Bulletin to Oceanscout Pilots
June 2, 2025

This bulletin contains information on known, minor issues in the current software version that have ramifications for piloting. It includes explanations and recommended solutions. These issues are well-understood, generally do not pose risks to vehicles, and will be fixed in future releases.

- Recording PAM on ascent may result in overshooting turnaround depth during inflection at the bottom of yos.
    - **Explanation**: If you set your PAM to record on Ascents, the glider will likely overshoot its specified turnaround depth by several meters, potentially contacting the bottom or triggering a maximum depth abort on deep yos if you are diving close to those limits. The PAM sensor takes time to turn on, and events in the bottom inflection behavior are currently sequenced such that turning on the PAM delays the turnaround movement.
    - **Recommendation**: Only record PAM on Descent or Both (“both” keeps it on through the inflection). Or, if recording on Ascent, have your glider turn around well before the bottom (or 200m depth) by setting a shallower dive depth. If you are following terrain using the altimeter, use an altimeter turnaround of 10+ meters.
- You may see the alert “No Response to Health Monitor”.
    - **Explanation**: A minor bug in communication timing between processors trips a sensitive error monitor resulting in this occasional alert. It is almost certainly not indicative of a real problem with the glider right now.
    - **Recommendation**: Ignore it.
- Quiet time hovers at 200m may trigger maximum depth abort.
    - **Explanation**: The glider will naturally drift while neuterally buoyant during quiet times at the bottom of yos. If you are doing maximum depth dives to 200 meters with quiet times at the bottom points, just a few meters of drift could bring the glider deep enough to trigger a maximum depth abort.
    - **Recommendation**: Don’t do quiet times on 200m yos. If you are making quiet recordings, limit depth to 175m or ideally shallower.

- Default altimeter turnaround is only 3 meters, and easy to forget to set.
    - **Explanation**: The current default altimeter turnaround is not very conservative depending on the operational environment.
    - **Recommendation**: Set an altimeter turnaround of 5+ meters if possible. Make sure to check altimeter turnaround settings for travel segments. If you are operating in very shallow water where every meter of dive counts, it is OK to set a very short altimeter turnaround (as small as 1m) but please understand that this does invite some risk of bottom contact.
- If your compass is not calibrated, the first several dives of a mission may be off-course.
    - **Explanation**: The Oceanscout compass will automatically “learn” and improve its calibration while diving, but a good calibration requires several dives (or manual calibration). If your glider has no calibration or an imperfect one, the first few dives may be off-course. It will then correct itself and continue the mission normally. Once a good calibration is achieved, it will be saved for future use and this issue shouldn’t come up.
    - **Recommendation**: If this occurs, and conditions allow, simply let the glider to continue for 2-3 dives. It will improve its calibration and head back to course within a few surfacings. However, consider hazards near your starting location and that the glider could travel relatively far if you are doing many yos in deep water. If your glider is off-course for more than 4 dives, or its heading strays mid-mission, the cause is likely something else such as current.
- The glider may occasionally trigger a “No Communications Timeout” abort when starting a new mission immediately after another.
    - **Explanation**: This is the result of a small bug. It is not a real nocomms abort, as evidenced by the fact that you will have had recent telemetry.
    - **Recommendation**: If this happens, switch your glider to Idle and re-deploy the mission. Note that if you have a very long idle or abort telemetry interval setting this could cause significant delays, so check to ensure that your idle and abort telemetry interval and check message interval are appropriate for your mission.
- Bug when transmitting CTD data from the first yo of dives
    - **Explanation**: There is a bug that causes the following behavior: If the glider is set to transmit CTD data on ascent of the first yo of a dive, the CTD readings for the last yo in the dive get replaced with the readings from the first yo, which looks

confusing. The on-board data log isn't affected, only the transmitted data preview.

    - **Recommendation**: When setting up your segment definitions, set your CTD sampling protocol to transmit data from the 2nd or higher yo.

- General Reminders:

    - The Oceanscout user manual has been updated and expanded. It includes better documentation of existing functions and brand new features. It is available here: https://doc.clickup.com/24539728/d/h/qcwjg-2391/298590cf14058a1 We recommend reviewing it prior to your next deployment.

    - Telemetry intervals are important to understand and set. When setting up your glider for a mission, be sure to check and set reasonable telemetry intervals for Idle, Abort, and Recovery modes as your mission requires. Long telemetry intervals introduce delays in commanding your glider in these modes. Short telemetry intervals will result in faster control but slightly higher power use and Iridium fees if drifting on the surface in these modes. Please refer to the newly updated **Telemetry Intervals** information in the Firmware section of the user manual.

    - Make sure to set reasonable definitions for travel segments (dotted line between a selected vehicle and first waypoint). It is easy to forget this when deploying a mission. The defaults may not be appropriate for every operational environment.

    - Testing your glider by running it attached to a safety line is acceptable if necessary, but this will impact control performance. Your glider will complete the basic motions of diving, but it is unlikely to achieve realistic glide rate and pitch with the added drag of a line or buoy.

As always, if you have any questions, concerns, or suggestions please do not hesitate to reach out to your Hefring support team via Slack or email.