WEEK 11 UPDATES

Adjustable Back Angle Controller

TEAM 8
Alaena DeStefano
Steven Frisk
Ray Pennoyer
Work Completed

Machine Shop Work
- Base Plate Construction
- Motor cage
- Bed Framing & Upholstering

- Handle Construction
- PIC Microcontroller Code
- Circuit Design
Base Plate Construction

- Steel legs are bolted to plate and frame for easy removal
- Exact positioning of jack on frame
Motor Cage Construction

- Used 3x3” rubber coupling to fit motor
- Easy removal from cage by unscrewing grips
Bed Framing and Upholstering

- Bed Back attached with rod as hinge and secured with captive nuts on either end
- Upholstered with blue fleece and egg-crate foam inside to add comfort
- Castor wheel secured in place with Plexiglas plate on top of jack
Handle Construction

- Handle protrudes out
- Torsion springs to apply force to handle
- Slot for potentiometer connection
- Easily moved to either side of bed
PIC Microcontroller Code

- A/D conversion
- Direction select
- Hardware PWM
- Includes handle button and stop sensor for bed back extremes
Circuit Design

- Had to put MOSFETs in parallel in H-bridge because of current issues
- Integrated handle buttons and stop sensors
Future Work

- Program Microprocessor Chip
- Test Bed assembly with handle
- Work on appearance of Bed
- Write Final report and Operators manual
Project Review

- Circuit finalized
- Construction of bed complete
- Most of handle constructed
- With all major parts purchased, still well within $2,000 budget: ~ $1432 spent
- Working hard to complete project on schedule
Hours Worked

- Alaena: 25 hours
- Ray: 35 hours
- Steve: 20 hours
- Total Hours Worked: 80 hours