Super-Secret Test 0.4

Location: Steven's Point (CDA Lake)

Travel Report:

No issues again loading up the submarine and handing gear again. The testing location was Steven's Point. Handling gear was already on boat and submarine is easy to transport. However, with more people on the boat the "balance" of the boat alongside the gear is an issue (keep boat balanced).

Test Report:

The testing was again a different process than launching even prior, as this time we had a hoist installed on the boat:

- Handling gear was moved to correlate to the position of the hoist, we did not extend it however.
    - Extending the gear is only needed to have the submarine extend over the water (hoist was used)
- The submarine was again positioned sitting on the edge of the boat, near the hoist, ignored mast hook and chose to attach carabiner to base of the mast due to distance from submarine to hoist being too short
- Instead of using ATV winch attempted to lower the submarine via a rope and the hoist
    - It was successfully launched in
- Upon retrieval, the hoist blew a fuse due to the sheer weight of the submarined when submerged in water
    - Had to utilize the winch on the handling gear
    - However, used hoist to feed in winch, so still did not have to extend the handling gear
- Submarine was not front heavy when utilizing software this time, including ascension (the biggest issue)
    - It is suspected the anchor shackle attached to the mast affected the balance and threw the thruster off
    - The component is now removed
- Autonomous software worked well, was suggested to make some verbose statements in the code to be able to discuss what it is doing (while it is doing it).
    - However, it is going to be very difficult to be able to see the software performing its action, it can only be so close to the surface because the mast must be submerged as well, not just the submarine

- Manual controlling of the submarine was successful
  - o It did lose connection every 5 minutes, solution was a simple "ctrl c" and rerunning "thruster_client.py"
  - o However, why the server quits receiving messages does not make sense since we have a direct connection (will have to delve even more into websockets)!
- Submarine is still negatively buoyant!
  - o When talking to Krieg from Gizmo last week about the buoyancy issues, we had concluded it was due to the anchor shackle
  - o This is clearly still not the case
  - o Will take 2-3 days to a week to fix buoyancy due to Gizmo's schedule (hold off till after launch on 26th)

Extra Notes: Submarine is still so darn heavy that it blew the fuse out the hoist Mark Solomon provided/installed! Three people are still clearly needed, even with the hoist.