CRUISE REPORT

FREDERICK RUSSELL CRUISE 10 / 1982

Participants

Miss P. Course	MBA	
Miss A. Cronin	University of Galway	
C. Griffiths	IOS/MBA	
R. Head	MBA	(1st leg only)
P. Holligan	MBA	(2nd leg only)
B. Le Cann	University of Brest	(2nd leg only)
G. Mardell	IOS/MBA	
R. Pingree	IOS/MBA	Principal Scientist

Narrative

1st Leg

The vessel sailed on the evening tide, Monday 12th July. Continuous measurements of sea surface temperature, salinity, chlorophyll 'a', suspended sediments and nutrients were made through the non-toxic pumping system whilst steaming. A vertical zooplankton net was completed at station A1, then we proceeded at full speed to Shamrock Canyon at the shelf-break to recover one of the four Argos drifting buoys which were deployed on cruise 8. The buoy positions 12 hours previously were relayed to us from MBA via the radio telephone link. The directional receiver equipment on board picked up Argos buoy 1816 at a distance of approx. 4 miles and homing in on the signal presented no problems. This buoy was recovered and redeployed near mooring 063 with a thermistor chain and logger beneath.

We then proceeded to check moorings o63 - 067 that had also been deployed on cruise 8. There was no sign of 063 by sight or acoustically. 064 was sighted but the acoustics were not responding. Neither 067 nor 065 could be located, so a thermistor chain was attached beneath a spar buoy in between 065 and 066. We arrived at 066 on the evening of 14th July and the flashing light was eventually seen about 2 miles off position. It turned out the sat. nav. was in error by 1.7 miles whilst the Decca was correct. The acoustics on 066 were interrogated and found to be functioning correctly. We then steamed back to 065 and 067 using Decca and both were found to be on position. The spar buoy on 067 was missing and only astute observation by the watchman on the bridge enabled us to

locate the sub-surface buoy which was just on the surface. The complete mooring was recovered including the spar buoy which had sunk and looked like it had imploded.

We steamed north back to Shamrock Canyon and recovered Argos buoy 1819 on 15th July. A line of 10 STD stations were completed across the shelf-break, Argos buoy 1819 being redeployed at station 5. We then steamed to Argos buoy 1818 and recovered it at 1920 on 17th July. The vessel then returned to mooring position 063 along a zig-zag course to intersect the shelf-break. The acoustics were interrogated on 063 without any success. Mooring 068 (with Argos buoy 1818 attached) was laid on the slope within half a mile of 063 in 835 metres to provide some current data at this position should 063 be lost.

The vessel then steamed south along the shelf-break to Santander to arrive 1800 on 19th July. B. Le Cann and R. Head disembarked, P. Holligan embarked.

2nd Leg

Departed Santander 0800 21st July. We steamed along track shown approximately parallel to the north Spanish coast to Cape Finisterre, then north-west to Biscay Sea Mount, then north-east along a line, regularly dropping X.B.T.'s, joining up with the line of STD stations 1 - 10 that were completed along Shamrock Canyon on the 1st leg. A dhan buoy was then anchored at the head of Shamrock Canyon as a positional fix for the next set of STD dips, which were done every 15 minutes for 14 hours. The dhan buoy was left on position and we steamed to Argos buoy 1817 and recovered it successfully on 24th July. We then went back to Shamrock Canyon ∿ 20 km west of the anchored dhan buoy. Another dhan buoy was laid for positional fixing but this time had a drogue attached and was left drifting. STD dips were then carried out near this dhan buoy again every 15 minutes for 14 hours. The dhan buoy and drogue were then recovered and drifting buoy 1817 was redeployed on 25th July.

The ship then steamed south to the mooring area to recover the moorings. The thermistor chain between 065 and 066 was recovered first with no hitches. At 066 the acoustics were functioning but there was no sign of the surface markers. An attempt was made to release the acoustics but the sub-surface buoy did not pop up. It was decided to grapnel for the ground line later, so we proceeded to mooring 065 which

was recovered intact on 26th July. There was no sign of 064 so we steered on to 068. The release was fired and the mooring recovered successfully. We then steamed south-west to the last known position of drifting buoy 1816 and completed a box survey trying to locate it without any luck. The last fix was 1½ days old and turned out to be the last fix ever received from this buoy, it was presumed sunk or run down.

We then steamed back to 066 to commence grapnelling. This was done for seven hours on 27th July before the ship came fast. The ground line was recovered but because the acoustic release had fired in the morning it parted from the chain weights as it was lifted off the bottom. The rest of the mooring was recovered, the spar buoy had obviously been run down. As we were running out of time the rest of the mooring, with the current meters attached, had to be left. The acoustics were still working however so we are hopeful of recovery at a later date.

Grapnelling was resumed at 064 until midnight on 27th July. The vessel then steamed north along the shelf slope and back south along the shelf arriving back at 064 for another six hours until the grapnel was lost after seemingly being caught on another warp. (We were informed after the cruise that current meters 6455 and 3368 on 064 had already been trawled up and were ready for collection at the Marine Laboratory in Concarneau, France). The vessel then proceeded to 063 where a grid search over 4 hours was completed, continually transmitting to try to switch the acoustic release on, this was unsuccessful. We left the area at midnight on 28th July and completed some more STD stations near Shamrock Canyon. The anchored dhan buoy was recovered and a series of X.B.T.'s were done across the shelf-break. STD and hose stations were done at E5 and A1 on the way back to Plymouth. Docked Millbay 0900 on 30th July 1982.

COMMENTS

Hydrographic Winches

Throughout the cruise there were problems with the STD winch readouts. The wire out readout on the winch kept jumping although the one in the lab seemed to be ok. However both readouts are far too small to read easily. The other fault is that the rate meters are absolutely useless at our normal operating speeds. It is important for our work that the STD is lowered and hauled at the same rate. This could not be achieved satisfactorily due to a 1/3 metre/sec not registering on the gauge, making it very difficult for the winch operators to maintain a constant rate.

Communications

Communications between after-deck, winch operator and bridge whilst doing any deployment or recovery work are very poor. This can lead to unnecessary instrument damage as well as being a hazard to personnel.

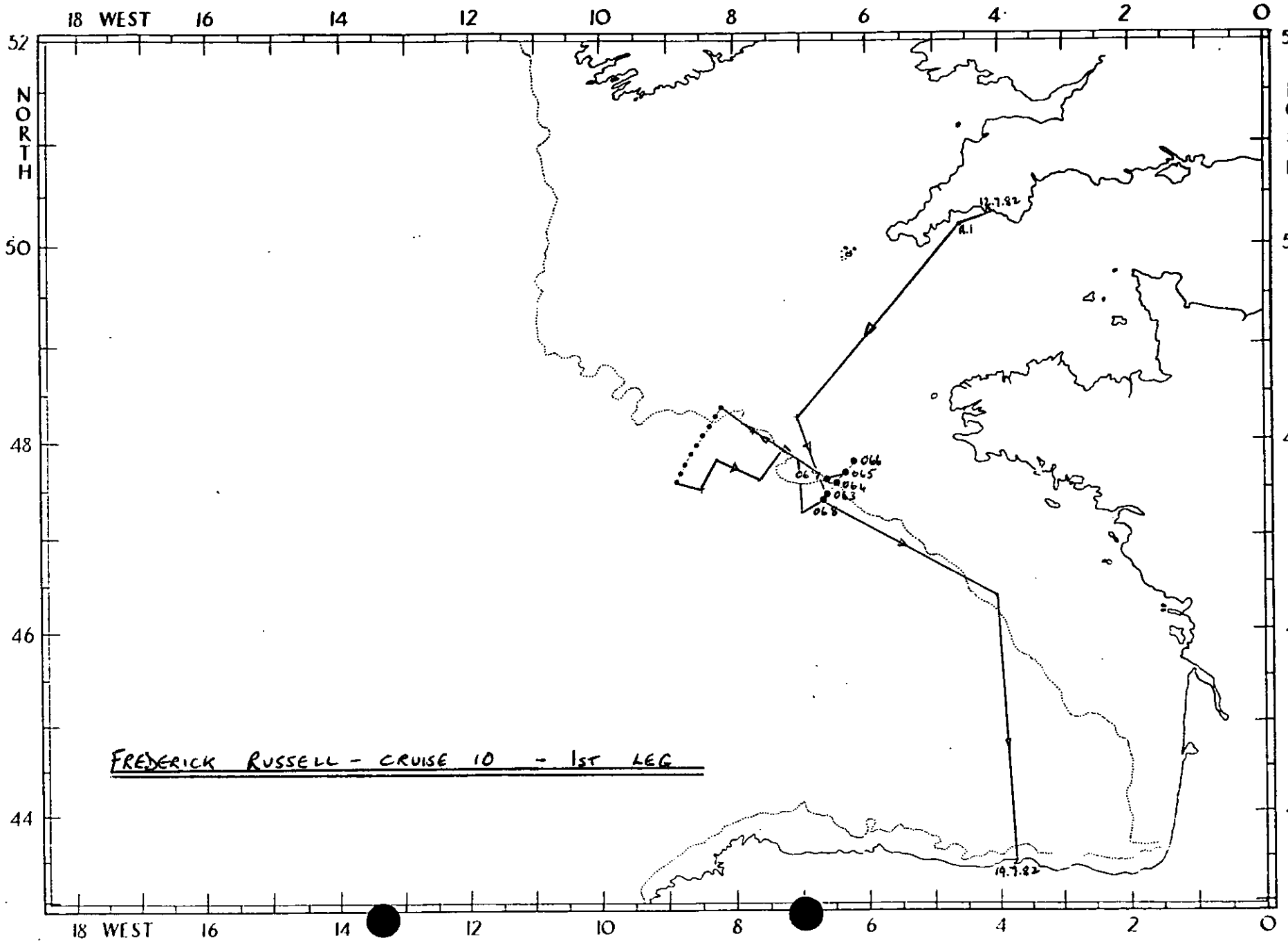
Navigation

The sat. nav. was disappointing even on the first half of the cruise when the EM log seemed to be functioning. As was stated in the cruise report the Decca had to be used to find the moorings deployed on cruise 8. In the absence of theEM log the other log was very unsatisfactory and seemed to have a large error.

General

1. The noise levels on board are still much too high.
2. As we stated in the cruise 8 report the stability of the ship does not seem as good as last year.

Scale : 1 : 11·4 million



Scale : 1 : 4·4 million