | | | | |
| | Design 1 | 2.75 | 1.75 | 1.75 | 2.5 | 3 | 1.5 | 28.5 | | | | |
| | Design 2 | 1.5 | 2.75 | 2.75 | 1.5 | 2.5 | 2.75 | 25 | | | | |
| | Design 3 | 2 | 2.5 | 1.75 | 2.25 | 2.25 | 2 | 25.25 | | | | |
| | | | | | | | | | | | | |

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What's ahead

- We will receive the slate earlier than anticipated.
- Fabricate a scaled down version of the chosen design.
- Structural analysis of stow away mechanism.
- Computer modeling and simulation.
- Analysis and redesign of leveling algorithm.

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Planning for success

- Take full advantage of mentors experience
- "Measure twice, cut once."
- We will peer-review our drawings.
- Whenever possible, hardware will be tested separately before implementing it into the system.

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Gantt Chart

| - | | | | Aug 31, '14 Sep 14, '14 Sep 28, '14 Oct 12, '14 Oct 26, '14 Nov 9, '14 Nov 23, '14 Dec 7, '14 |
|-------------|-------------------------------|--------------|--------------|---|
| 0 | Task Name | Start 🗸 | Finish 👻 | S F W M S T T S F W M S T T S F W M S T T S |
| | Stow-Away Pool Table Project | Wed 9/10/14 | Fri 12/5/14 | |
| > | ▲ Initiating | Wed 9/10/14 | Fri 9/26/14 | |
| < - | Develop Team Relationship | Wed 9/10/14 | Fri 9/12/14 | |
| < - | Needs Assessment Report | Wed 9/17/14 | Fri 9/26/14 | |
| < ₹ | A Planning | Mon 9/29/14 | Fri 10/10/14 | |
| > | Set Up Project Environment | Mon 9/29/14 | Wed 10/8/14 | |
| > | Project Plans & Project Specs | Mon 10/6/14 | Fri 10/10/14 | |
| ۹. | ▲ Executing | Mon 10/6/14 | Fri 12/5/14 | |
| ۹. | Midterm Presentation | Mon 10/6/14 | Tue 10/14/14 | |
| | Concept Generation | Mon 10/6/14 | Tue 10/14/14 | |
| ۹. | Initial Web Page Design | Tue 10/14/14 | Fri 10/17/14 | |
| 7 | Midterm Report | Fri 10/17/14 | Fri 10/24/14 | Γ τ−η |
| | Peer Evaluations | Mon 10/27/14 | Tue 10/28/14 | |
| - | Aquisation of Parts | Mon 10/27/14 | Fri 12/5/14 | |
| | Midterm Presentation II | Fri 10/31/14 | Tue 11/11/14 | |
| - | Final Web Page Design | Mon 11/17/14 | Tue 11/25/14 | |
| | Peer Evaluations | Mon 11/24/14 | Tue 11/25/14 | |
| | Final Design Presentation | Tue 11/25/14 | Tue 12/2/14 | |
| - | Final Report | Thu 11/27/14 | Fri 12/5/14 | · • |

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A Brief Recap

- Change of Original Design Idea
- Brainstormed Possible Designs
- Design 1 Selected
- Revision of Plans & Gantt Chart Updated

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