Apparatus

- Vibration Table (provided by General Dynamics)
    - The shake table at General Dynamics theoretically had the capability of giving us the profile that was needed to simulate the small amount of vibration that would be experienced in the VCCT. Yet during testing we were unable to simulate anything near a profile that small. The table was ultimately used to place the MASM in an extreme environment.
- Signal Star Vector Vibration Controller (provided by General Dynamics)
    - This was the program that accumulated all the data from the accelerometers and generating the designated graphs. This program also controlled and calibrated the shake table.
- Test Cage
    - The 20" x 22" aluminum test cage is used to act as a false ceiling, allowing the MASM device to be connected to the Chief RSA mounting hardware as it would in the VCCT.
- Aluminum vibration table mounting plate.
    - An aluminum plate with the 4 hole drill pattern to match the mounting holes of the shake table.
- Accelerometers
    - These carefully placed accelerometers are used to collect data (displacement, acceleration, velocity etc) at each designated point in the Z direction.
- 20 lb Simulated Projector
    - Instead of using a real projector, a 20lb weight was used in its place. The weight was suspended from the Chief SLB mount which was mounted to the bottom of the MASM device. The weight allowed the springs to be placed under the correct compression that would be applied to the springs as if a real projector was suspended from the undercarriage of the device.

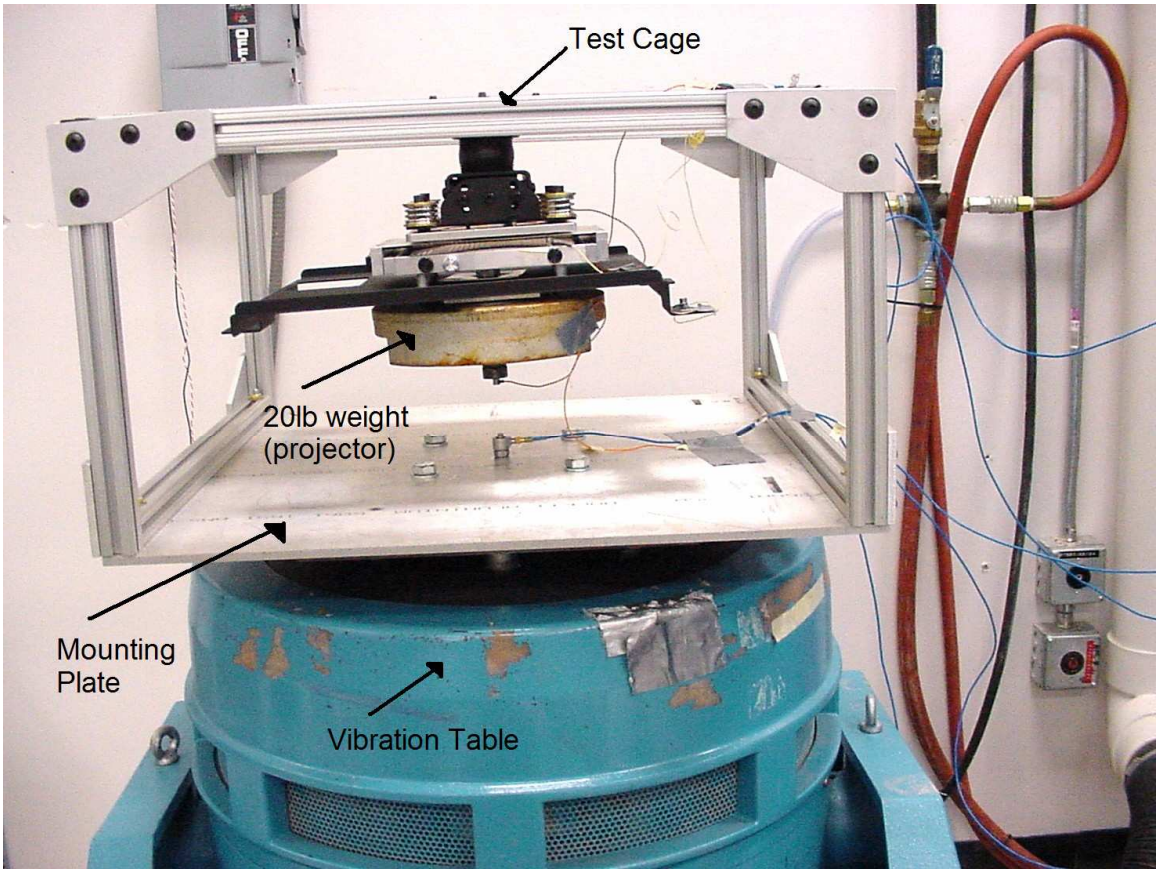

Figure 20: Experiment 2 Test Set Up

Experiment 2 Procedure

- Attach the Chief RSA mount to the test cage using a 1 ½" threaded pipe.
- Mount the SLB Bracket to the bottom of the MASM using 6 aluminum spacers. This is done because there must be enough room to bolt the 20lb projector to the center of the SLB bracket.
- Mount the MASM to the Chief RSA mount using 1 ¼" 10-28 screws that pass through the center of the Gel-Mec springs.
- Mount the 20lb weight (simulated projector) to the Chief SLB bracket
- Attach the aluminum mounting plate to the test cage
- Mount the test cage with mounting plate to the Vibration Table, make sure to torque down the 4 bolts to the table specs
- Using bees wax, fix all five accelerometers into place

- Using the Signal Star Vector Vibration Controller, create the vibration profile and assign accelerometers to display in its set graph. Set range from 5 to 15 Hz, with a displacement of 0.5 inches.

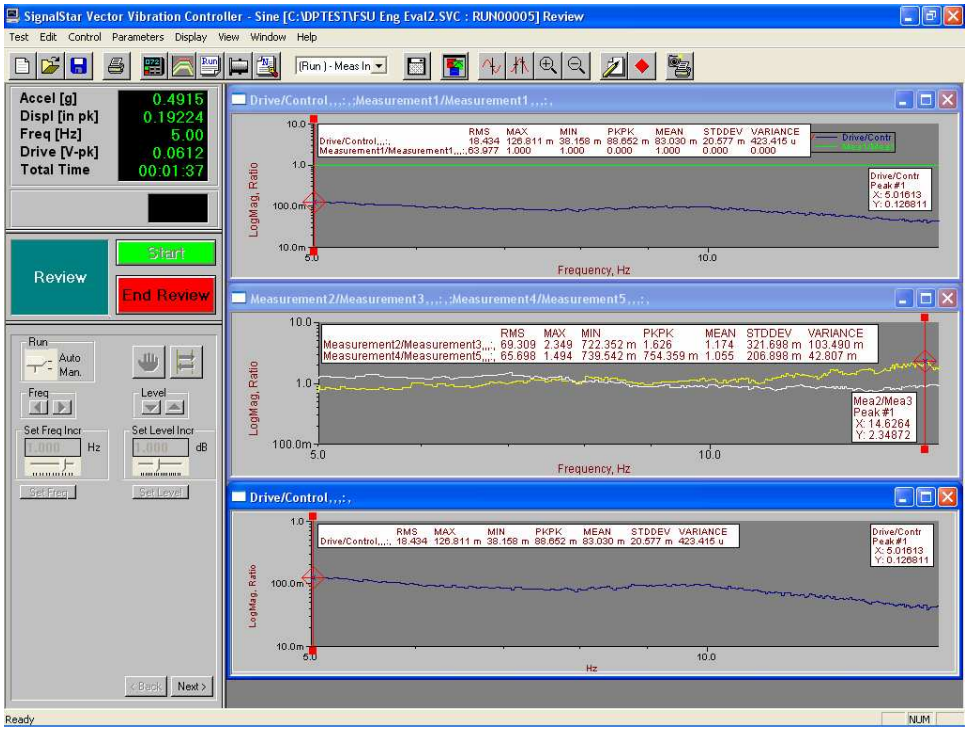

Figure 22: Screen Shot of Signal Star Vector Vibration Controller

- Run the Signal Star Vector Vibration program to begin the test with the shake table.