Longboards are a popular mode of transportation. Stopping a longboard can be difficult for even the most experienced riders. Currently, the rider is limited to dragging a foot on the ground or jumping off of the board to stop. The goal of this project was to create an effective, practical and unobtrusive longboard brake. Our resulting product was a dual friction brake system that is activated by a foot pedal.

**Project Objectives**
- Alleviate the risk to pedestrians and longboarders created by uncontrolled or excessive speed
- Provide riders with a safe and easy alternative to the existing ways of stopping
- Product should be unobtrusive to the rider
- Produce and sell as a bolt-on kit

**Abstract**

Stopping a longboard can be difficult for even the most experienced riders. Currently, the rider is limited to dragging a foot on the ground or jumping off of the board to stop. The goal of this project was to create an effective, practical and unobtrusive longboard brake. Our resulting product was a dual friction brake system that is activated by a foot pedal.

**Engineering Challenges**
- Creating universal brackets to fit the wide variety of skateboard parts
- Considering the tight clearances created by different styles of riding
- Stabilizing the assembly to limit vibrations and create a tight configuration
- Creating easy installation so that mounting construction such as welding and major drilling are already completed

**Design Solutions**

Our solution utilized axially mounted brackets and crossbeams, to hold semicircular shaped frictional brake pads. The brackets allow us to utilize a standard axle diameter as the mounting point for stability. To limit vibrations and movement, the crossbeams then link each bracket together and to the truck. Finally, the shaped pads provide optimum contact area to exert the maximum amount of friction to the wheels.

**Benchmark**

Our Benchmark is the SkateBrake System from the SkateBrake company. The system utilizes a hand held activator with a cable in sheath mechanism which motivates two friction pads onto brake surfaces mounted to the wheels. The SkateBrake cable system creates a potential riding hazard and requires specific trucks and hardware. Board owners must replace their existing components with SkateBrake parts.

**References**

United States Patent References: 4088334 6820881 4099734

**Acknowledgments**

Rick Ireton, SkateBrake, Inc.