Notes taken during Training with Steve Broten from MTS on Jan 9th, 2022

- *Station Builder Password: Configuration
  - (Capital "C")
- Cfg – config files
  - All hardware
    - Saves to current cfg
- Station Manager
  - Projects folder
    - Select file (& possible parameter set)
- Mismatch error in logs
  - Altering cfg file
    - Parameter set mismatch error
      - Right click -> "clear" after checking
- Limit trip -> detectors
- Calibration mode
  - Assign cal file
  - Cal file for displacement
  - Serial # for strain gauges
- Safe/Good idea to start in displacement control
  - Avoids unintended movement if using load control
- Under "station control"
  - Before starting test and loading/clamping sample, load cell = 0
    - Use offset button
  - Load control = 0 to start displacement at zero
- Before clamping grips, manual control = Force
  - Avoid grips applying force
  - Actuator keeps load at zero
- Possible to bring + or – 10 V signal into control
  - Set up in cfg file
- Strain control, need to tune strain channel
  - Do outside of system first
- Uncheck manual control for defined test
  - Will receive error code otherwise
- Tune with similar sample before actual test (i.e. rubber with rubber, metal with metal) in same mode displacement or load/force
  - Elastomer peak gains may need to be as up higher than other samples in the 10-20 range
- Tuning values are saved as parameters
  - After tuning, save parameter set to pull from for future tests
- Interrupt triggers before ramp
  - i.e. in displacement, stop at 1000 lbs.

- Check whether working in absolute or relative units
  - Retraction/tension is negative
  - Extension/compression is positive
    - *Double check these values*
- Overall units are in cal file
  - Can change individually as necessary
  - Data readout units can be changed when setting procedure under tab
- Make sure control is correct when defining command parameters
  - Select "count" to define cycle count, otherwise it will run continuously
  - Make sure data acquisition starts when process starts
    - Usually use control as the master signal
  - For large data processes, make sure "write first header only" is checked to avoid headers in lines of data
- Active processes have arrows next to them
- Data is stored in Data > Windows C: > MTS > Projects > Specimens > "named folder"
  - Remember to create new specimen folder before testing (or open previous one)
- "Procedure editor" opens the window for procedure operations
  - i.e. Testing/Data sequences
- Displacement gauge connects to displacement channel/ Transverse
- Set interlocks to avoid damaging displacement gauge arm
- For flexural test with displacement gauge, invert fittings so single crosshead is on bottom
  - *I don't think this is a proper way to test as the load cell needs to be on the single crosshead point* check with ASTM standards or possible corrections

<u>Additional Set of Notes Taken</u>

Display - station setup - channels - axial - check there that the devices connected match with serial numbers shown.

Displacement gage: In station control, detectors, configure the upper and lower limits. The gage goes up to 25mm.

Flexure with Displacement gage

Fixture with two rods should go on the static head (up)

Open MPT

Segment command/ displacement ramp: set rate indicated on ASTM.

End level: 20mm (-0.9 in)

Interrupted when stop ramp is done.

Operator information: to enter sample information (width, thickness, span, etc). Open parameters, add items, change items name according to the parameter they will record.

Attribute non-blank so you have to enter the info when requested.

Double click start after operator information done.

Data acquisition: level crossing, acquisition master signal axial force,

In signals add what you want to measure: displacement, force, time, etc.

Start after operator informantion done.

Acquisition: displacement gage.

Data display: enter display parameters in Plot.

Select type of plot.

Plot setup: x-axis initial minimum 0.05 and Y axis scaling.

Event: rectangular icon to stop ramp. To start When procedure start

Command: Straignt line to hold machine to start when stop ramp is done. Enter time.

End procedure: Double click on "procedure is done when" select when.

Save test

Make new specimen and name it

Station control, enable Manual commands uncheck

Interlock reset

Lock

Reset

Start test

When test is done,
Unlock
Check enable manual command

Find data