

Rockland Scientific MicroRider-EM (RDL) Operational Checklist (Pre-Cruise, Deployment, and Post-Recovery Procedures)

Instrument Serial Number: _____

Cruise / Project: _____

Operator(s): _____

Date: _____

1. PRE-DEPLOYMENT PREPERATION

General Reminders

- Contact Rockland Scientific at least 4 months prior to deployment if instrument servicing or sensor calibration is required.
- Review the Instrument Manual, especially sections titled "Assembly, Operations & Maintenance" (currently Sections 3-5).
- Inspect all sealing surfaces and O-rings. Replace O-rings if damaged or worn. Rockland recommends replacing O-rings annually regardless of instrument use.
- Ensure all required instrument tools, deployment gear, laptops, cables and spare parts & probes are included with the instrument and are in good condition.
- Rockland recommends shear probes are calibrated annually or more frequently if desired.
- Rockland recommends inspecting and checking probes against [Technical Note TN-067](#).
- Ensure the instrument is properly mounted on the deployment platform in accordance with manufacturer instructions (e.g. glider). The platform manufacturer should be consulted with any questions about the integration or mounting of the instrument.

Probe Port Checks

- Inspect SMC cables for damage or corrosion.
- Confirm each probe port contains greased O-ring & white ferrule.

- Verify O-ring and ferrule are installed in the correct order.

Electronics Bench Test

- Ensure test probes are installed in the correct port.
- Perform an electronics bench test.
- Use the Bench Test tool in Zissou Software and Rockland Bench Test Checklist to review the resulting p-file and confirm that the instrument electronics are in healthy condition and that all instrument channels are recording normally.

Reference: See Instrument Manual & [Bench Test Checklist](#) for more information.

Bench Test Completed Date: _____

Record Probe Serial Numbers

- Confirm deployment probes SNs.
- Update setup.cfg file on instrument with correct probe serial numbers & available probe calibration values (e.g. shear sensitivity from most recent probe calibration report).

Recommendation: Specify the correct shear probe sensitivity values in the setup.cfg file prior to deployment to ensure effective use of the instrument's real-time In-situ Data Processing (ISDP) capability (see TN-054 for details).

S1: _____

S2: _____

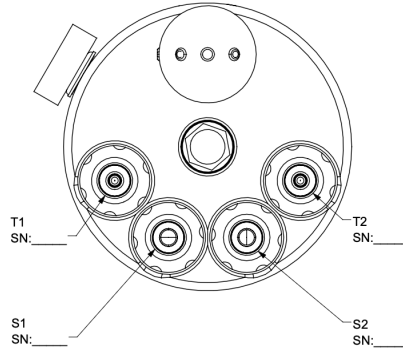
T1: _____

T2: _____

Additional Sensors: _____

Probe Installation

- Install probes in correct probe ports (S1, S2, T1, T2), ensuring each probe is properly connected to the SMC cable.



- Verify shear probe orientation (flat sections oriented 90° relative to each other), with S1 probe flat section oriented towards the EM sensor (Z-axis) and S2 flat section oriented to the right (Y-axis).
- Verify temperature probe orientation, with flat sections oriented 90° from pressure port (along Y-axis).
- Hand-tighten probe holders until snug, tighten an additional 1/8–1/4 turn using probe wrench.
- Don't forget to record or photograph the probe serial numbers prior to deployment.
- If not deploying right away consider covering the front bulkhead and probes with a protective cover (see image)

Important: Do not overtighten probe holders.



2. DURING DEPLOYMENT

Depending on the host platform and level of integration, remote monitoring of data quality and instrument performance may be available. Refer to the platform manufacturer's documentation for setup and integration guidance.

Rockland instruments can transmit two types of diagnostic output:

Channel statistics: summary values (mean and standard deviation) for each logged channel, reported in raw counts over 1 second intervals. This information can be useful to assess the health of the sensing probes during a deployment. Host platforms can continuously query and record channel statistics during a mission. These data provide a simple way to monitor probe performance during deployment.

Resource: Refer to the Rockland [Channel Statistics Checklist](#).

In-situ Data Processing (ISDP) output: onboard processing available on instruments equipped with the Rockland Data Logger (RDL). ISDP generates reduced data products suitable for telemetry (e.g. via Iridium), while full-resolution raw data remain stored on the instrument. Setup is defined via the `isdpcfg` file.

Resource: Refer to TN-054 or contact: support@rocklandscientific.com

3. POST-DEPLOYMENT

Initial Inspection

- Perform visual inspection of instrument.
- Inspect installed probes for damage.
- Inspect probe ports and cables.
- Ideally cover the front bulkhead of the instrument with probes installed to avoid any potential damage until you are ready to rinse & dry the instrument to remove probes.

If issues are observed, take photos & contact Rockland (support@rocklandscientific.com)

Instrument Cleaning

- Rinse instrument and probes with freshwater to remove salt residue.
- Allow instrument to dry completely.
- Dry front bulkhead and probe ports using lint-free wipes.

Probe Removal

- Remove sensing probes.
- Ensure SMC cables and probe ports are dry before sealing. Use lint-free wipes or swabs to remove visible moisture and prevent water from entering deeper into the front bulkhead.
- Dry cables with lint free wipes if necessary.
- Install test probes.

Important: *Water trapped inside probe ports may cause oxidation of SMB connectors and could degrade signal quality during future deployments.*

Post-Cruise Maintenance

- Perform maintenance procedures in accordance to the instrument manual.

Tasks may include:

- Inspect sealing surfaces
- Inspect or replace O-rings
- Clean probe ports
- Inspect cables and connectors

Pre-Storage Bench Test

- Install test probes.
- Perform electronics bench test.
- Confirm instrument readiness for storage or next deployment.
- Bench Test Completed

Date: _____ Operator: _____

Additional Notes _____

