

902306 - SINKER

Week 51

1. George Stern
 - a. Battery board external fabrication quotes

Week 50

1. Enoch Nicholson
 - a. Battery development
 - b. Elevator Frame design
2. George Stern
 - a. Battery housing shield board layout and review
 - b. First batteries arrived

Week 49

1. Paul Roberts
 - a. Meetings and planning for 2025 development work
2. George Stern
 - a. Reviewed battery interface board layout
 - b. Schedule and shield board planning

Week 48

1. George Stern
 - a. Updated the battery can electrical architecture; reworked the main board so it can be built short to create 2 different boards which will now fit in the MBARI oven or could be built externally. Revised charging so it could be done with more simple software outside the can.

Week 47

1. Enoch Nicholson
 - a. Mars Deployment frame
 - b. Battery updates

Week 46

1. Enoch Nicholson
 - a. Frame concept design with frank
 - b. Material budget with paul

- c. Concept design of Final deployment frame
- 2. Paul Roberts
 - a. Review of frame design
 - b. Order parts
- 3. George Stern
 - a. Updating battery interface board to facilitate ETech assembly

Week 45

- 1. Paul Roberts
 - a. Sourcing parts for SIT camera, motors, and hardware interfaces
- 2. George Stern
 - a. Identifying new reduced scope battery architecture

Week 44

- 1. Paul Roberts
 - a. Tank testing data analysis
- 2. George Stern
 - a. Batteries are on order

Week 43

- 1. Enoch Nicholson
 - a. Battery Chassis mini-design review
 - b. Battery chassis test build
- 2. Paul Roberts
 - a. Test tank sinking column flow imaging
- 3. George Stern
 - a. Identified ways to make the battery interface board modular but a group meeting uncovered additional mechanical risks which might impact the design

Week 42

- 1. George Stern
 - a. Battery interface board testing with real batteries and planning

Week 41

- 1. Rich Henthorn
 - a. Motor control interfaces
- 2. Enoch Nicholson
 - a. Full Camera system ROV test dive
- 3. George Stern
 - a. Troubleshoot module board
 - b. Made fixturing for battery testing

Week 40

1. Enoch Nicholson
 - a. Completed frame assembly
 - b. Completed initial tank testing
2. Paul Roberts
 - a. Preparing for Oct. 9 deployment

Week 39

1. Paul Roberts
 - a. Side-looking camera testing

Week 38

1. Enoch Nicholson
 - a. Supporting frame construction
2. Paul Roberts
 - a. Side-looking camera assembly and testing
3. George Stern
 - a. Tested and troubleshot SAMD module boards

Week 37

1. Enoch Nicholson
 - a. Submitted frame drawings for fabrication
 - b.

Week 36

1. Enoch Nicholson
 - a. Frame detail drawings
 - b. Maxon Motor job submission
2. Paul Roberts
 - a. Assembly of shadowgraph system

Week 34

1. Paul McGill
 - a. Working with Knute to figure out how to order ODI connectors for MARS connection
2. Enoch Nicholson
 - a. Received Tube Combiner

Week 33

1. Enoch Nicholson

- a. Design of Sinking camera assembly
- 2. Paul Roberts
 - a. Side-looking camera chassis fab
- 3. George Stern
 - a. Prepared for battery interface board layout

Week 32

- 1. Enoch Nicholson
 - a. Started Final modeling of long term deployment frame.
- 2. Paul Roberts
 - a. Side-looking camera chassis
- 3. George Stern
 - a. Initial power testing of battery interface board electronics

Week 31

- 1. Paul Roberts
 - a. side-looking camera chassis design
- 2. George Stern
 - a. Identified issue on battery interface board - wrong jumper value specified, James is repairing a few ICs

Week 30

- 1. Paul Roberts
 - a. Planning for Oct 9 cruise
 - b. Procurement of acoustic current sensor
- 2. George Stern
 - a. Began testing Battery Interface board

Week 29

- 1. Rich Henthorn
 - a. Instrument test at MARS
- 2. Enoch Nicholson
 - a. Sinker test dive out to MARS
- 3. Paul Roberts
 - a. MARS deployment test on Ventana

Week 28

- 1. Enoch Nicholson
 - a. Third SINKER Test dive
- 2. Paul Roberts
 - a. Field work July 9 / 18

- b. Data processing
- 3. George Stern
 - a. Carson trip to test new seal/motors- it worked!

Week 27

- 1. Enoch Nicholson
 - a. Aligned sinking column to sediment camera
- 2. Paul Roberts
 - a. Tank testing for July cruise
 - b. Phase 1 Proposal

Week 26

- 1. Rich Henthorn
 - a. EPOS controller code search
- 2. Enoch Nicholson
 - a. Trying different sealing methods.
 - b. Sealed SINKER for deployment
- 3. Paul Roberts
 - a. Tank testing for July 9 deployment
- 4. George Stern
 - a. Began integrating linear motor and seal on sinker in preparation for tank tests
 - b. Troubleshoot and fixed a partially dead IC

Week 25

- 1. Rich Henthorn
 - a. Check out EPOS interface code for ucontrollers
- 2. Enoch Nicholson
 - a. Slider assembly and testing.
- 3. Paul Roberts
 - a. Preparing for tank testing
- 4. George Stern
 - a. Checked out the motor interface board
 - b. Chassis harnessing design for the motor board/controller/motors
 - c. Began integrating the linear motor controller

Week 24

- 1. Rich Henthorn
 - a. Meeting discussion about July deployments
- 2. Enoch Nicholson
 - a. Slider Design
 - b. Started manufacturing

Week 23

1. Enoch Nicholson
 - a. Sliding carriage prototyping & design
2. George Stern
 - a. Fixturing and form factor for the motor boards
 - b. Layout review of motor interface board

Week 22

1. Paul Roberts
 - a. Planning for July cruises
2. George Stern
 - a. Finish electrical design of the motor interface board
 - b. replanned battery board build

Week 21

1. George Stern
 - a. Marginal progress on detailed design of the motor controller board

Week 20

1. George Stern
 - a. Continued detailed design of motor control board
 - b. Final layout updates to the battery housing PCBs

Week 19

1. Rich Henthorn
 - a. Engineering meeting to go over critical tasks for July deployment
2. Paul Roberts
 - a. Planning for July cruises and MARS installation
3. George Stern
 - a. Reviewed battery interface board PWB
 - b. Began detailed design for linear motor interface and reviewed existing bldc "dye injector motor"

Week 17

1. Paul McGill
 - a. Continuing to investigate getting a 1 Gbit MARS cable with less than a year's lead time

Week 16

1. Paul McGill

- a. Attempting to find a Gig-E cable for this experiment
- 2. Enoch Nicholson
 - a. Ordered actuator
- 3. George Stern
 - a. Finalized and ordered linear motor controller

Week 15

- 1. Paul Roberts
 - a. Planning for July Deployments
- 2. George Stern
 - a. Identify motor candidates and controllers

Week 14

- 1. Enoch Nicholson
 - a. Researching linear actuators & COTS wiper motors
- 2. George Stern
 - a. Identify/implement linear and servo motors for revised sealed bottom sinker
 - b. Worked with Jose on battery interface board layout

Week 13

- 1. Enoch Nicholson
 - a. Tank testing & deployment preparation
 - b. Battery PCB layout support
- 2. Paul Roberts
 - a. Testing revised wiper mechanism
 - b. Test deployment on Ventana

Week 12

- 1. Enoch Nicholson
 - a. Wiper design & prototyping
- 2. Paul Roberts
 - a. wiper design and testing
- 3. George Stern
 - a. Battery Safety Committee review
 - b. Updated battery pack schematics

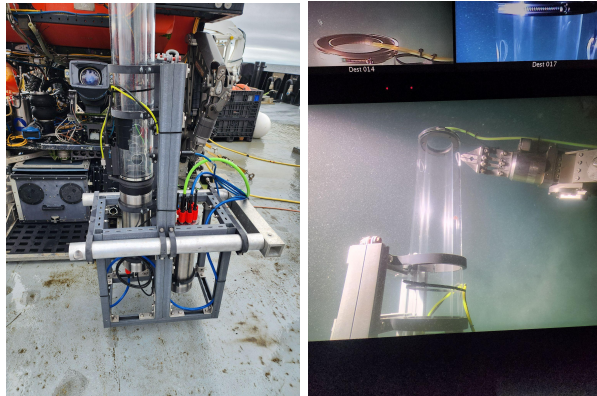
Week 11

- 1. Enoch Nicholson
 - a. Sinking Column hand calcs and CFD
 - b. New wiper mount design
- 2. Paul Roberts

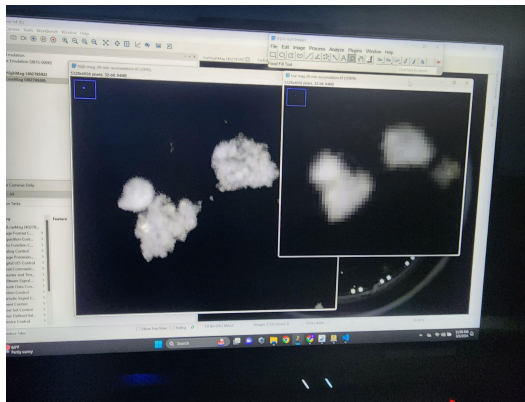
- a. Revisions to sinking column brainstorming
 - b. Data management
- 3. George Stern
 - a. Working with Jose as battery pack design transitions to layout

Week 10

- 1. Rich Henthorn
 - a. Carson cruise Mar 5 to observe current flow in and around sinker tube
- 2. Enoch Nicholson
 - a. Preparing for 03-05 deployment.
 - b. Deployed SINKER on ventana (kept on vehicle). Tested sample accumulation. Used a dye injector to investigate flow around the sinking column. No major failure. Lots of lessons learned.



c.



- 3. Paul Roberts
 - a. First SINKER deployment on Ventana
- 4. George Stern
 - a. First Carson cruise to see sinker deployment
 - b. Worked with Enoch to improve battery pack electronics design packaging
 - c. Completed battery pack safety review package

Week 9

- 1. Enoch Nicholson

- a. Reassembling instrument prior to cruise
- 2. Paul Roberts
 - a. Deployment support March 5 cruise
- 3. George Stern
 - a. Completed schematic capture of battery module boards and and began hand off for layout
 - b. Started review package for battery safety committee
 - c. Started battery module harnessing design

Week 8

- 1. Paul McGill
 - a. Searching for MARS cable that supports GigE Ethernet. Working on new cable design with MARS crew, but that will delay us a few months.
- 2. Enoch Nicholson
 - a. Finished frame conceptual layout
- 3. George Stern
 - a. battery module schematics, block diagram updates and battery checklist

Week 7

- 1. Rich Henthorn
 - a. Ready for Mar 5 deployment and tank testing
- 2. Paul McGill
 - a. Tracking down new cable for SINKER connection to MARS. The cable we chose previously will not support GigE.
- 3. Enoch Nicholson
 - a. SINKER Mass properties
 - b. MARS deployment Frame Design

Week 6

- 1. Rich Henthorn
 - a. Control board software
- 2. Enoch Nicholson
 - a. Wiper testing on Ventana
 - b. Pressure testing of glass ports
- 3. Paul Roberts
 - a. Wiper testing on Ventana
- 4. George Stern
 - a. Battery module controller schematics started

Week 5

- 1. Rich Henthorn

- a. Installed bootloaders and updated software onto the camera and system control boards
- 2. Enoch Nicholson
 - a. Prepared hydrowiper for testing on 02-06 ROV dive
 - b. Robust hydrowiper comp design.
- 3. Paul Roberts
 - a. Preparations for Feb 6 field work
- 4. George Stern
 - a. Initial power on testing of next two Control boards

Week 4

- 1. Rich Henthorn
 - a. Kickoff Meeting
 - b. SINKER controller board checkout
 - c. Ship day Feb 6
- 2. Paul McGill
 - a. Found a cable we can use for connection to MARS
 - b. Found a cable we can use for testing of wiper on Ventana dive
- 3. Enoch Nicholson
 - a. Completed and submitted Battery housing drawings to the shop.
 - b. Started Housing A & B builds for pressure testing with glass ports
- 4. Paul Roberts
 - a. Kickoff meeting and project management
- 5. George Stern
 - a. Updated block diagrams for the battery housing

Week 3

- 1. Enoch Nicholson
 - a. Sinking Column Housing Assy & Viewport ring finishing
 - b. Battery Housing drawing check & MFG discussion
- 2. Paul Roberts
 - a. Battery mechanics and electronics

Week 1

- 1. Enoch Nicholson
 - a. Viewport retainer revision & order