

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1971 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 11

(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

J W Ramster (8 - 18 October)
J A Durance
J Bedwell
T C Doddington
S R Jones
C Lewandowski (Student)

DURATION

Left Lowestoft 10.30 hours 8 October
Arrived Lowestoft 15.23 hours 28 October
All times are Greenwich Mean Time

LOCALITY

North Sea

AIMS

1. To service the three Lowestoft long-term moored current meter stations of the ICES North Sea network.
2. To establish short-term moored current meter stations
 - (i) Between the stations of the existing long-term German-UK line that stretches north-eastwards from Flamborough Head to the German Bight;
 - (ii) Between the existing German station and the Danish coast;
 - (iii) In a line between Lowestoft and the Dutch coast.

The data from these stations will provide much greater detail in the short-period than is normally available at the open boundaries of the MAFF mathematical model;

3. To establish 3 moored current meter stations for at least 12 $\frac{1}{2}$ hours around the AMOCO drilling platform sited near the Indefatigable Bank. The data from these stations will be compared with that given by instruments hanging from the platform to see if the rig structure is seriously affecting the flow patterns found in the open sea;
4. To establish 3 moored current meter stations relatively close inshore between Yarmouth and Southwold that will provide complementary data for Mr Talbot's concurrent diffusion cruises on the RVs TELLINA and NUCELLA;

5. To measure currents at 4 metre intervals throughout the water column for at least $12\frac{1}{2}$ hours at anchored stations close to each of the Lowestoft ICES stations;
6. To try to identify by means of a detailed temperature and salinity survey the position of the South West Dogger Bank gyre relative to the moored stations;
7. To begin an immersion test of part of the MAFF acoustic release system.

NARRATIVE

RV CLIONE sailed from Lowestoft at 10.30 hours on the 8 October. Current meter stations L, M and N between Lowestoft and IJmuiden were established on that day, 50 Woodhead sea-bed drifters being released at each station. Having completed station N at 22.30 hours the ship steamed to the AMOCO platform 49/18A, arriving at 06.48 hours the following morning. A current meter rig was prepared and laid at 09.24 hours. The ship then anchored near the rig and a Kelvin Hughes Direct Reading Current Meter (DRCM) was rigged. Observations were made at approximately 4m intervals throughout the water column at 10.20 hours, 11.30 hours and then every half hour until 18.00 hours. The current meter rig was recovered at 22.17 hours and the vessel steamed northwards towards station G off Esbjerg. A south-westerly gale prevented the laying of station G until 19.15 hours on 11 October. The remaining rigs between Esbjerg and Flamborough, Stations F, E and D, were laid at 06.17 hours and 15.14 hours on the 12 October, and 06.30 hours on the 13th respectively. En route the Lowestoft ICES stations A, B and C were sighted, and appeared satisfactory. 50 Woodhead sea-bed drifters were released at each of the stations D, E, F and G.

A grid of water bottle stations between latitudes 54°N and 55°N , from the Yorkshire coast to longitude 4°E was commenced at 11.50 hours on 13 October. Worsening weather conditions forced the grid to be abandoned at 14.20 hours on 15 October, and the vessel anchored in the lee of Flamborough Head. The grid was not recommenced until 16.55 hours on 16 October, and had to be abandoned at 10.19 hours the following morning because of bad weather. The ship proceeded to Lowestoft at reduced speed, to collect the current meter rigs for the three inshore stations H, I and K, docking at 08.25 hours on the 18 October. Mr Ramster had to leave the ship at this point in the cruise.

The rigs for the second half of the cruise were loaded on 18 October, and RV CLIONE sailed at 08.30 hours on the 19 October. None of the stations H, J or K could be laid, because of a southerly gale. The vessel anchored off Sea Palling, where the rig for station H was prepared, and that for station J partially completed. Later in the day the wind moderated sufficiently for station H to be laid at 17.45 hours. As station J could not be launched safely in the dark the ship steamed to station K. The weather conditions were unsuitable for laying this rig, and the ship anchored off Southwold for the night. The following morning at slack water stations K and J were laid, and course was set for station L at 11.34 hours. Having checked station L the ship proceeded to station M, where the subsurface float was found to be on the surface. It was not possible to lift the rig because of the continuing south-westerly gale, and the ship continued to station N where the buoy light was sighted at 19.50 hours. The vessel dodged towards station M for the rest of the night awaiting suitable weather conditions for recovery. By the morning of the 21 October the wind had eased sufficiently for station M to be recovered at 07.30 hours. The weather forecast held little hope of

completing DRCM observations at any of the ICES stations, and so the short period of reasonable weather was spent checking station N in daylight.

In a freshening southerly wind RV CLIONE set course for Esbjerg at 10.41 hours. During the night the weather deteriorated further, and the ship was forced to turn round and dodge from 06.15 hours on the 22 October until 01.30 hours on the 23 October. Taking advantage of the improved weather station G was recovered at 08.12 hours before docking at Esbjerg at 13.25 hours.

RV CLIONE sailed from Esbjerg at 15.00 hours on the 24 October, to arrive at station F at first light the following morning. Station F was recovered at 07.10 hours on the 25 October, and the vessel steamed to the ICES station C. Buoy C was located at 10.10 hours, $1\frac{1}{4}$ miles out of position. The rig was recovered at 11.16 hours with the subsurface float and top meter missing. Station E was recovered at 17.10 hours and the ship set course for ICES station A. On the morning of the 26 October two buoys were found in the vicinity of station A. One was buoy A in the correct position, the other was two miles away, and was identified as an old buoy A lost on an earlier cruise. The old buoy was recovered together with two weights at 07.52 hours. Station D was recovered at 10.23 hours, and the ship then set course for station N off IJmuiden, passing ICES buoy B on the way. Stations N, L and K were recovered at 05.41 hours, 17.12 hours and 23.00 hours respectively on 27 October. The following morning station J was recovered at 06.20 hours. Station H was recovered at 10.30 hours with the loss of both weights, and the ship docked at Lowestoft at 15.23 hours on the 28 October.

RESULTS

1. Short-term moored current meter stations were established;
 - (i) On a line from Flamborough head to Esbjerg. These stations supplemented the existing ICES permanent stations, and were in operation simultaneously for ten days;
 - (ii) On a line from Lowestoft to the Dutch coast. The middle one of these three stations (station M) was found to be faulty on 20 October, and it is not yet known how long this station functioned correctly.

All these stations were recovered successfully with the loss of one weight from station M only.

2. One moored current meter station was established near the AMOCO drilling platform for a tidal cycle, and recovered successfully. The velocity profile of the tidal currents was also measured with a DRCM every $\frac{1}{2}$ hour for $6\frac{1}{2}$ hours.
3. 3 moored current meter stations were established between Yarmouth and Southwold to provide complementary data for Mr Talbot's concurrent diffusion cruises on RVs TELLINA and NUCELLA. These 3 stations were recovered with the loss of 2 weights from station H.
4. ICES station C was recovered $1\frac{1}{4}$ miles out of position with the loss of one meter and the subsurface float. A surface buoy from an old ICES station A was found, and recovered together with two weights.

5. 50 Woodhead sea-bed drifters were released at each of stations D, E, F, G, L, M and N.
6. A detailed hydrographic survey of the region of the South-West Dogger Bank gyre was partially completed.
7. Bad weather prevented Aim 5 of the cruise programme being accomplished and Aim 1 had to be abandoned because there were no instruments available for use at the ICES stations. Consequently Aim 7 had to be held over until the next servicing of the ICES rigs takes place.

J A Durance

3 November 1971

SEEN IN DRAFT: M R Sutcliffe (Master)

A H Button (Fishing Skipper)

INITIALLED DHC

DISTRIBUTION

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