Alternative Design #2

Bed Railing Device (BRD)

Team #4
Randy Corriveau
Eric Nastuk
Ian Wallis

Client Contact:
Sean Stenglein, Brenda Stenglein
Phone: 860-429-1059
34 East Howey Road
Ashford, CT
brenda.stenglein@gmail.com
The second design of Sean Stenglein’s Bed Railing Device (BRD) consists of a deployable vertically telescoping railing, as well as a set of adjustable stairs. The railing will telescope either up or down depending on the operator’s input. The railing will either be constructed of aluminum or steel for rigidity, and covered with a medium density foam for Sean’s protection and safety.

![Figure 1: Adjustable Steps](image)

2.1 Railing:
The railing will be a segmented device with two or three different diameter tubes for vertical supports. The horizontal bars of the railing will be a rounded tube for the top, and a squared bar for the base. The railing will follow slotted tracks attached to the bed frame which will give the device support as well as direction for its function. Foam padding will be wrapped around all supports, as well as a mesh screen will be implemented to prevent anything or anyone from falling through the railing.

2.2 Stairs:
The stairs will be a set of two fully adjustable steps, with tightening knobs on screws in order to set the desired height. This setup will allow for a completely customizable step height, which will be needed as Sean grows and his legs become longer. The stair surface will be covered in a non-slip material which will be easy on Sean’s feet when he gets out of bed, yet also providing enough grip for safe use.

2.3 Deployment:
When the railing retracts, the vertical tubes collapse into one another, folding the device up much like an accordion. When in use, motors pull the device upwards which causes the segments to re-extend. This will allow the device to take up much less room, by conserving space with collapsing bars, and also for ease of operation. The railing will be able to be in a collapsed state and not interfere with the stair deployment; as when fully retracted it will be able to fit underneath the mattress level, yet above the bottom of the bed frame. The stairs will be able to be pushed under the bed, or pulled back out regardless of the status of the railing.