

Justin Tucker Sorted By Project

300078 - DMO Support - AUV

- INS housing - minor updates for internal cable clearances. (Week 25)
- INS Housing, minor updates to metric fastener specs (Week 26)
- Lower INS housing end cap made it through the shop and is ready for electronics integration. (Week 30)
- Reanalysis of INS housing to fine tune safe hydrostatic test pressure. (Week 31)
- Searching for test facility availability for housing. (Week 31)
- INS housing preliminary "low pressure" 5300psi test completed with no issues. (Week 35)
- Further pressure testing planned using DeepSea Power & Light's facility for full working depth certification. (Week 35)
- INS electronics bracketry completed and handed off for integration. (Week 35)
- INS measurement center lever arms (Week 39)
- INS Housing 6000m pressure test scheduling at DeepSea Power & Light (Week 40)
- INS pressure test trip scheduling (Week 41)
- Travel booking for DSPL trip (Week 42)
- Completed a successful 6000m pressure test on the INS housing at DSPL. (Week 43)

901101 - Seafloor Mapping

- LASS sled orientation plate and brackets being finalized (Week 25)
- Stereo camera lens hood FOV and sensor placement established (Week 25)
- LASS sled orientation brackets released for manufacturing (Week 26)
- LASS sled revised orientation plate and tolerances. (Week 27)
- Thermal experiment - Started on motor/pump and heater design. (Week 27)
- Thermal experiment - Continuing to work on setting up the motor and VFD. Worked through the BOM of the rest of the experiment design. (Week 28)
- LASS plate, design for cable management spindle (Week 29)
- Thermal experiment, Pump to motor coupler and mounting layout (Week 29)
- Misc. hardware ordered for LASS integration (Week 30)
- Thermal experiment, continuing to work through ordering and assembling subcomponents. Working through challenges with uniform flow through nozzle array (Week 30)
- Lens hood FOV clearance modification (Week 31)
- Organize reassembly of LASS brackets (Week 32)
- Design of Norbit bracket adapter (Week 32)
- Reassembly of LASS and miscellaneous part completion (Week 33)
- LASS integration completed, joined for first expedition day (Week 35)
- Heated plume experiment cart mount and assembly. (Week 44)

- Thermal experiment (Week 45)
 - Purchased and assembled hoses and fittings (Week 45)
 - Designing heated plume nozzle (Week 45)
- Complied LASS clearances and CAD for Jason team (Week 46)

901405 - Wave-Energy Conversion for Oceanographic Applications

- 2 point mooring analysis (Week 39)

902010 - Mesopelagic LRAUV

- Meeting and prepwork for Port Hueneme pressure test. (Week 29)
- ANSYS mechanical and Helius composite tube model setup and comparison (Week 29)
- Comparison NL buckling model setup with LS-Dyna Implicit solver (Week 30)
- Organize previous carbon tube testing for benchmarking of simulated failure index (Week 32)
- Intro discussion with Schrodinger's polymer science lead on applying their multiscale modeling method to composite failure prediction (Week 32)
- Successful pressure test including safety factor identification on sacrificial tubes. (Week 35)
- DVL housing design and layout tradeoffs (Week 39)
- DVL housing design (Week 40)
- Nose assembly updates (Week 40)
- DVL housing design and continued nose assembly modeling (Week 41)
- AHRS mounting path resonant frequency analysis (Week 41)
- Continuing design/drawings for DVL housing (Week 42)
- Preliminary DVL housing drawings being reviewed (Week 43)
- DVL housing, bracketry, and nose frame adapter drawings released for manufacturing. (Week 44)
- Continued work on nose frame assembly, nose shell, CTD bracketry, puck bracketry, and EyeRis payload adaption. (Week 44)
- Continuing work on DVL housing drawings and miscellaneous nose assembly parts (Week 45)
- tail shell router jigs (Week 45)
- Revisions on DVL Housing (Week 46)
- Continued work on nose assembly (Week 46)
- Nose shell design for EyeRis and Planktivore (Week 47)
 - Background review of prior work to minimize prey response to vehicle movement in imaging volumes. (Week 47)
 - Baseline characterization of bow wake on LRAUV and Meso LRAUV (Week 47)
 - Training on Fluent Adjoint optimization (Week 47)

Out of Office

- July 15th -18th Vacation

- Aug 20-21 - Port Hueneme pressure testing
- Oct 22-23 - INS 6000m pressure test San Diego DSPL

Overhead

- Ansys Mechanical and Fluids evaluation (Week 25)
 - HPC remote solve services installed on Ubuntu VM (Week 25)
 - Multi user and HPC licensing usage analysis - in progress (Week 25)
 - Pressure controlled nonlinear buckling template 2D shell model created (Week 25)
- Ansys Mechanical and Fluids single floating seat purchased and available for all users. (Week 26)
- Structural Analysis for ROV crane lifting assembly (Week 27)
- Working through a general setup of two way coupling between solidworks and ANSYS to pass and control geometry parameters from ANSYS for design studies and repeat templates. (Week 28)
- ANSYS training for multi design point DOE runs. (Week 29)
- Working through LS-DYNA node perturbation methods for initiating buckling. (Week 30)
- Debugging upgrade and license issues with Ansys RSM on linux (Week 31)
- Continuing work on Ricketts lifting assembly (Week 33)
- Build out of ASME minimum nonlinear material models for 316 stainless steel. (Week 36)
- Finishing up Ricketts lifting assembly analysis and suggestions (Week 36)
- Finished up and documented Ricketts lifting assembly analysis and suggestions (Week 37)
- Working through ProteusDS mooring design training (Week 37)
- PDM 2024 upgrade prep (Week 39)
- SolidWorks Vault Upgrade (Week 40)