

Denis Klimov Sorted By Project

300083 - DMO Divisional Support - LRAUV

- LRAUV battery pack testing setup was overhauled back into operation. We are to test 2 battery packs after mechanics are rebuilt due to cracking frames resulting from age and field deployments. Also, training Quinn Shemet on using the test setup. (Week 9)
- Two debugged battery packs seem to be operating so far. (Week 13)

901112 - Monterey Bay Time Series

- Software update for the IFCB instrument had created some problems which were eventually resolved. We are continuing testing the software and started equalizing the instrument to the seawater in a preparation for the upcoming deployment (Week 13)
- We had finally deployed IFCB on Power Buoy! Due to deployment delays, we had to keep the instrument in the lab in closed configuration which means we had to set a local network test environment in order to monitor and control the IFCB. Deployment went well but then we lost power overnight due to calm conditions which created what looks like bubbles in the sheaf circuit. This issue is taking some effort to overcome using remote controls but looks like performance is getting better so with any luck we could get the instrument back to 100% performance without recovering. (Week 18)
- We are running into some issues on the IFCB operation on Power Buoy after a power outage and not sure yet if they can be rectified remotely; also, possibly, the issue came about during towing of Power Buoy out of the harbor due to silt contamination such as happening to the other IFCBs used near harbors and jetties by other users on the western seaboard this is (Week 19)
- We had to do emergency recovery of IFCB using a trip with Paragon to Power Buoy location due to rising humidity. Suspecting internal needle clogging similar to what other groups along the Western seaboard are experiencing, especially close to shore due to silt contamination. First time emergency recovery was an experience; overall it came OK and we certainly learned of some improvements for the next time. Opening the instrument, there was about 5 mL of the water inside; so not a significant leak, luckily, and no much damage. (Week 21)
- We are consulting with McLANE and other users on possible solutions and have parts on order. A new model of the needle introduced by McLANE recently, slightly larger and polished inside, is of particular interest. (Week 21)
- The IFCB pumps had been refurbished at McLane. Turned out, one of the motors did not just come out of alignment, but actually failed. McLane is shipping back the refurbished pumps as well as the failed motor for a post-mortem. (Week 29)
- Repaired pumps are received from McLane but the rest of the order for rotary valve, needle, and filter cartridges is still back-ordered. (Week 32)
- We are still waiting for parts for IFCB from McLane (Week 38)
- Looks like McLane is going to ship parts for IFCB repair this week (Week 39)
- Parts for IFCB repair finally received. Looking into configuring a repair space which is challenging due to the instrument size and configuration (Week 40)
- Table for the IFCB repair is configured, IFCB is suspended from the overhead rail system. Ordering a new leak tray for under-the instrument and to hold reagent bags. (Week 46)

901809 - Deep Sea Bioinspiration

- Working on an Open House layout. (Week 29)

901903 - BioRAMAN

902004 - Planktivore

- We are making good progress reinforcing and straightening out the Fluume mechanical and piping structures, both as it turned out, sugged under the load in initial tests (with Aaron). Once reinforcement/ straightening are successful, we are to proceed with a final assembly of lifters, table, optical breadboards, and the aquarium (Week 9)
- Fluum is in a stage of final touches with fasteners update, plus it needs an 4" acrylic straight pipe (Aaron), aluminum lock plate (Roman) for the drain plug, and shelve(s). Flume had been moved to the wet lab so we could ramp up prepping for the water test while outstanding mechanics is being worked on. (Week 12)
- We are encountering mechanical fit issues with strobe assemblies, due to the stack of tolerances and multiple boards and components. We are hoping to resolve those issues fairly soon, at least partially, allowing upcoming deployment. (Week 13)
- We are moving Fluume assembly and associated parts to ESB. (Week 32)
- We are consolidating parts and tools for Fluume in the ESB building this week. (Week 46)

902101 - LRAUV Technology Development and Fleet Operations

- Two amplified PAR sensors assembly underway (Week 13)
- We had the issue with one operating a PAR sensor on Ahi, with debugging, turned out it was an incorrectly configured controller card, not the sensor itself (Week 38)
- PAR sensor debugging on AHI, turned out it was the control analog card, not the sensor. Once the board was configured, the PAR channel started working. We might have to look at calibrating this unit once the vehicle is back. (Week 39)
- Helped debugging a compass on Thetys which experienced some sort of intermittent fault causing burning out a U14 on the Compass control card. Two cards were damaged. Upon inspecting / removing the damaged component it was found that pin 2 of damaged IC was fused to the pad on both boards, indicative of a high current. This line was then traced through the vehicle and front end-bell for possible parasitic connections and one was indeed found; battery voltage from one of the components which only activated occasionally, was shorted to the suspected compass communication line. (Week 40)

902204 - Scalable Robotics

Out of Office

- 6/12/2023-6/15/2023
- 7/3/2023-7/6/2023
- 7/11/2023-7/14/2023

Overhead

- The laser safety procedure for the CoMPAS Laser Line Imager was implemented (with Giancarlo Troni and Paul Roberts) and subsequently the instrument was deployed on R/V Fulmar which turned out to be a success. (Week 18)
- Looking at installation issues and laser safety aspects of a projectors demos in the Pacific Forum. Documentation provided by Sony included a warning that the projector with the lens removed emits Class 4 laser radiation. This is a serious hazard level capable of damaging eyes as well potentially damaging for the skin. Normally the lens would not be casually removed. Still, having an embedded Class 4 laser be so easily accessible is a safety concern. With a lens installed, such a projector is rated as a Class 1/ Risk Group 2 or Class 1/ Risk Group 3 which also have a number of installation and access concerns. (Week 19)

- We are looking at the installation option for a new reflow oven (with Jose Rosal) and lab B232 reconfiguration. (Week 21)
- We did an additional review of a Paragon HPU battery system design; and figuring out what is the scope of responsibilities of EE Design Battery Safety Sub-committee (Week 21)
- The B232 lab reconfig is well underway. This week, we are completing new shelving in the curtain area, and starting setting counters. Also the issue of horn-strobe fire alarm location is close to being resolved: we are looking at the relocation of a horn-strobe into the center of the lab; and install additional strobe only (no horn) in the curtain area. (Week 29)
- The overhaul of the lab B232 is well underway. This week, facilities are starting removal of the countertops from the right side of the lab which is to be reused in the left side in the laser curtain area. The 30" countertops on the right are going to be replaced with a deeper 36" countertop allowing placement of larger equipment such as LPKF router and pick-and-place machine. (Week 32)
- Lab reconfiguration is close to completion. Importantly, storage of Thorlabs optomechanical parts had been figured out. (Week 38)
- Lab B232 configuration is well underway. We are looking at configuring the rest of the shelving on the left side of the lab before the other projects move-in. (Week 39)
- Safety Committee meeting this week (Week 40)
- We are working on the issue on the handling soldering materials flumes, especially with water-soluble soldering materials, from both EE and Safety perspective. The path forward is identified, that is to use flat down-draft boxes similar to one existing box, but make them smaller and easier to swap, and also make options for different size ducts, 6", 4", and 2". (Week 46)