Scottish Marine Biological Association

Dunstaffnage Marine Research Laboratory

CRUISE REPORT

R.R.S. CHALLENGER

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SCOTTISH MARINE BIOLOGICAL ASSOCIATION

Dunstaffnage Marine Research Laboratory

Cruise Report

RRS CHALLENGER

Cruise 15/1980

29th September - 13th October

RRS CHALLENGER Cruise 15/80

Duration of Cruise: 1000 h 29 September - 1200 h 13 October.

All times BST.

Locality: Rockall Channel and Scottish Continental Shelf.

Staff: R. Bowers
D. Meldrum
D. Edelsten
N. Pascoe
Mrs. C. Petre
J. Cherriman)
G. Phillips) I.O.S., Wormley
B. Knowles)
P. Riddy, Southampton University

Aims:

(1) To service SMBA current meter moorings at stations M, R and F.

(2) To lay an SMBA current meter mooring at station P.

(3) To recover I.O.S. moorings at sites I1, I2, I3 and I4 and to set replacement moorings.

(4) To work the Anton Dohrn seamount CTD section and other CTD sections as time permits.

(5) To collect 50 litre water samples for radiocaesium analysis and CTD profiles at standard positions between the Sound of Mull and the shelf-edge.

(6) To take cores in the Northern Rockall Trough for Dr. A.I. Rees.

Narrative:

29th September: Sailing at 1030 h was postponed due to high winds and at 1230 h was postponed until 0200 h on 30th September. We sailed at 0930h and headed for the Sound of Mull by way of the Sound of Islay and arrived at C1 off Ardnamurchan on 1st October. The weather being poor, the ship anchored in Loch Sunart but the anchor kept dragging, and so the ship sailed at 1200 h to

Scallastle Bay where it stayed overnight. On the 2nd October, the weather moderated and the ship sailed at 0630 h arriving at station C1 at 0900 h. The caesium section was then worked being completed at station C10 at 0200 h on 3rd October. We then set sail for I2 stopping en route at 1900 h to do wire tests on an acoustic release. During this test the hydrographic wire caught on the spooling gear and was damaged. As a result, 1001 metres of wire were cut off. On completion of the test we sailed on, arriving at I2 at 0500 h on 4th October. The mooring was located and released at 0820 h and recovered by 0937 h. The wire from the mooring was then thrown away and the new mooring laid between 1120 h and 1312 h. We then set sail for I1, stopping at 2015 h to test another acoustic release, and arrived at 1430 h on the 5th October, being restricted to 2-3 knots overnight by the sea state. I1 was released at 1457 h and was recovered by 1546 h. The new mooring was laid between 1750 h and 1900 h. We then set sail for I4, stopping at 2200 h to test another acoustic release. On arrival at I4 at 0815 h on 6th October the mooring could not be located. A box search was carried out but nothing was found. It was concluded that the mooring had broken free, and so the replacement mooring was commenced at 1412 h. However, when the anchor and acoustic release and first current meter were going out, the release struck against the stern and one of the pyros fired - releasing the anchor and causing the chief officer to jump. Whilst a new anchor was being rigged a CTD dip was done to provide a check on the current meters to be deployed at this position which were equipped with a salinity channel. On completion of the dip the mooring was laid, being completed by 1630 h. We then steamed 2 miles S.E. and did a core, but when it reached the surface it was empty. This was probably due to the

lid on top of the core tube being fully open allowing the contents to wash out. A restraining wire was then fitted to the lid to restrict its opening and the core catcher surrounded with a plastic bag. At 1900 h another dip was done in 1840 m depth and this was successful. At 2030 h we sailed for I3 in deteriorating weather conditions and remained hove to in the vicinity of I3 on 7th October. By 1600 h on 8th October it was considered good enough to lift the mooring but not to re-lay. The mooring was therefore recovered by 1717 h and course set for station M which was reached at 1030 h on 9th October. Unfortunately, when this mooring was located it was found to be lying on the bottom. Conditions were still too rough to consider laying a mooring, let alone drag for one, and so we set sail from station R at 1100 h arriving there at 1700 h. The mooring was recovered by 1815 h but the subsurface float was partially flooded.

The new mooring was laid at 1945 h and, the weather having moderated, we sailed for station M at 2015 h which we reached at 0550 h on 10th October and hove to waiting for daylight. The mooring was laid at 1110 h and completed at 1220 h. We then sailed off for 2 miles and did a core in 2340 m depth. This was successful and at 1410 h we set sail for the site of the corrosion current meter mooring off South Uist. This mooring should have been recovered on Cruise 14b/80 but they were unable to find it. We therefore went there to see if we could find it since we had the advantage of wider beam search equipment. We arrived at the position at 2336 h and from then until 0830 h on 11th October did a box search with a lane separation of 400 metres with the box sides approximately 4 miles long. No trace of the mooring was found.

At 1830 h we therefore set sail for the Barra Fan to check the I.O.S. experimental mooring. This was detected at 1611 h and at 1630 h a CTD dip was commenced 2 miles from the mooring. Attempts to get oxygen samples from the depth of the mooring were foiled by the extreme wire angles encountered in poor weather conditions. The station was completed at 1730 h and course was set for Liverpool which was reached at noon on 13th October.

Results:

Aim (1) The shelf current meter mooring at Station R and the deep mooring at Station M were both located but only R retrieved. This yielded good records indicating that the buoyancy left in the sub-surface float was sufficient to keep the mooring upright.

Both moorings were relaid.

Aim (2) No mooring was laid at P since no gear was available.

Aim (3) Moorings I1, I2 and I3 were recovered and all current meters had functioned satisfactorily except one on I3 which had leaked a little and rusted up the tape recorder capstan. Moorings were laid at I1, I2 and I4.

Aim (4) None of the Anton Dohrn seamount CTD section was worked because of time lost due to poor weather.

Aim (5) The complete caesium section was worked satisfactorily with the exception of not being able to do a CTD at station C10 due to weather conditions.

Aim (6) Two cores were taken in the Rockall Trough at depths of 1840 metres and 2340 metres. Once again the limited number of cores taken was due to weather conditions.

Besides these primary aims, a survey for the corrosion current meter mooring was undertaken. Although this did not reveal the mooring it was combined with a bathymetric survey which will be very useful for future moorings.

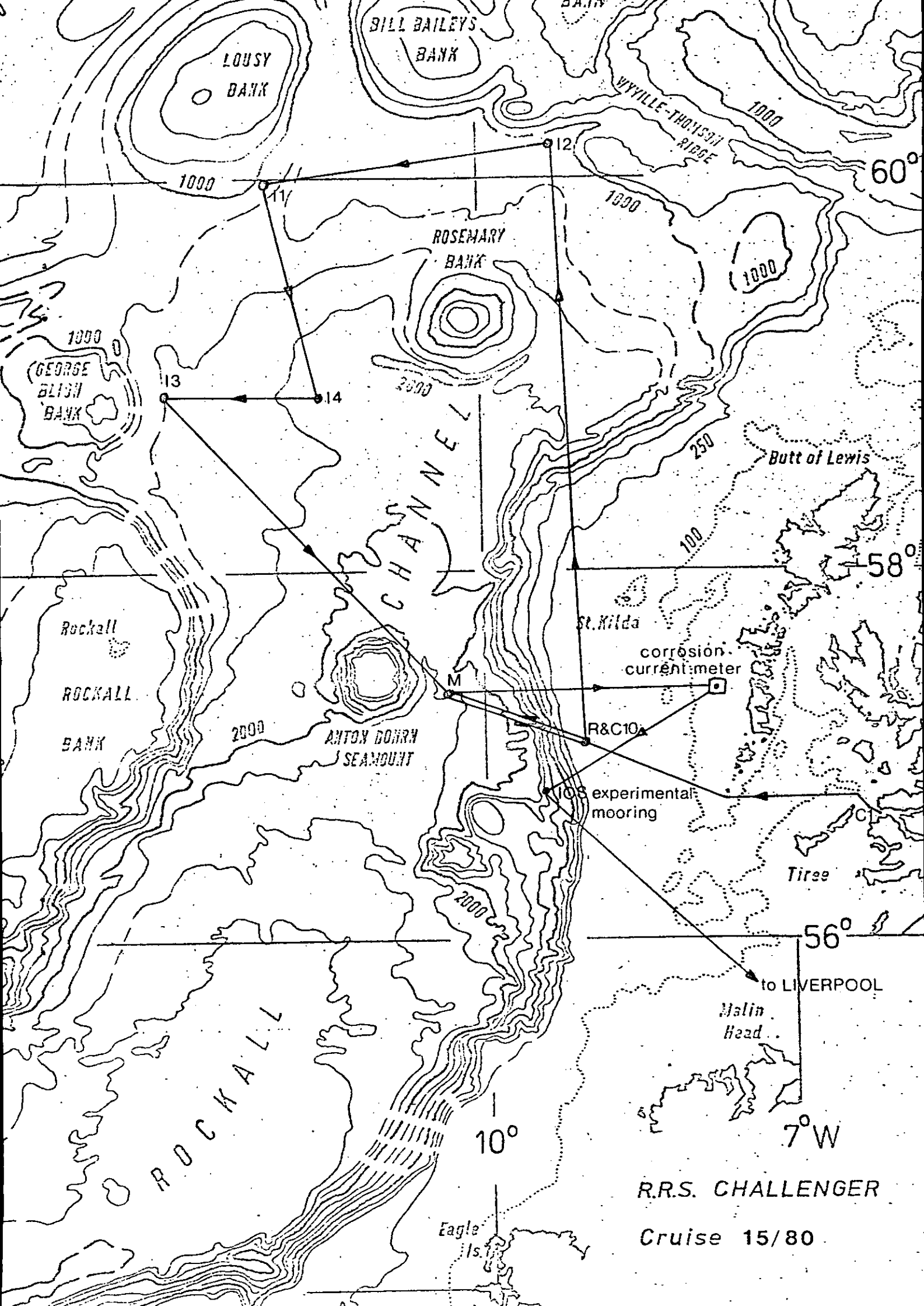
Checks on the I.O.S. experimental mooring were undertaken and salinity and temperature data at the depth of the mooring obtained.

Acknowledgement:

Our thanks are due to Captain G. Selby-Smith, his officers and crew for their help on this cruise.

R. Bowers

20th October, 1980.


LOUSY BANK
BILL BAILEYS BANK
WYVILLE-THOMSON RIDGE
1000
12
11
60°
ROSEMARY BANK
1000
1000
1000
GEORGE BLIGH BANK
13
14
2000
CHANNEL
250
Butt of Lewis
100
58°
Rockall
ROCKALL BANK
2000
ANTON DOHRN SEAMOUNT
St. Kilda
corrosion current meter
M
R&C10
IOS experimental mooring
Tiree
2000
56°
to LIVERPOOL
Malin Head
ROCKALL
10°
7°W
Eagle Is.
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