MIAS 1892

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Report on "RRS John Murray" cruise 12/77
27 September-20 October 1977

This was a combined cruise between MMAG and AC units, the first leg being devoted to natural radioactivity and neutron activation surveys in the Western English Channel. The second leg consisted entirely of geochemical sampling in the Northern North Sea.

Scientific personnel embarked at Barry, but sailing was delayed by visits of parties from the Geological Society who had been holding a conference at Swansea University. This had been previously arranged, and John Murray eventually left Barry at 1800 on 27.9.77 and headed towards the area South East of the Lizard bounded by Lat. 49° 35'N-49° 50'N and Long. 4° 09'W-4° 45'W. Gale force 9 winds provided a very uncomfortable passage for a first night at sea, and most of the scientists and crew were incapable of carrying out any useful duties. Moderating conditions enabled work to commence on schedule at 2330 on 28.9.77 and several traverse lines of natural radioactivity were completed, using the geochemical Eel, before worsening weather forced abandonment of operations at 2400 on 30.9.77. The timely break enabled Harwell staff to introduce a Californium 252 source, ahead of the detector in the Eel, and work was resumed at 0700 on 2.10.77. Neutron activation analysis continued until 2400 on 3.10.77 when the source was removed and normal towing resumed. Abnormal Eel wear (two 100 ft hoses used up) forced an end to towing at 0700 on 4.10.77 and some geochemical sampling began. Problems associated with an inexperienced deck crew and operational difficulties, limited sampling to gravity coring only, although during passage to Aberdeen the hydrographic winch was repaired satisfactorily by ship's engineers.

Rendezvous off Lowestoft was kept at 1300 on 7.10.77 to pick up a member of CSUN and to change over Harwell staff. Six geochemical stations were occupied during the night of 8/9-10.77, about 100 miles East of Aberdeen, to complete the Dogger Forties programme initiated last year, and John Murray arrived at Aberdeen for the mid-cruise break at 1700 on 9.10.77. Harwell and IGS staff rearranged with myself taking over as Senior Scientist from Mr J Miller of MMAG, and we sailed from Aberdeen for sea area Moray Firth at 1800 on 10.10.77. Sampling commenced at 2200 and continued until 0300 on 12.10.77 when southerly gales made the vessel roll so badly that station keeping was impossible and sampling dangerous. No more sampling was possible until 1500 on 13.10.77 by which time we had managed to return to the lee of the Moray Firth. Weather in the open sea continued to be bad but work was possible until 0300 on 16.10.77. Sampling ceased until daylight but thereafter only four stations were possible due to 50 knot winds, and the fact that the OC Decca chain was non-operational for six hours, necessitating the use of radar fixing only. Gravity coring was abandoned as too dangerous. Sampling was completed at the Eastern end of the Pentland Firth at 1515.

Geochemical Eel water-towing was started off Dounreay, along the North coast and down to the Kyle of Lochalsh, where it was hauled in as per Admiralty instructions. The Eel was deployed again in the Sound of Sleat and the traverse was continued, dog-legging from Chicken Rock at the Southern tip of the Isle of Man, into Walney Island off the coast of Cumbria. (Requests from RVB to go to the aid of the "Edward Forbes" were not necessary, as she had managed to remove the current meter array from her rudder assembly by grappling). The Eel was finally recovered off the Pembrokeshire coast at 2200 on 19.10.77. John Murray docked at Barry at 1100 on 20.10.77 having lost 3½ days to bad weather.

Operational Comments

Various malfunctions of electronic equipment occurred but these were kept under constant attention by Mr P D Roberts of MMAG. The failure of the hydrographic winch was possibly due to the reasons already outlined, but more likely due to lack of maintenance, although the second leg was not jeopardised in any way by this. A gravity corer was almost lost due to chafing of the wire hawser strands on the recovery trough. Repairs were affected by welding teams at Aberdeen. Improvements were carried out on the stainless steel cone dredges, by welding an eye on the bottom of each bucket, to take a chain to weigh the device down. This helped deployment, towing and recovery. Although only 63 of the planned 90 stations were completed, this is considered to be a good proportion considering the distance covered and the time of year.

Food on this trip was below average for the first leg and much below average for the second. Scientists' and crews' feelings on this situation have already been communicated to RVB. The help given by deck officers, engineers and seamen on this cruise was greatly appreciated.

R.A. Nicholson

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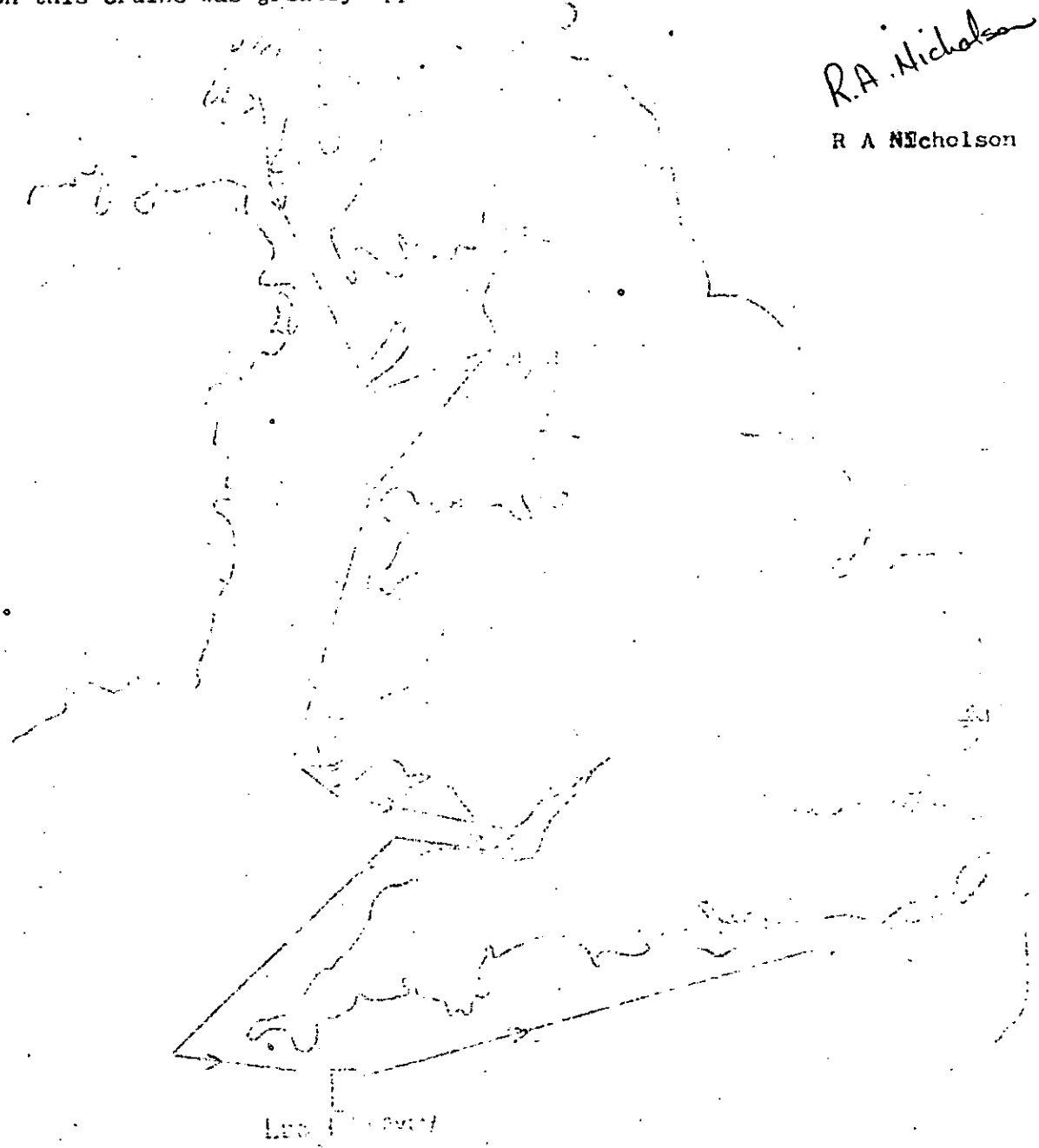
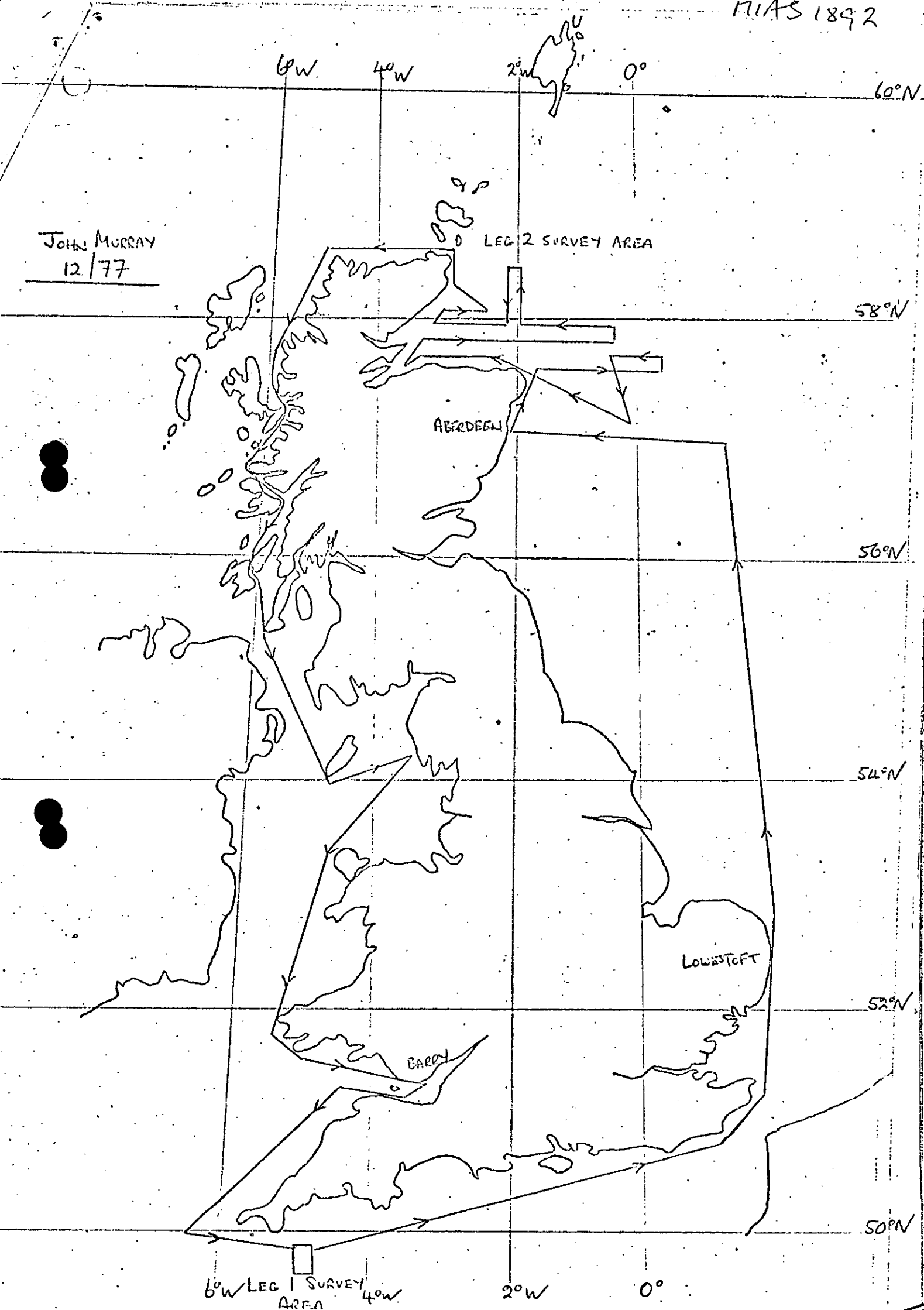


MIAS 1892


6°W
4°W
2°W
0°
60°N
58°N
56°N
54°N
52°N
50°N
JOHN MURRAY
12/77
LEG 2 SURVEY AREA
ABERDEEN
LOWESTOFT
BARRY
LEG 1 SURVEY AREA