



Release Lanyard Project

January 29th 2013

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Andrew Baker

Overview

- Problem Statement
- Current Design
- Top Design
- Change in Focus
- Gantt Chart
- Conclusion
- References

Problem Statement

- Issues with freezing temperatures and debris
- Issues not activating weapons system
- Issues with poor installation
- Keep new design under \$300

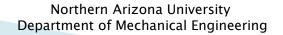
General Constraints

- ► Temperature Range –50°C to 150°C
- Activation Force of 50N
- Breaking force of linkage 75N

Current Design

- Pivot point / Activation point
- Cable / Cable Guide
- Activation Slider

Current Lanyard Design

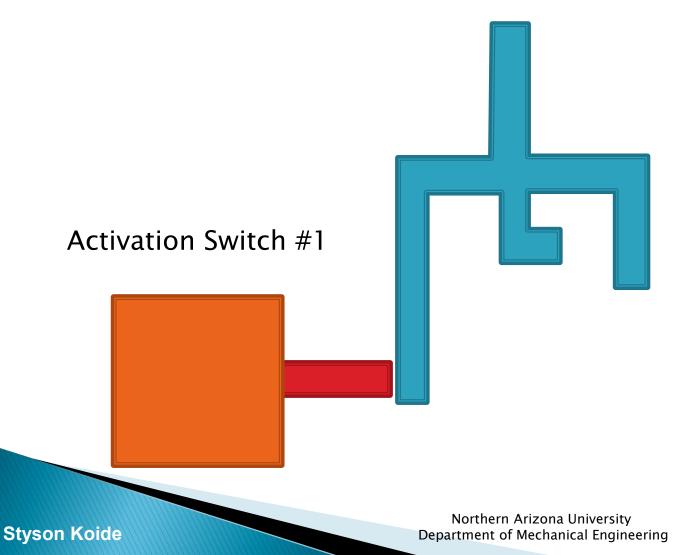


Styson Koide

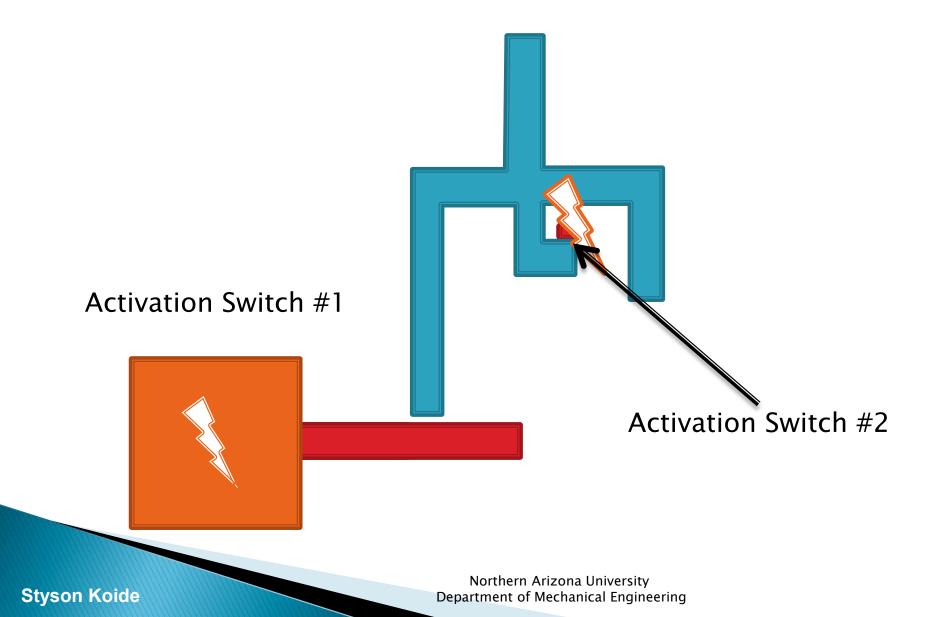
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Current Lanyard Activation

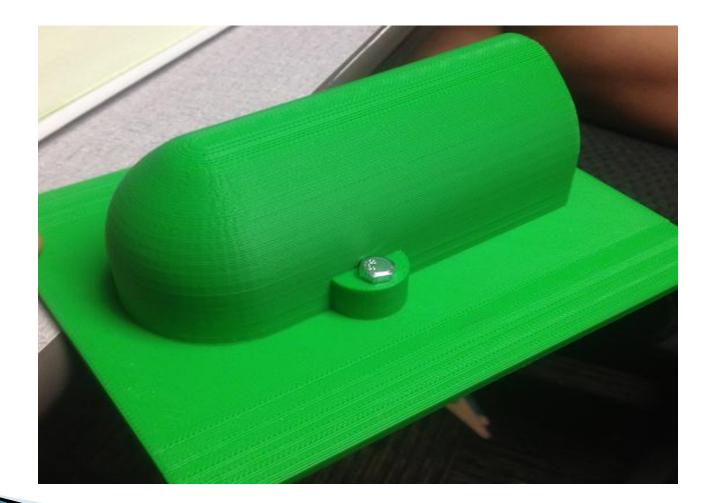
Activation Slider



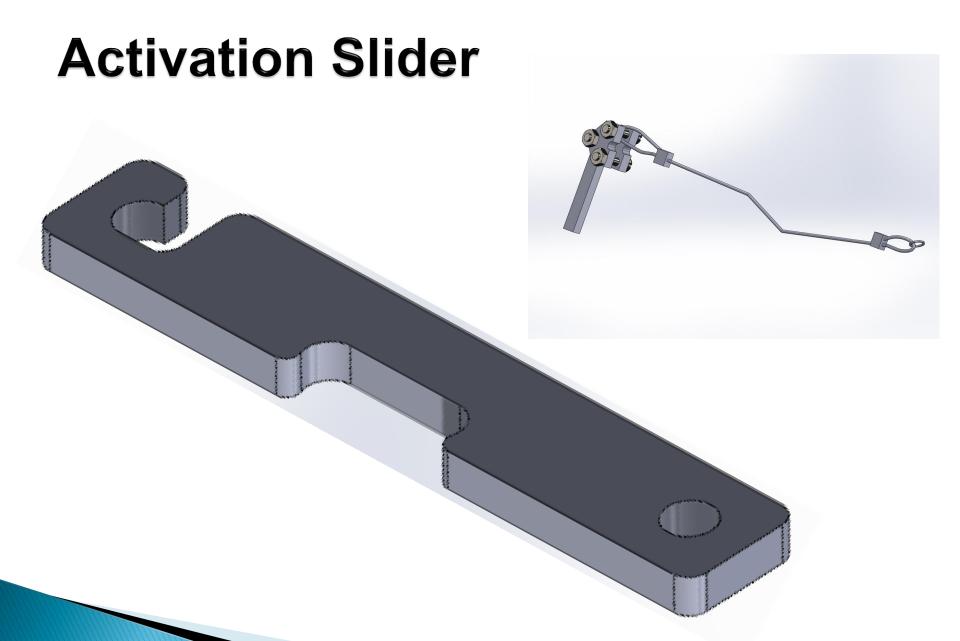
Current Lanyard Activation



Housing Design

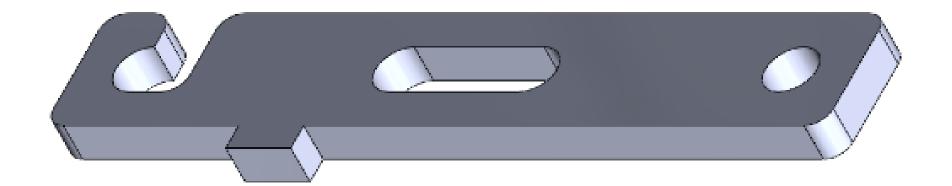


David Lofgreen





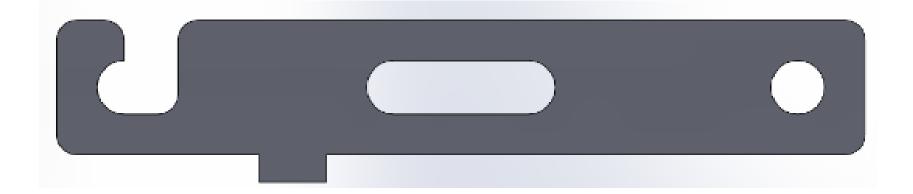
Activation Slider



Northern Arizona University Department of Mechanical Engineering

Tim Haynes

Activation Slider





Testing & Design Analysis

- Testing
 - Rapid prototyping
 - Simulating environmental issues
- Design Analysis
 - Mechanics of Material
 - Vibration
 - Finite Element Analysis
 - Statics
 - Fluid Mechanics

Gantt Chart

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Conclusion

- Problem Statement
 - Issues with freezing temperature and debris
 - Not activating
 - Poor installation
- Current Design
 - Failing under extreme conductions
- Top Designs
 - Include new slider arm, cable, and pivot point
- Gantt Chart

References

- Stephen Larimore
 - Raytheon Department Manager
- Kelly Convington
 - Raytheon Mechanical Engineer

Questions?

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Chris Temme