## Announcements:

• Oil residue from pipe bender contaminated the insulation from the inside

## Meeting:

- Damaged insulation
  - Insulation is likely absorbing the oil
  - Degradation?
    - Angela stated no degradation should be occurring
    - She believeds the oil is degrading the insulation
  - Michael will be in contact with Angela over break and will be picking up addition materials at TDCR.
- Wiki Page
  - Include 1 sentence blip describing project at high level overview
  - Include design presentations, compile meeting minutes into one document, and attach product requirements
  - Include images of installing insulation under background section
- Rollers
  - Materials are limited
    - Angela will send prohibited materials list
    - Can't use rubber
      - Wont pass in cleaner tank for tubes?

- Post weekly schedule on drive
- Pick up materials at TDCR (Michael)

Date: 11/29/2018 Attendees: All + Steve

Announcements:

• N/A

Meeting:

- Have results prepared for Angela
- Michael won't be here for snapshot
- Meet tonight to set up table for snapshot
- Logbooks due next week
- Have motor spec'd out before break
- Michael will order finger trap tomorrow
- Determine meeting times for next semester
  - Submit weekly schedule to determine appropriate meeting times

Date: 10/25/2018 Attendees: All + Matthew, Steve, Sarah

Announcements:

• N/A

Meeting:

- Substance on tubes
  - Likely was applied
  - All tubing is cleaned after being bent
  - Clean tubing with acetone
- Don't use copyright material on Wiki
  - Submit information for review before uploading to wiki
- Regular meeting on Nov 8th
  - May do design review before thanksgiving or after
  - Nov 15th
- Consider the device being a "third hand" for assisting the operator

Date: 10/18/2018 Attendees: All + Steve, Sarah

Announcements:

• N/A

Meeting:

- Document various ideas
  - Powerpoint with visuals or a word document is fine
  - Cast more concepts instead of stopping at just one idea

Objectives:

• Kaleb - send powerpoint to Angela by COB Wednesday

Date: 10/11/2018 Attendees: All + Steve, Angela

Announcements:

• Angela completed her action item and provided data of the tube bends, radius, etc.

Meeting:

- Discussed Snapshot day
  - Presented preliminary design sketches to Angela
    - Sketches of
- Capture decisions made, timestamp things, take images
  - Running document/slideshow presentation to showcase what progress has been made each week to present to Angela
    - Its critical to show innovations and document everything
  - Look at two ideas and pursue/develop ideas
- Plan to meet with Angela again in two weeks (

- Kaleb send Angela documents of constraints to ensure she agrees with constraints given
- Everyone send Angela pictures of project
- Also send more information to help Angela visualize the concepts as we continue to develop them

Date: 09/20/2018 Attendees: All + Steve

Announcements:

• N/A

Meeting:

- Consider various methods of installing tubing
  - Jig providing resistance prior to bend
  - Jig to support tube from one end (extension)
  - Springs vs linear actuators
- Force was exceeding the maximum force reading on scale
  - Need to acquire new scale

- Acquire new scale for test
- Continue modeling preliminary design

Date: 09/20/2018 Attendees: All + Steve, Angela

Announcements:

• N/A

Meeting:

- Angela will submit video of assembler installing insulation and the tube bending process.
- Angela also sent the Ergonomic Product Requirements
- Team should focus on a single design and have preliminary CAD models drawn up
  - Once we model, we can determine what issues are present and whether or not the design will be feasible.
  - Design, test, fail often.
- Benchmarking
  - "Bars" set standard operating times for processes.
  - Use these values provided to determine expected cost savings
  - Other metrics, such as ergonomic factors/risks, quality improvements, less failure, etc can be used to determine benchmarks.

- Acquire scale for tests
- Conduct force tests on pipe
- Create shared drive folder on U drive
- Meet with Steve at 12:30 on Wednesday, Oct 3 in Design Suite

Date: 09/20/2018 Attendees: All

Announcements:

• N/A

## Meeting:

- All
  - Conducted brainstorming session and generated various ideas.
    - Grab
      - Chinese Cuffs
      - Sleeve
      - Mechanical iris
      - Turnoquette
      - cap/seal
    - Push/Pull
      - Compressed air
      - Rollers
      - Caterpillar
      - Pressure differential/hydraulic
      - Springs
  - Added revisions to the Product Requirement document and will submit draft to Steve

Objectives:

• Develop concepts for a preliminary design iteration. Draw hand sketches of system or create SolidWorks models and prepare ideas for next meeting.

Announcements:

• N/A

## Meeting:

- Steve
  - Consider going to Moscow building supply/ for potential mockup to help generate ideas
  - Look through Product Requirements handout to help generate questions on different aspects of the project (20-25 questions)
  - Will send copy of last years Boeing project
- Kaleb
  - Liaison
- Michael
  - Agenda/Binder
- Isaac
  - Budget
- Ricky
  - Wiki/File Keeping

Objectives:

• Read Product Requirements document to generate ideas and draft own document