

Cruise Summary (08/21/2024 - 09/5/2024)

AX18 - Sanderling Ace

Technical rider: Albert Buhr

The equipment was set up on board the *Sanderling Ace* by the rider Albert Buhr in Zarate harbor, Argentina, on 22 and 23 August 2024 while the ship's departure was delayed. It was discovered that the UPS wasn't working at all, so the equipment was connected directly to the ship's power supply. Then the laptop refused to recognise GPS data from the antenna, which was eventually solved when the rider simply swapped it with the backup laptop.

The ship finally sailed into open water on 24 August, with drops scheduled to start early on the 25th, but these were delayed due to autolauncher connection problems. After hours of troubleshooting it was discovered that the shroud/casing covering the cat5 cable connector was preventing proper contact with the autolauncher's port. With this fixed, readings were still not coming through, but this was solved by redoing the grounding (the rider learned that even the slightest rust can cause problems, and that filing down to silver-looking metal is required).

And so on the afternoon of the 25th, high-density deployments proceeded uninterrupted with good profiles, every 10km. On 26 August it took some time and troubleshooting to correct the settings for the transmitter to send transmissions.

On the afternoon of 27 August the autolauncher stopped releasing probes. Manual launches weren't working either, and hand launcher weren't recording data. After almost 8 hours of troubleshooting the system worked again when not only the MK21 was swapped out with its backup, but the backup was power cycled. Low density drops then proceeded without incident... until the early hours of the 30th when the autolauncher once again stopped releasing probes, and the same problem had seemingly returned. Troubleshooting over the next few days, during which every cable and every part of the system was systematically swapped out and tested, until the conclusion was reached that the ship's "dirty power" had damaged both MK21s, beyond the capacity of the rider to repair.

Unfortunately only about a third of the expected data was able to be collected.

The following equipment issues will need attention:

- * supply new nuts and bolts to replace the ones badly rusted on the autolauncher mount
 - * solve laptop (CD0004097473) not reading the antenna
 - * fix both MK21s
 - * perhaps print and supply in one of the gear boxes a copy of the updated *AOML XBT v2.pdf* (discard the outdated version) for ease of reference by future riders
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General Comments

The rider Albert Buhr writes: "I was very disappointed not to be able to complete the data collection, but with more problems on this transect than on any of my previous five combined, I certainly learned a lot. I am deeply grateful for the patient and calm assistance from Pedro and Zach at all hours to help troubleshoot the multiple issues.

The captain, officers and crew of the *Sanderling Ace* showed great hospitality, kindness and consideration throughout the trip, while the ship's steady speed and convenient layout make it a great choice for future transects.
