

Pop-Up Recovery Cruise Report JR140

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Recovery of Pop-Up in Bird Island Sound (64):

On the 28.12.2005 @ 18:35 GMT (all following times are in GMT) on position: -54.0338 S, -38.0692 W, the hydrophone and transducer were deployed and the burn command was sent twice following the instructions given by Cornell. The weather was good, with calm seas (2-3) low winds and good visibility. No response from the Pop-Up was received, so further burn commands were sent. After several burn commands over a 15 min period (estimated time for the Pop-Up to surface) the hydrophone and transducer were recovered without being able to establish any communication with the Pop-Up. Thereafter a 30 min intensive search for the moorings on the surface was carried out but no radio signal or visual sighting was reported. Therefore after the 30 min the search was abandoned and the ship left the vicinity.

Recovery of 2x Pop-Up around Western Core Box positions (34 & 43):

On the 02.01.2006 @ 21:55 on position: -53.8702 S, -37.8838 W for Pop-Up 43, the hydrophone and transducer were deployed and the burn command was sent twice following the instruction given by Cornell. Again the weather was good, with calm seas (2-3) low winds and good visibility. After getting no response from the unit, the same procedures as for the first recovery were conducted. But again no communication could be established and after 45 minutes at the location the search was abandoned and the ship left the vicinity to move off to recover Pop-Up 34. @ 23:32 the ship was in position to deploy the hydrophone and transducer to recover the unit 34. Again the burn command was sent twice initially, but again no response was received and a series of further burn commands over a 15 min periods were sent, followed by a 30 min intensive search for the mooring. No radio signal or visual sighting was reported therefore the search was abandoned and the ship left the vicinity.

Recovery of 2x Pop-Up on main Western Core Box moorings (05 & 65):

The two Pop-Ups on the two Western Core Box moorings were successfully recovered together with the moorings. The unit 55 was recovered on 28.12.2005 @ 22:04 at position -53.8001 S, -37.9334 W. The unit 65 was recovered on 28.12.2005 @ 23:03 at position -53.8012 S, -37.9413 W. No visual damage was detected and the units seem to be in good shape.

Shipment of the two recovered Pop-Ups no: 05 & 65:

The two recovered Pop-Ups were taken out of their mooring frames and briefly cleaned before finally packing into their shipping containers following the instructions provided by Cornell. No further work like powering down and static charge was carried out, as we believe there was no battery power left in the units. Note that the hydrophone is loose in the shipping container and the two hard heads are held together by only 2 screws, this is because the original Pop-Up design had to be

changed to fit the hard heads onto their metal frames on the big moorings. So care should be taken when the Pop-Ups are taken out of their shipping containers.

Recommendations:

- given the fact that no ship time was allocated for the recovery of the Pop-Up units, there was no time for any other alternative means of recovery (i.e. grappling the units) so for the future we strongly recommend that ship time should be allocated for the recovery to take the time pressure of the ship and the people.
- the given instrument settings with a time window of only 6 weeks for recovery is total inappropriate for our work in Antarctic waters. This has to be changed before any other stand-alone Pop-Up unit is deployed!
- Relying on a burn through wire in cold Antarctic waters with limited battery capacity is not the best solution. Therefore we highly recommend fitting the stand alone Pop-Ups with an independent release unit which will make recovery possible at any time over more than a year. An independent release unit would also solve both problems: a) the short time window for recovery and b) the limited battery capacity of the Pop-Ups. If an independent release unit is fitted further modifications will be necessary to provide enough buoyancy to bring the units back to the surface with the added weight of the release.
- The recovery rope with a small buoy should be prepared back in the UK or USA and not on the ship at the last minute as last time the units were delivered with no recovery line at all.