AFI 3/16 mooring cruise report *JR 107*

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Background, Aims and Methodology:

The background, aims and methodology of the AFI 3/16 project: **Moorings to investigate intra-annual variability in krill abundance and water-mass physical characteristics of South Georgia** is described in detail in the JR 82 cruise report

Recovery and redeployment during JR 107:

In order to avoid the problem experienced during the 2003 winter when the deep mooring was snagged by a longline set for Toothfish, both moorings were deployed at the shallow site over this period. The 'Deep Mooring' being placed 200m west of the 'Shallow'.

The recovery process started at 0845 GMT of November 20th with EK 60 acoustics on the dropping point of the 'Shallow Mooring' position for 1 hour from 08:45 to 09:45 GMT followed by a CTD to 200m, 2 cables from the dropping position. The weather was fine (force 2-3), calm sea, and good visibility. The releases of the 'Shallow' water mooring were activated at 11:18 and just one minute later the buoy surfaced. Thereafter the whole mooring was recovered without any problems. After clearing the deck the 'Deep' mooring was released at 11:58, this surfaced at 12:00. Recovery of the mooring was very quick and efficient again. At 12:20 in just 1 hour both mooring were successfully recovered.

After data download, the required battery replacements and a quick check and maintenance of the mooring rigs the shallow water mooring was successfully redeployed **at 53° 47.69'S & 37° 56.31'W on 20.11.2004, 19:17 GMT**.

Immediately afterwards the Deep mooring was prepared for redeployment at the **deep site**, **53° 30.70'S & 37° 51.00'W,** this was done **on 20.11.2004, at 22:48 GMT.**

Both deployment took place as described in the second deployment report in JR96 with the changes described in the JR100 mooring cruise report: To control the release of the weights, they were lowered over the stern with the starboard Effer crane on a strop and a sacrificial rope attached to the weights was threaded through two deck eyes. The weights were then lowered down until the sacrificial rope took up the weight. Then the strop was taken of. At the release point the rope was cut on top of a piece of wood between the eyebolts using an Axe.

The initial idea to use a Quick Release Hook was abandoned after it unexpectedly released the weight while it was being lowered over the stern. Luckily the strop was able to hold the weight, and nobody was hurt by the Quick Release Hook when it 'flew' back on deck. (This was the subject of an AINM report.) We have concluded that the quick release hook would be useful where equipment is being released from a crane or gantry, but is not suitable where release is made from a deck anchor point. We should stick to the method outlined above, which is efficient, safe and quick!

Data verification:

All 4 instruments have worked perfectly. The CTD data indicate that the shallow water mooring had been sitting at around 199 m and the deep mooring at around 185. Both ADCP data are showing a clear vertical migration of zooplankton over the last deployment. All instruments have worked all the time except the deep mooring CTD, which stopped logging data 2 days before recovery. Overall, this was a very good performance by the instruments resulting in a nice dataset.

Work carried out:

WCP:

- No work was necessary (Instruments just back from ASL)

CTD:

- Data download
- Main O-Ring replaced
- Batteries replaced

ADCP:

- Data download
- Main O-Ring replaced
- Batteries replaced

NOVATEC beacons

- Batteries replaced

ARGOS beacons

- Batteries replaced

Releases

- Batteries in all 4 releases replaced

New Instrument settings (general):

CTD

shallow:
start time: 20.11.04
sample interval: 240 sec.

deep:
start time: 20.11.04
sample interval: 240 sec.

ADCP

Shallow:
Start time: 20.11.04
Duration: 180 days
Sample interval: 4 min
Pings in interval: 7

Deep:
Start time: 20.11.04
Duration: 180 days
Sample interval: 4 min
Pings in interval: 7

WCP

Shallow:

```
start time: 19.11.04
burst_resolution = 1
ping_length = 600
lockout_range = 0
gain = 1
max_range = 200
burst_multiplier = 120
burst_count = 18
bin_size = 8
end time: 27.04.05
```

Deep:

```
start time: 19.11.04
burst_resolution = 1
ping_length = 600
lockout_range = 0
gain = 1
max_range = 200
burst_multiplier = 120
burst_count = 18
bin_size = 8
end time: 27.04.05
```