

DeepPIV on MiniROV Deployment #3 Checklist

v 1.1.0 27Jul15

K. Katija

Dive Objective: Second in situ deployments of DeepPIV on MiniROV aboard R/V Rachel Carson. Planning a single dive to collect science data (e.g., 3D reconstructions and PIV measurements of flow within larvacean houses and swimming praxiidae siphonophores; the dye injector will not be used due to some issues with the motor). Science dives will be conducted at depths between 200 and 400 m at Midwater Station 1. Due to demobilization requirements, Rachel Carson will return one hour earlier than normally scheduled.

Deployment Date: 07-27-15

Recovery Date: _____

Person performing topside checklist: KALANI

Pre-deployment:

1. Ensure that comm and power systems on MiniROV are functioning normally.
- ✓ 2. Align the laser and camera
 - a. Attach protective shroud and cloth to MiniROV's body
 - i. Zero digital level based on orientation of MiniROV sitting on deck
 - ii. Verify alignment of shroud using a digital level
 - iii. Record digital level reading on shroud: 89.9°
 - b. Enable Tilt and Laser controls in LabVIEW
 - c. Zero the Science Camera
 - i. Click Zero button in Tilt dialog tab
 - ii. Click Home button in Tilt dialog tab
 - iii. Record digital level reading on camera: 0° ← zeroed
 - d. Remove laser housing protective cover, and put on protective goggles
 - e. Power up the laser
 - i. Rotate the dial to 1.5 V in Laser dialog tab
 - ii. Record output of ADC: _____
 - f. Verify that laser sheet is perpendicular to Science camera
 - i. Measure angle of laser sheet on shroud using a digital level
 - ii. Record digital level reading of laser sheet: 0.1°
 - g. Power down the laser
 - h. Replace laser housing protective cover
- ✓ 3. Remove protective shroud from MiniROV.
- ✓ 4. Secure protective shroud on deck of ship.
- ✓ 5. Run pre-dive test program and verify correct operation of the following systems:
 - ✓ a. MiniROV LED lights
 - ✓ b. Science camera (adjust zoom, focus, shutter speed, and IR filter settings)
 - ✓ c. AJA HD recorder (record, stop, playback)
 - WJA ✓ d. Dye injector/vortex generator (disconnect tubing if dye injector being used, move piston, reset piston, set different increments)
 - ✓ e. Sizing lasers (measure separation at multiple distances)
- ✓ 6. Sync all components (including Science camera) with ship's NTP
7. Start MiniROV dive log

8. Initialize Giancarlo's CTD/DVL logging code
 - a. Double click on launch_procMAIN_miniROV.sh
 - b. Enable LOW COST, NAV SENS, and DVL on MiniROV's window
 - c. Start all drivers (ctrl+s on "drivers")
 - d. Verify that RTI-DVL (DVL output), VN-100 (Giancarlo's sensor), and miniROV-NMEA (survey out) is functioning normally
 - e. Start all loggers (ctrl+s on "loggers")
 - f. Verify that lcm_logger is functioning normally
 - g. Start all navigation (ctrl+s on "nav"; UUV-KF not expected to work)
 - h. Start all viewers (ctrl+s on "viewer") to see DVL and dead-reckoning output
 - i. Stop logging data (ctrl+t on "viewer", "nav", and "loggers")
 - j. Stop all drivers (ctrl+t on "drivers")
9. Check that all cable connectors and dummies are installed and tight.
- N/A 10. Check that all dye/vortex generator tubing is installed and tight.
- N/A 11. Open all dye valves and connectors.
12. Remove laser housing protective cover.
13. Check that the MiniROV tool sled is secure.
14. Check for tools left on and in MiniROV frame.
15. Remove MiniROV hold-down straps.

Deployment:

1. Start Giancarlo's CTD/DVL logging code
 - a. Start all drivers (ctrl+s on "drivers")
 - b. Start all loggers (ctrl+s on "loggers")
 - c. Verify that lcm_logger is functioning normally
 - d. Start all navigation (ctrl+s on "nav"; UUV-KF not expected to work)
 - e. Start all viewers (ctrl+s on "viewer") to see DVL and dead-reckoning output
2. Start AJA recorder
3. Deploy MiniROV, noting exact time and position of launch.
 - a. MiniROV launch time: 08:52 PDT
 - b. Latitude: 36° 46.70 deg
 - c. Longitude: 122° 0.23 deg
4. Record time it takes for MiniROV to submerge: submerged @ 09:01
5. Dive plan: refer to pre-dive cruise plan and note any changes on cruise plan

Recovery:

1. Check that the laser is powered down.
2. Change the Science camera settings (focus and others) to auto and zoom to wide.
3. Stop Giancarlo's CTD/DVL logging code (ctrl+t on all options)
4. Complete MiniROV dive log
5. Stop recording video with Aja
6. Recover MiniROV.
7. Secure MiniROV and DeepPIV on the ship deck.
8. Record the time that MiniROV is on deck: 13:40 PDT
- N/A 9. Close all dye injector/vortex generator valves.
10. Replace laser housing protective cover.

From: terri@mbari.org
Subject: Precruise 2015-7-27 02:00:00 PM (Web form precruise.asp)
Date: July 20, 2015 at 4:49 PM
To: terri@mbari.org
Cc: kakani@mbari.org

Precruise database load request

MBARI Project Number: 901506

Link to load this expedition into the database:
<https://www.mbari.org/expd/log/precruise.asp?step=1>

(Copy from the fields below into the web form fields)

ExpeditionID:
ShipName: rcsn
ShipSeqNum: 275
Purpose:
Test DPIV instrument on MINI ROV. Deploy MINI ROV to depth of 500m, track larvacean and prayidae targets and take flow measurements using DeepPIV. Conduct further testing with targets of opportunity as time allows.
ExpdChiefScientist: Kakani Katija
ExpdPrincipalInvestigator: Alana Sherman
ScheduledStartDtg: 2015-07-27 0700 Local Moss Landing time
ScheduledEndDtg: 2015-07-30 1530 Local Moss Landing time
EquipmentDesc:
1) MiniROV
2) MiniROV winch
3) MiniROV control van
4) Will need grove crane to demob upon early arrival at the dock
Participants:
Kakani Katija, Dale Graves, Alana Sherman, Chad Kacey, Frank Flores, Bruce Robison, Sarah Black, Alexa Bauman
RegionDesc:
PlannedTrackDesc:
Transit to Midwater Station 1; begin work there.
Depending on the availability of targets, transit to second site closer to Moss Landing (TBD)
Waypoints to be visited

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Order	Waypoint Name	Latitude	Longitude	Depth
1	Midwater 1	36.70000	122.05000	1600 m

in DDD MM.MMM format ==> 36 42.000 122 3.000